IPART
Independent Pricing and Regulatory Tribunal
New South Wales

# REVIEW OF PRICES FOR THE WATER ADMINISTRATION MINISTERIAL CORPORATION FROM 1 JULY 2021 TO 30 JUNE 2025

Draft Report

March 2021

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**The Independent Pricing and Regulatory Tribunal (IPART)**

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# Tribunal Members

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# Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

**Submissions are due by 16 April 2021**

We would prefer to receive them electronically via our online submission form.

You can also send comments by mail to:

**Review of WAMC prices from 1 July 2021**
Independent Pricing and Regulatory Tribunal
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Late submissions may not be accepted at the discretion of the Tribunal. Our normal practice is to make submissions publicly available on our website as soon as possible after the closing date for submissions. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed above.

We may choose not to publish a submission - for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. However, it could be disclosed under the *Government Information (Public Access) Act 2009* (NSW) or the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW), or where otherwise required by law.

If you would like further information on making a submission, IPART's submission policy is available on our website.

# Contents

# 1 Executive Summary

The Independent Pricing and Regulatory Tribunal (IPART) is reviewing the prices the Water Administration Ministerial Corporation (WAMC) can charge holders of water access licences in NSW regulated river, unregulated river and ground water systems (water users).

WAMC is the entity responsible for water resource management in NSW. This includes, for example, 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 changes.

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. The prices include:

- **Water management prices,** 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 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.
- **Miscellaneous charges,** including metering service charges, water take assessment charges, and 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 have completed our draft review of these prices and made draft decisions on the prices to apply for the 4-year period from 1 July 2021 to 30 June 2025. This report outlines these decisions, explains how and why we reached them, and seeks stakeholder feedback.

The report also sets out our preliminary views on new prices proposed to recover water users' share of the costs of implementing the NSW Government's non-urban metering reform program. Water NSW submitted its proposal on these prices on 30 November 2020. We have completed our initial review and are now seeking stakeholder feedback on the proposal and our preliminary position.

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

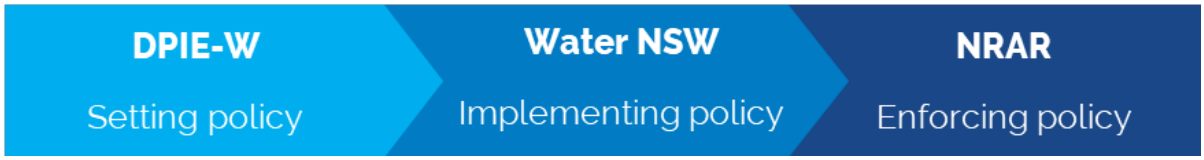
Since our last review of WAMC's prices, the NSW Government has undertaken changes to the industry structure and legislative framework to improve water management arrangements across the state. The reforms respond to the recommendations of several independent inquiries. The inquiries identified historical 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.[i]

WAMC's June 2020 pricing proposal outlined its plan to respond to these reforms and lift its performance in these areas. The proposal also reflected its plans to improve transparency and accountability in response to feedback from water users.

Our current 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.

This investment will be largely funded by the NSW Government. However, as efficient costs of providing WAMC services are increasing, water users will need to make a contribution to efficient costs 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 two NSW Government agencies and a utility – the Department of Planning, Industry and Environment - Water (DPIE-W), the Natural Resources Access Regulator (NRAR), and Water NSW.



## 1.2 Draft prices are more transparent and more cost-reflective

In setting draft prices, we have:

- Constrained the increase in WAMC's water management component charges of bills to a maximum of 2.5% per year and a total of 10% over the determination period (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 Water management charges increases by 2.5% per year plus inflation

We have set draft water management 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 next 4 years, while others will achieve full cost recovery over a number of determination periods.

Because we are unbundling charges, we set WAMC's water management charges by considering the minimum between:

1. the prices required to achieve full cost recovery over the next 4-year period, and
2. the level of prices that will transition the current 2020-21 combined prices[1] to full cost recovery prices at a maximum real increase of 2.5% per year.

This means the maximum price increase for WAMC water management charges is 10% (before inflation and excluding the MDBA and BRC charges) over the next 4 years.

However, water users' actual price increase will vary, depending on their water source. Key drivers of price changes are:

- Our draft decision that WAMC's efficient cost allowance has increased by 25% since the last determination (which is primarily driven by higher investment in its corporate support systems, see section 1.4). This is around half the cost increase that WAMC sought in its proposal. Under the WAMC proposal, water management charges would have risen by around 5% per year.[ii]
- Maintaining the cost shares set by our 2019 review of rural water cost shares.[iii] During this review, we examined each of WAMC's 33 activities in order to understand who was creating the need for the activities (and therefore who should incur the costs through revised cost shares). As a result, 78.4% of the total notional revenue requirement is being allocated to water users, compared with 72.3% in the 2016 review of WAMC prices.

1 Combined prices is the sum of entitlement charge plus the water take charge for each water source. These 2020-21 prices exclude our estimated MDBA and BRC prices. We exclude these prices to allow for like-for-like starting point for the WAMC water management charges.

- Changes to forecasts of entitlements and water take volumes since the last determination. 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 that 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.

### 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 have decided to unbundle these costs and set separate MDBA and BRC charges. These charges will apply to all water users in NSW's sections of the Murray-Darling Basin and Border Rivers systems. We have set draft MDBA and BRC charges to recover water users' share of the full efficient MDBA and BRC costs from 1 July 2021.

### 1.2.3 Consent transaction and miscellaneous charges set to improve cost recovery

Under our draft decisions, most consent transaction charges are higher than the current 2020-21 charges. This is because the 2016 Determination was based on a lower forecast number of consent transactions and some charges did not reflect the full costs required to deliver these services.

We have accepted WAMC's proposal that consent transaction charges increase to recover the costs to provide these fee-for-service transactions. However, we have reduced its proposed prices by 20% to create an incentive for it to make efficiency gains in providing these services.

## 1.3 Annual bill impacts expected to be relatively modest in dollar terms

The impact of our draft water management, MDBA and BRC charges on annual bills for typical water users[2] varies between −$375 and $670 in 2021-22 depending on the water source:

- For regulated water sources, typical bills for most water sources increase by up to $300 in 2021-22. However, in Border, bills rise by around $670. In Namoi, bills decrease by around $200.
- For unregulated water sources, typical annual bills increase by up to $400 for 5 water sources and decrease by up to $330 for the remaining 7 water sources.
- For groundwater sources, typical annual bills in the Border and Inland regions decrease by up to $400 for those on a 2-part tariff. In the Murrumbidgee and Coastal regions, they increase by around $250 and $50 respectively, for those on a 2-part tariff.
- For small water users paying the minimum annual charge (MAC), bills increase by up to $35. For those closer to the MAC threshold and in regions where MDBA or BRC charges apply, they increase by up to $140 because these charges are now separately levied on all users in these regions.

The following table shows the percentage change in typical water user bills for different water sources and tariff types between 2020-21 and 2024-25.

**Table 1.1 Total change in typical water user bills under our draft prices over the 4-year determination period**

| 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 | 40% | −11% | −6% | 3% | −10% |
| Gwydir | 11% | −11% | - | 3% | - |
| Namoi | −11% | −11% | - | 3% | - |
| Peel | 19% | −11% | - | 3% | - |
| Lachlan | 10% | −6% | - | -2% | - |
| Macquarie | 11% | −6% | - | -2% | - |
| Far West | - | 14% | - | 13% | - |
| Murray | 13% | 5% | - | 12% | - |
| Murrumbidgee | 16% | 9% | 20% | 11% | 15% |
| North Coast | 12% | 8% | - | 10% | - |
| Hunter | 10% | 9% | - | 10% | - |
| South Coast | 10% | 12% | - | 10% | - |
| Inland | - | - | −13% | - | −16% |
| Coastal | - | - | 10% | - | 10% |

**Source:** IPART analysis

2 We defined a typical water user as one who holds 500ML of entitlements and uses 60% of this volume per year.

## 1.4 We have made considerable reductions to WAMC's proposed expenditure, however efficient costs are increasing

Under our draft decisions, WAMC's total notional revenue requirement over 2021 determination period is $278.3 million (inclusive of MDBA and BRC costs) which is $24.6 million or 9.7% higher than the NRR we used to set the current 2016 prices. We have increased the total operating expenditure allowance by $4.5 million (2.2%), and capital expenditure allowance by $19.3 million (129.1%). The significant increase for capital expenditure is to provide additional investment for corporate support systems that was not previously included in the 2016 allowance.

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 $68.9 million (24.8%) and the efficient capital expenditure is around $7.8 million (18.5%) lower than WAMC's proposal. (See Table 1.2).

**Table 1.2 WAMC's proposal and IPART's decision on expenditure for the 2021 determination period (millions, $2020-21)**

| | Operating expenditure | Capital expenditure |
|---|---|---|
| WAMC proposal | 277.6 | 42.1 |
| IPART draft decision | 208.8 | 34.3 |
| Difference ($) | −68.9 | −7.8 |
| Difference (%) | −24.8% | −18.5% |

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

In relation to operating expenditure, our efficiency adjustments are for compliance and enforcement, regional water planning, customer management, water modelling and a number of other water management activities. In particular, we have reduced compliance costs by $38.9 million (or 62.0%). 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. In relation to capital expenditure, our efficiency adjustments are for Water NSW's corporate capital expenditure.

In determining WAMC's efficient level of expenditure, we have applied catch-up and continuing efficiency adjustments. We have applied different annual catch-up efficiency adjustments ranging from 0.9% to 2.1% cumulative for different WAMC agencies to recognise the relative improvements each agency could make to its business processes, which would bring it closer to how an efficient utility operates. We also applied a continuing efficiency adjustment of 0.7% per year.

We consider our draft decisions deliver efficiency benefits to WAMC and water users. Our adjustments recognise the efficiency challenges proposed by the WAMC agencies and also identifies how WAMC can achieve our recommended efficiency savings. We consider that by improving its processes, WAMC could also provide better quality information to support its pricing proposal. 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 water management charges.

We note that although WAMC consulted 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 levels. We would like to see the outcomes of such customer consultation incorporated into future price submissions to IPART.

## 1.5 The user share of WAMC's efficient costs has increased

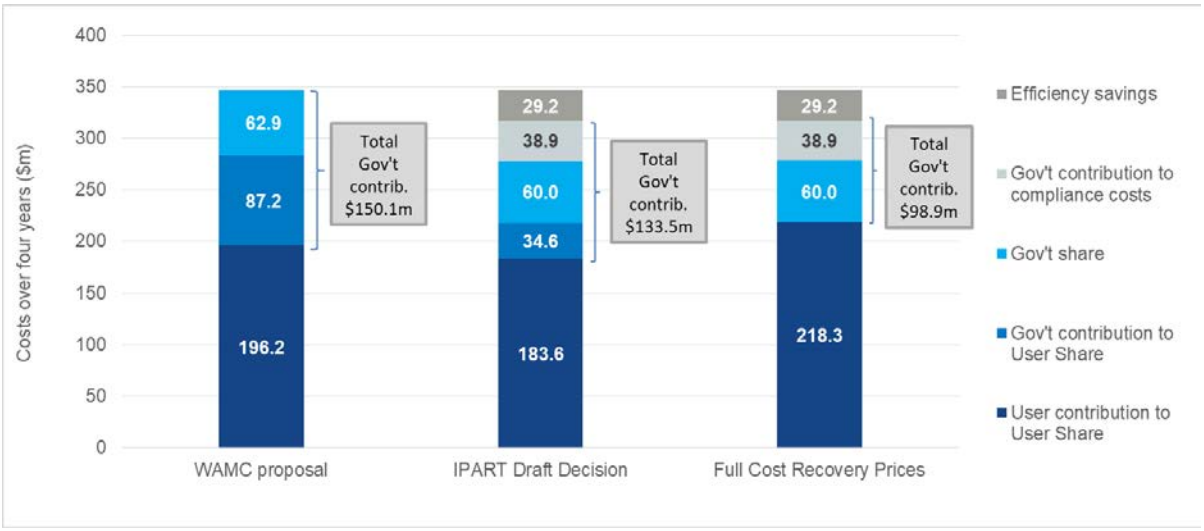
In sharing WAMC's efficient costs between water users and the NSW Government, we have used the updated cost share ratios determined in our 2019 review of rural water cost shares.[iv] The user share is 78.4%, which represents a contribution of $218.3 million over the 4-year 2021 determination period.

## 1.6 Because WAMC's prices do not recover full costs, NSW Government will need to contribute $134 million

Under our draft decisions, prices will be higher for most (but not all) water users compared with current 2020-21 prices. However, while draft prices in some water sources will achieve full cost recovery, the draft prices do 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 price impacts on water users. We have achieved this balance by transitioning prices towards full cost recovery.

Under our draft prices, we expect water users' contribution to fall short of this amount by $34.6 million. The NSW Government will need to fund this shortfall, as well as fund the Government share of the efficient costs (i.e. $60 million) and contribution to additional compliance costs (i.e. $38.9 million). This result in total NSW Government contribution of $133.5 million over the 2021 determination period (see Figure 1.1). This is $16.6 million lower than the total government contribution under WAMC's proposal.

**Figure 1.1 Comparison of NSW Government total contributions under our draft decisions and WAMC's proposal ($ million, $2020-21)**




**Source:** WAMC pricing proposal to IPART, June 2020 and IPART analysis.

## 1.7 Preliminary view on proposed costs and prices for non-urban metering reform

On 30 November 2020, Water NSW submitted a supplementary proposal to include additional metering costs and introduce a new suite of metering charges to implement the NSW Government's metering reform policy. Water NSW's proposal applies to both the WAMC and Water NSW rural bulk water reviews.

We support the NSW Government's comprehensive reforms on metering, but Water NSW's proposed implementation program is still at a preliminary stage of development. Based on the information provided, our preliminary position is that, at this stage, we do not yet have sufficient information to set prices to include the proposed metering costs in regulated prices over the upcoming determination period. We have concerns about whether Water NSW's proposed costs are efficient and we consider more work is needed to ensure Water NSW's implementation of these reforms is both effective and efficient.

While we are not yet in a position to determine efficient costs for the new metering policy, this does not mean we consider Water NSW's efficient costs of implementing the reforms to be zero. Further, not setting draft prices does not mean Water NSW should not implement the NSW Government's non-urban metering reform policy. We consider Water NSW should bear the risks and costs associated with the implementation of this policy until it has demonstrated that its proposed costs are efficient so they can be included in regulated prices.

At this stage, we are still seeking further information on the efficient costs, as well as feedback from customers, water users and other stakeholders. We will ensure that the requirements under the Water Charge (Infrastructure) Rules 2010 are met when setting prices in our final determination in June 2021, including any charges we set to recover the efficient metering costs.

We are seeking stakeholder feedback on Water NSW's proposed costs and prices, the key issues identified in our chapter on metering reform (Chapter 14) as well as any other issues related to metering reform that stakeholders wish to raise.

## 1.8 Our process for this review

Our review process to date has involved the collection of information as well as detailed analysis and public consultation:

- In June 2020, we received two pricing proposals (one from DPIE and NRAR and another from Water NSW) which we refer to collectively as WAMC's proposal.
- In September 2020, we released an Issues Paper which outline this proposal, explained our approach for the review, and sought submissions from stakeholders. We received 16 submissions.
- In November 2020, we held an online public hearing. The public hearing provided an opportunity for the public and stakeholders to have their say or ask questions on these water price reviews.

- We have comprehensively reviewed the efficiency of WAMC's proposed costs. This has included:
  - We engaged Cardno to review WAMC's proposed expenditure and Water NSW's proposal on non-urban metering reform.
  - We engaged Atkins to review the efficiency of the proposed MDBA and BRC costs across both WAMC and Water NSW reviews. We also engaged Atkins to review the level and allocation of Water NSW's corporate costs across the WAMC and Water NSW reviews.
- We are now publishing our Draft Report and are seeking stakeholder views on whether we have struck the right balance between facilitating the necessary reforms in water resource management and limiting price shocks on water users.

Table 1.3 sets out our timetable for the remaining key milestones in this review.

**Table 1.3 Review timetable**

| Key milestone | Timing |
|---|---|
| Release Draft Report and Determination | 16 March 2021 |
| Hold second online public hearing | 30 March 2021 |
| Submissions to Draft Report due | 16 April 2021 |
| Release Final Report and Determination | June 2021 |

## 1.9 How you can have your say

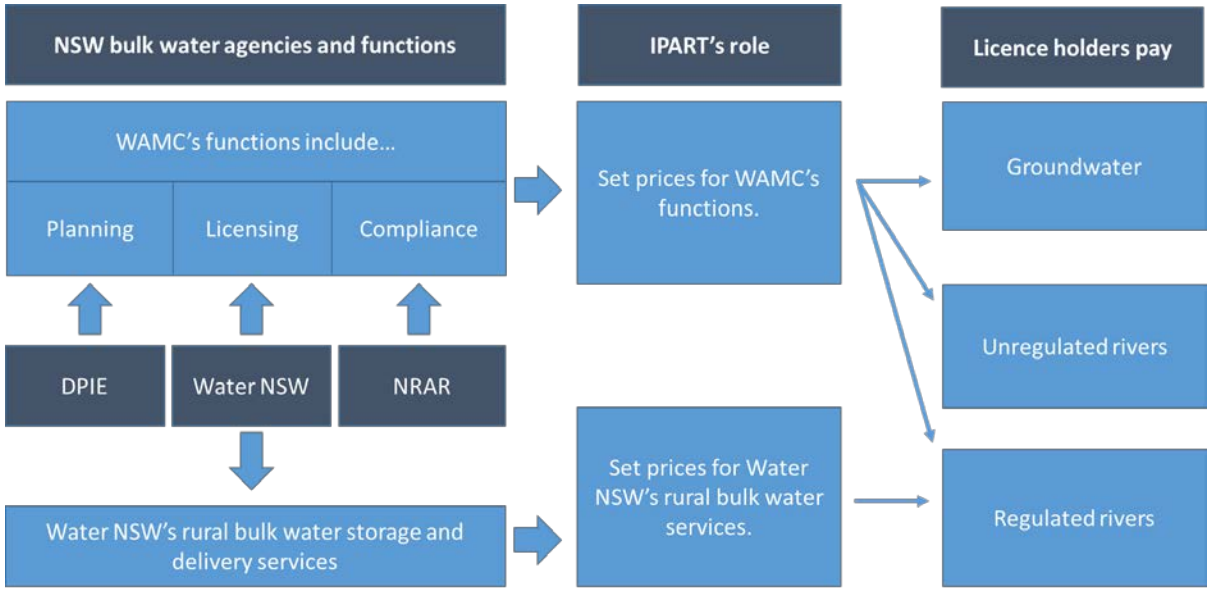
We are seeking written submissions on this Draft Report and encourage all interested parties to comment on the draft findings and decisions it discusses, or any other issue relevant to the review. As well as our draft decisions on WAMC's efficient costs and prices, we are particularly interested in stakeholder views on the proposed meter reform costs and charges (Chapter 14). Page iii of this report provides more information on how to make a submission. Submissions are due by 16 April 2021.

## 1.10 We are also seeking views on our Draft Report on Water NSW prices

Concurrent with this review of WAMC's prices, we are also reviewing prices for Water NSW's services in rural valleys. We have aligned the consultation processes for these reviews so that we are releasing draft reports and holding consultation periods and public hearings for these reviews at the same time.

The following diagram 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. ground water, unregulated rivers and regulated rivers) while Water NSW's rural prices apply only to water users on regulated rivers.

**Figure 1.2 Overview of WAMC and Water NSW relationships and our role in setting prices**




## 1.11 Structure of this report

The rest of this Draft Report provides more information on this review, our approach and our draft recommendations:

- Chapter 2 discusses our draft decisions on the regulatory settings for the 2021 determination period, including the length of this period and our approach for price setting
- Chapters 3 and 4 explain our draft decisions on WAMC's operating and capital expenditure allowances
- Chapter 5 focuses on our draft decisions on MDBA and BRC costs
- Chapter 6 sets out our draft decisions on the other cost allowances, and WAMC's total notional revenue requirement
- Chapters 7 discusses our draft decisions on the cost share ratios and cost drivers for allocating costs across water sources
- Chapter 8 explains our draft decisions on the water entitlement and take forecasts we used to set prices
- Chapter 9 discusses our draft decisions on price structures for water management services
- Chapter 10 sets out the draft water management charges and MDBA and BRC charges that result from our draft decisions on efficient costs, water entitlement and take forecasts and price structures.
- Chapter 11 discusses how these draft decisions impact stakeholders, including water users, WAMC and the NSW Government.
- Chapter 12 sets out our draft decisions on costs and charges for water consent transactions

- Chapter 13 sets out or draft decisions on WAMC's existing metering charges
- Chapter 14 summarises Water NSW's proposal on prices to recover the costs of the NSW Government's non-urban metering reform program and sets out our preliminary position.

## 1.12 List of draft decisions

### Form of regulation

1 To adopt a 4-year determination period, from 1 July 2021 to 30 June 2025. 18

2 To set maximum prices for WAMC services in each year of the determination period (a price cap). 19

3 To factor the costs of most of WAMC's proposed activities into prices for its monopoly services for the 2021 determination period. 22

– The exception is for W06-07 cross border and national commitments. We have excluded 25% of the intergovernmental activity costs, since they do not relate to the WAMC monopoly services which we regulate. 22

### Operating expenditure

4 To set WAMC's total operating expenditure allowance for the 2021 determination period at $208.8 million, as shown in Table 3.1. 26

5 IPART's draft decision is for WAMC to report annually against the output measures and in accordance with the framework listed in Appendix D. This output measures report will be published on IPART's website. 38

### Capital expenditure

6 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. 40

7 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 4.3. 42

### MDBA and BRC expenditure

8 The efficient level of WAMC's MDBA costs for the 2021 determination period is $34.6 million (Table 5.1). 47

9 The efficient level of WAMC's BRC costs for the 2021 determination period is $3.5 million (Table 5.2). 47

10 To use the building block approach to set efficient MDBA and BRC costs. 54

11 To set WAMC's operating and capital expenditure for MDBA costs as shown in Table 5.5. 55

### Other building block costs and the notional revenue requirement



### Cost shares and cost drivers

### Forecast entitlement and water take volumes



### Price structures for water management charges

### Draft prices for water management charges



### Water consent transaction charges

### Existing metering charges

46 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. 147

47 To set WAMC's annual water take assessment charges for the 2021 determination period as shown in Table 13.2. 148

48 To set WAMC's annual ancillary charges for the 2021 determination period as shown in Table 3.4. 149

## 1.13 List of questions for stakeholder feedback

As noted above, we are seeking feedback from stakeholders on our draft findings and decisions. We are also seeking feedback on the proposal we received from Water NSW on prices to recover the costs of implementing the NSW Government's metering reform program. In relation to this proposal, we are particularly interested in stakeholder views on the following questions:

### Special licence categories

1 What are your views on WAMC's pricing proposals in relation to special licence categories for the 2021 determination period? Do you support the continuation of these special licence categories? Do you agree with the rationale? 102

### Non-urban metering reform

2 Do you consider the indicative scheme proposed costs are affordable and what are the impact of proposed bill increases on licence holders? 161

3 Will Water NSW's proposal result in a consolidation of entitlements and fewer licence holders? 161

4 Will the metering policy result in some water users downsizing their works to avoid the 100mm meter threshold for the new policy? 162

5 What are the impacts, if any, on customers and Water NSW if customers with government owned meters choose the opt-out option? 163

6 If there are other providers who can provide the service, would there be an economic case to not set a regulated price for the MSC? 163

7 If you have decided or are deciding to opt out of the government owned scheme and own your own meter, please tell us the reasons why you switched or are considering switching. 163

8 If we do set a regulated maximum price for metering where there are alternative providers, what should we consider to ensure we support efficient outcomes in these situations? 163

# 2 Context and regulatory settings

## Summary of our draft decisions for regulatory settings

**We are setting prices for a 4-year determination period**

- We have accepted WAMC's proposal on length of determination.
- It means the timing of the next WAMC and Water NSW rural bulk water reviews remain aligned.

**We continue to set maximum prices (i.e. price caps)**

- WAMC proposed using this form of regulation, and we consider it 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 use a three-step process to assess expenditure**

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

**We have decided to include the costs of most of WAMC's proposed activities in prices for its monopoly services**

- In particular, we have included the costs of recycled water and desalination planning (which are part of WAMC's metropolitan water planning activities) and the Nimmie-Caira project in prices for WAMC monopoly services.
- This represents a difference from our 2016 Determination, where these costs were either not accepted or were not proposed.
- However, we have excluded 25% of WAMC's intergovernmental agency costs from the prices for its monopoly services, since these costs should not be recovered from water users.

Before setting prices, we need to make several preliminary decisions, including how long to set prices for and decisions related to the 'form of regulation', which is the framework we use to regulate prices.

## 2.1 We are setting prices for a 4-year determination period

Our draft decision is:

1 To adopt a 4-year determination period, from 1 July 2021 to 30 June 2025.

For each water pricing review, we decide how long to set prices for (the length of the determination period). In general, this length can be between one and 5 years. In deciding on the appropriate length, we considered a range of factors that are outlined in Box 2.1.

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

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

- Confidence we have in the utility's forecasts.
- Risk of structural changes in the industry.
- Need for price flexibility and incentives to increase efficiency.
- Need for regulatory certainty and financial stability.
- Timing of other relevant reviews.
- Views of stakeholders.

WAMC proposed a 4-year determination period, from 1 July 2021 to 30 June 2025, to provide price stability for water users.[v] Further, it considered that, on balance:[vi]

> …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 determination period. We also sought views on the merits of aligning the price determinations 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 slightly longer determination period (i.e., 5 years). Further, stakeholders provided general support for aligning the price determinations of the two rural water reviews.

For this review, we agree with WAMC that a 4-year determination period is appropriate. A 4-year period provides a stable and predictable regulatory environment for WAMC and water users, while minimising regulatory costs. In addition, we note that a 4-year determination period for WAMC would result in alignment with the determination period for Water NSW.

## 2.2 We continue to use price caps and are not introducing unregulated pricing agreements

Our draft decision is:

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

Our decision is to maintain our approach to set maximum price caps for WAMC. We consider price caps provide transparency and pricing certainty to customers and ensure that, as much as practical, prices reflect efficient costs, and where appropriate, signal the long-run cost of providing the service.

Our approach is supported by WAMC for this determination period.[vii] No other stakeholders raised alternative forms of regulation.

## 2.3 We use the building block approach to calculate WAMC's notional revenue requirement

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

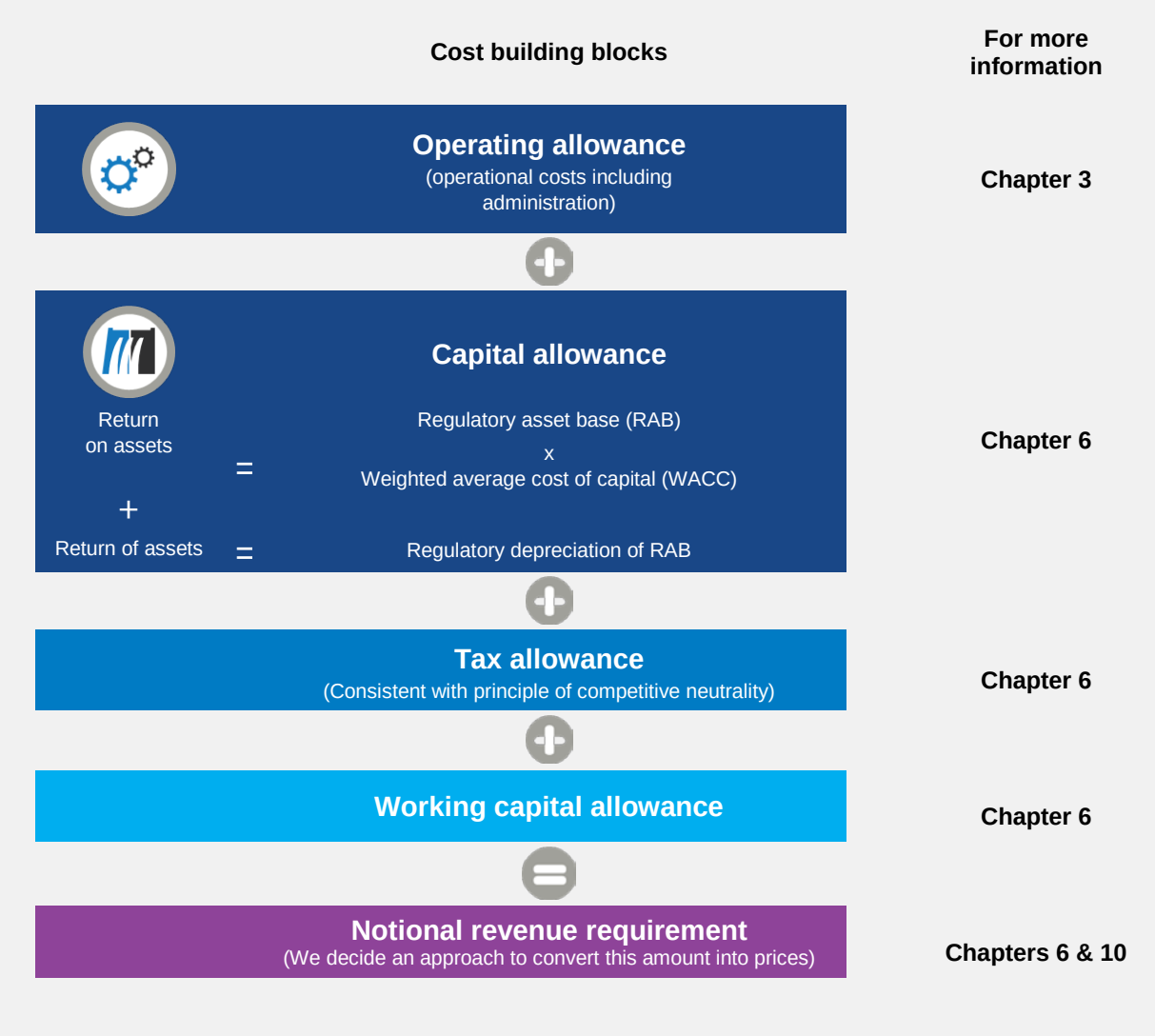
- **operating allowance**, to cover costs such as administration costs
- **capital allowance**, comprised of:
  - return on assets that WAMC uses to provide its services
  - regulatory depreciation (or a return of the assets that WAMC uses to provide its services), which involves deciding on the appropriate 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 represents our assessment of the total efficient costs WAMC should incur in delivering its services.

Once we have calculated WAMC's notional revenue requirement, we then decide on the approach we use to convert this amount into prices. This involves setting the target notional revenue requirement for each year – that is, the actual revenue we expect WAMC to generate from prices and charges for that year. In making this decision on target revenue, we consider a range of factors, including implications on price levels, the rate they would change, and any impacts on WAMC and water users.

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

**Figure 2.1 The building block model**



## 2.4 We use a 3-step process to make expenditure adjustments

We have used a 3-step process to establish WAMC's efficient expenditure (see Chapters 3 and 4). This is consistent with the approach adopted by our consultant Cardno, and our other recent water pricing reviews. As outlined in Figure 2.2, it involves:

### Step 1 – Reviewing changes in activities and costs:

- Where the utility has proposed changes to its specific programs, this step identified any inefficiencies with those changes. It does not apply to the utility's base expenditure (to avoid double counting with step 2).
- If the utility's proposed changes in activities (and associated costs) are not efficient, a **scope adjustment** is made.
- These adjustments are clearly distinct from the types of efficiencies identified in step 2, since 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:

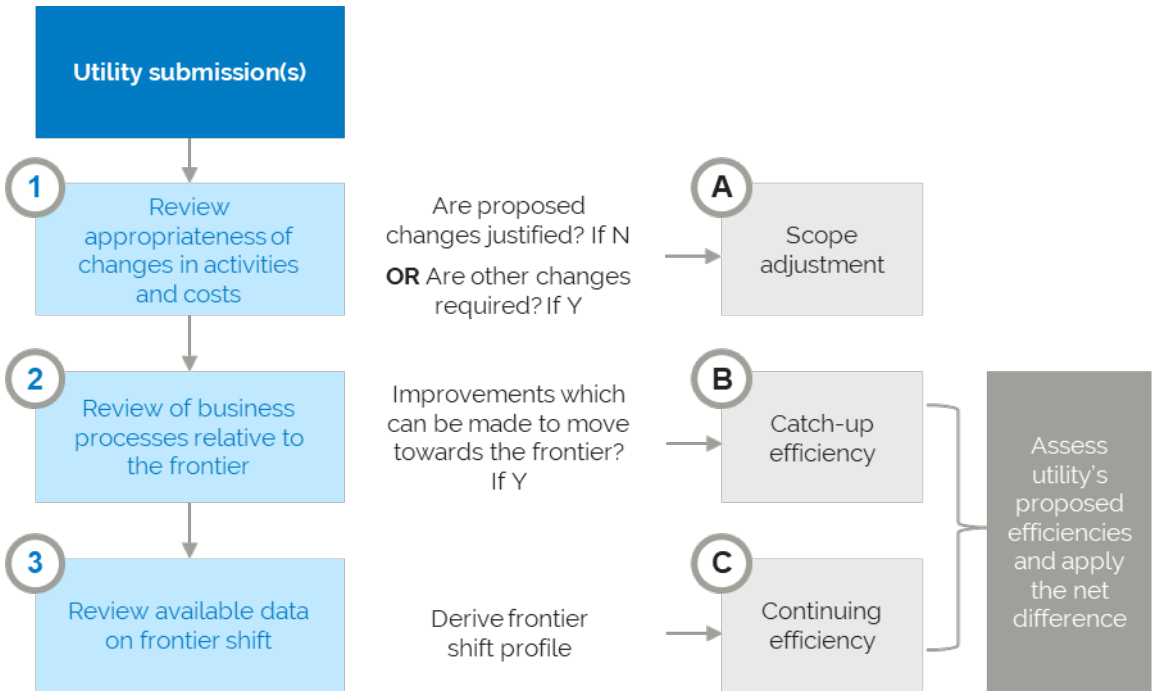
- This step identifies the effectiveness of the utility's business processes (e.g. decision making and procurement processes) relative to a 'frontier' company.
- Where we identify improvements to these business processes, we apply a **catch-up efficiency adjustment.** It takes into account the efficiencies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

### Step 3 – Reviewing available data on frontier shift:

- We consider a number of data points such as the efficiency gains of well-performing utilities and broader productivity trends (e.g. multi-factor productivity). 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 apply a **continuing efficiency adjustment** to take account of the ongoing improvements that even efficient utilities should be able to make over time, as better, more productive, ways of working emerge. We set it with reference to long-term multifactor productivity trends.

We compare the total efficiency challenge we derive 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 Approach to assessing efficiency**




## 2.5 We have decided that the costs of most of WAMC's proposed activities should be factored into prices for its monopoly services

Our draft decision is:

3 To factor the costs of most of WAMC's proposed activities into prices for its monopoly services for the 2021 determination period.

– The exception is for W06-07 cross border and national commitments. We have excluded 25% of the intergovernmental activity costs, since they do not relate to the WAMC monopoly services which we regulate.

As a preliminary stage of our review, we determine which WAMC activities are sufficiently relevant to its monopoly services (i.e. 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. We have previously referred to the *Water Management Act 2000*, as well as the *National Water Initiative Pricing Principles*, to assist with this decision. These principles – agreed to by the Australian, State and Territory governments – provide guidance on the types of water planning and management costs which should be recovered through prices.

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

### 2.5.1 We have factored metropolitan water planning costs into prices for WAMC's monopoly services

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 *National Water Initiative*.

However, DPIE and 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.[viii]

We agree with this reasoning, and note it is consistent with views we have expressed in recent price reviews. In particular, we have 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".[ix]

Cardno supported this position. It noted that:

- 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 *National Water Initiative 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.[x]

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 *National Water Initiative* as a guide, ideas about integrated water planning have changed.[3]

Therefore, we have made a draft decision to no longer exclude recycled water and desalination planning costs from prices for WAMC's monopoly services.[4] WAMC has proposed metropolitan water planning costs of around $2.6 million per year. We discuss the efficiency of these costs in Chapter 3.

3 For example, we note that the Productivity Commission's review of the National Water Initiative 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).

4 We note that 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.

### 2.5.2 We have factored Nimmie-Caira costs into prices for WAMC's monopoly services

DPIE and 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. Further, the costs of other SDLAMs are already factored into prices for WAMC's monopoly services.[xi]

We have accepted the proposal from DPIE and 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 have made a draft decision to factor its operation and maintenance costs (around $0.13 million per year) into prices for WAMC's monopoly services.

### 2.5.3 We have excluded 25% of intergovernmental activity costs from prices for WAMC's monopoly services

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 that some of the activities were more akin to policy development rather than implementation[5] (representing around 25% of expenditure for this activity), and so should be excluded from prices for WAMC's monopoly services.

We have accepted Cardno's recommendation and excluded these costs (around $0.3 million per year). We note the *National Water Initiative Pricing Principles* outlines that policy development costs should not be recovered from water users. By contrast, policy implementation costs are recoverable.

5 According to the *National Water Initiative 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 (eg *Water Management Act 2000*): *National Water Initiative Pricing Principles*, pp13-14.

# 3 Operating expenditure

## Summary of our draft decisions for operating expenditure

**We made a 24.8% reduction to WAMC's proposed operating expenditure**

Our draft decision is to set WAMC's efficient level of operating expenditure for the 2021 determination period at $208.8 million. This results in expenditure for the 2021 determination period being slightly ($4.5 million or 2.2%) higher than the forecast levels of expenditure we used to set prices in 2016.

This expenditure is exclusive of MDBA and BRC costs, consent transaction costs and metering costs which we discuss in other chapters of this Draft Report.

**WAMC could make $68.9 million in efficiency savings**

We found around $68.9 million (24.8%) of the proposed operating expenditure is not efficient. We have excluded these costs from the 2021 determination allowance. Our recommended reductions for the forecast operating expenditure are comprised of:

- $61.6 million in scope adjustments
- $3.7 million in catch-up efficiency adjustments, and
- $3.7 million in continuing efficiency adjustments.

Our adjustments recognises the efficiency challenges proposed by the WAMC agencies and also identifies how WAMC can achieve our recommended efficiency savings.

**We have reduced compliance costs by 62.0%, however we consider these costs are required in the short term and should be paid for by the NSW Government**

We found the efficient costs of compliance is $38.9 million (62.0%) less than WAMC proposed. However, 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.

We have recommended WAMC seek government funding to recover the balance of the reduced compliance costs, which are not recovered from users through its water management prices.

This means WAMC will have $247.7 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 have 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 draft decisions on the efficient operating expenditure.

This chapter does not include proposed expenditure for MDBA and BRC (Chapter 5), consent transactions (Chapter 12), existing metering charges (Chapter 13) and proposed non-urban metering reform charges (Chapter 14).

## 3.1 We made a 24.8% reduction to WAMC's proposed operating expenditure

Our draft decision is:

4 To set WAMC's total operating expenditure allowance for the 2021 determination period at $208.8 million, as shown in Table 3.1.

**Table 3.1 IPART's draft decision on efficient operating expenditure over 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 |
| Draft decision | 53.1 | 53.1 | 51.5 | 51.0 | 208.8 |
| Difference | -16.8 | -17.5 | -17.4 | -17.2 | -68.9 |
| Difference (%) | -24.0% | -24.8% | -25.3% | -25.2% | -24.8% |

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

WAMC's proposed operating expenditure of $277.6 million for the 2021 determination period. Our draft decision is to accept Cardno's recommendation to set WAMC's efficient level of operating expenditure for the 4-year 2021 determination period at $208.8 million. This is $10.3 million (4.7%) lower than WAMC's actual operating expenditure over the 2016 determination period.

Overall, we have made draft decisions to reduce WAMC's proposed operating expenditure by $68.9 million (24.8%). This is around $4.5 million (2.2%) higher than the costs we used to set prices in 2016.

In its proposal, WAMC noted that its increased costs are due to:

- Increased scope and expectation of the quality of WAMC's services for compliance and enforcement, and water management planning, [xii] and
- The 2016 Determination not reflecting the full costs of delivering its customer management services. [xiii]

Other than the creation of NRAR for compliance management, Cardno found the increased scope is not supported for most of WAMC's other water management activities. Cardno noted that while WAMC quoted increased expectation of the quality of most WAMC monopoly services compared to the 2016 Determination, there was limited or no stakeholder engagement at an activity level that would help inform the service and cost trade-offs that WAMC is proposing for the 2021 determination period.[xiv]

Based on Cardno's findings from applying the three-step approach to assessing efficiency set out in Chapter 2, our recommended reductions in operating expenditure are comprised of:

- $61.6 million in scope adjustments
- $3.7 million in catch-up efficiency adjustments, based on a catch-up efficiency factor of 1.1% per annum
- $3.7 million in continuing efficiency adjustments, based on a continuing efficiency factor of 0.7% per annum

Our draft recommended adjustments to WAMC's proposed operating expenditure for the 2021 determination are summarised in Table 3.2 below.

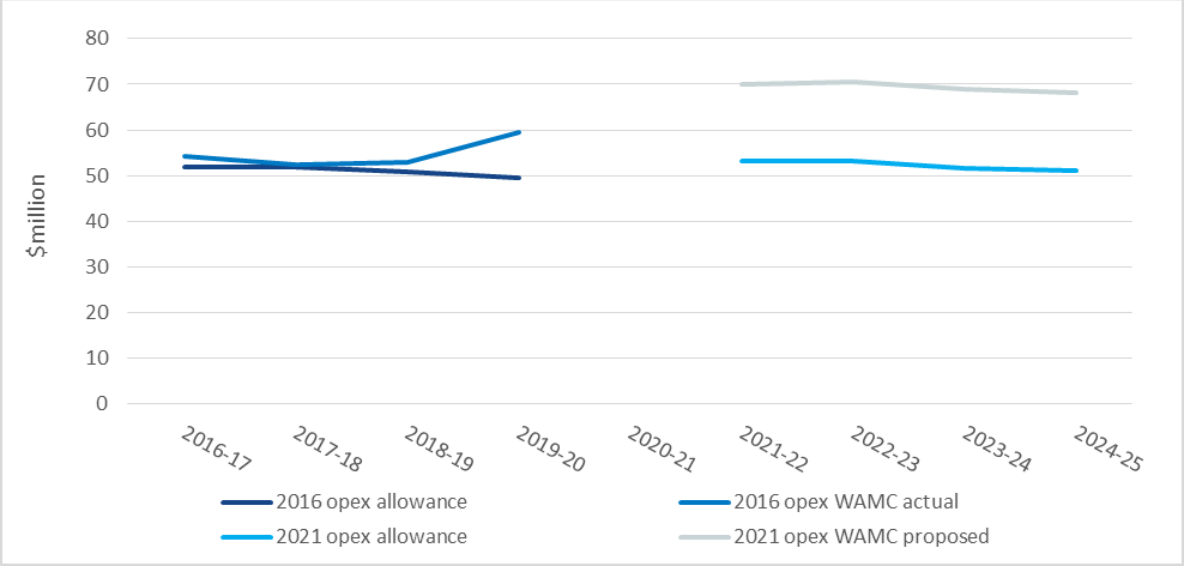
**Table 3.2 Efficient operating expenditure for the 2021 determination period ($millions, $2020-21)**

| | 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 | -1.3 | -1.3 | 0.0 | 0.0 | -2.6 |
| ▼ Customer management | -1.5 | -1.5 | -1.5 | -1.5 | -6.1 |
| ▼ 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 |
| ▼ Surface water modelling | -0.3 | -0.3 | -0.3 | -0.3 | -1.0 |
| ▼ Ground water modelling | -0.1 | -0.1 | -0.1 | -0.1 | -0.6 |
| ▼ 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 |
| ▼ Reallocation of Water NSW overheads to WAMC[a] | 0.3 | 0.4 | 0.4 | 1.0 | 2.1 |
| **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 |
| **Total efficient operating expenditure** | | | | | |
| Total | **53.1** | **53.1** | **51.5** | **51.0** | **208.8** |
| Difference | -16.8 | -17.5 | -17.4 | -17.2 | -68.9 |
| Difference (%) | -24.0% | -24.8% | -25.3% | -25.2% | -24.8% |

**a** This adjustment is based on Atkins' separate review of Water NSW's corporate operating expenditure.
**Note:** This does not include proposed expenditure for consent transactions, metering and MDBA and BRC.
**Source:** IPART calculations and Cardno, WAMC *Expenditure Review,* Final Report, March 2021, pp 59-61.

Figure 3.1 shows our decisions in comparison to WAMC's historical expenditure and proposed expenditure.

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




**Source:** IPART Calculations.

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

## 3.2 WAMC's operating expenditure over the 2016 determination period

Over the 2016 determination period, WAMC's total actual operating expenditure was $219.0 million. This represents an overspend relative to the allowance we used to set prices of $14.8 million (or 6.8%) (See Table 3.3).

**Table 3.3 WAMC's operating expenditure over 2016 determination period (millions, $2020-21)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | Total |
|---|---|---|---|---|---|
| IPART allowance | 52.0 | 51.8 | 50.9 | 49.5 | 204.2 |
| WAMC actual | 54.2 | 52.5 | 53.0 | 59.4 | 219.0 |
| Difference | 2.2 | 0.7 | 2.0 | 9.9 | 14.8 |
| Difference (%) | 4.1% | 1.3% | 3.8% | 16.6% | 6.8% |

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

In its review of WAMC's operating expenditure over the 2016 determination period, Cardno found there has been an increased scope and expectation of WAMC to improve the quality of its compliance management activities as demonstrated by the creation of NRAR.

Cardno also considers there is evidence to support Water NSW's claim that the 2016 Determination did not reflect the full costs of delivering some WAMC services, in particular for business customer service activities and consent transaction services. However since Water NSW did not adopt the activity code framework to accurately record and report its costs, this made it difficult for Cardno to confirm the amount that has been understated.[xv]

Cardno's review of WAMC's performance over the 2016 determination period found that WAMC achieved its output measures for most of its activities. However, there were two activities (i.e. Water plan performance assessment and development of water planning and regulatory framework), where outputs were not achieved.[xvi] DPIE explained these outputs were not achieved due to a reprioritisation of its efforts to deliver Basin Plan activities.

Our price review establishes a total operating allowance and it is up to the WAMC agencies to determine the efficient operation of its activities over the regulatory period taking into account factors that may change during the period and prioritise expenditure within the funding envelope provided accordingly. We do not conduct a post review of WAMC's operating expenditure. This means WAMC will need to bear the costs of any overspend over the 2016 determination period. 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.

We set a determination allowance based on efficient expenditure to promote an efficiency mindset in the agencies so that its business processes, systems and service provision are competitive against an open market. The difference between the allowance for operating expenditure in the 2016 determination period and the amount WAMC spent helps inform our decision on the efficient level of operating expenditure for the 2021 determination period. We have recommended efficiency adjustments in the future determination period to incentivise WAMC to move towards achieving the performance of a company operating at the frontier.

## 3.3 We have reduced compliance costs by 62%, however we consider these costs are required in the short term

NRAR has proposed compliance and enforcement costs of $63.0 million for the 4-year 2021 determination period. This is $40.4 million (178.8%) higher than the 2016 allowance and $5.2 million (9.1%) higher than its actual expenditure incurred during the 2016 determination period. The increased proposed and actual expenditure reflects a step change in resourcing of compliance management to address compliance and enforcement issues raised in the Matthews Report (see 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:** Matthews Review, *Independent investigation into NSW water management and compliance - Final Report*, November 2017, p 7.

While there is an increased scope and expectation for WAMC's monopoly services, Cardno recommended reducing the proposed costs of compliance by around $38.9 million (62.2%) for the 2021 determination period. Cardno's review recognised that in the short term NRAR's costs would be higher to address historical compliance issues and lack of universal metering. Given that NRAR is currently operating under an intensive phase of compliance and enforcement, it recommended NRAR seek funding from the government to recover these costs.[xvii]

Our draft decision is to accept Cardno's recommended reductions to WAMC's proposed compliance costs. We also 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. This approach ensures users only pay the efficient costs of compliance. Our approach would also safeguard NRAR from being underfunded if our recommendation is accepted by the NSW Government to provide additional funding to recover the higher costs of compliance.

We consider Cardno's recommendation 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). Cardno selected Victoria as the primary comparator because Victoria has the best information available, a developed metering program in place and a similar area for agriculture which is a key driver for water use.[xviii] We acknowledge there are limitations with benchmarking and we are receptive to new and better information available.

Cardno's review of NRAR's proposed expenditure and strategy for delivering compliance activity for the 2021 determination found NRAR's costs are reasonable in the short term. We also acknowledge that in addition to effective, efficient, transparent and accountable compliance, NRAR has a social objective of improving and maintaining public confidence in water regulation enforcement.[xix] This justifies the appropriateness of a higher number of on-the-ground compliance officers in its proposed program.

We have not reduced the total value of NRAR's proposed compliance expenditure (other than applying a catch-up efficiency. This is to acknowledge that in the short term, an intensive phase of compliance management and enforcement is required for NSW. By reducing WAMC's proposed compliance costs and excluding the balance of costs from the efficient costs that users pay, we ensure that users do not pay for past inefficiencies in compliance and enforcement. However, our recommendation also ensures NRAR obtains sufficient funding to perform is compliance and enforcement functions.

## 3.4 We consider regional water planning costs should be reprofiled

WAMC proposed regional water planning costs of $5.9 million per year (or $23.8 million for 4 years) for the 2021 determination period. Cardno recommended reprofiling its planning work for two years to allow sufficient time to consult with stakeholders on its state-wide planning initiatives and incorporate these findings into its future planning and achieve better overall outcomes.[xx]

We accept Cardno's recommendation to defer the costs for two years in order 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. That is, to reduce costs by $2.5 million over the 2021 determination period.

WAMC's proposed regional water planning activity involves implementing metropolitan and regional strategies as well as ongoing monitoring, review and update of the plans on a rolling cyclic basis.

Cardno acknowledges there is a need for DPIE to meet its water planning obligations. However, it considers DPIE did not demonstrate good practice resource planning and effort prioritisation in order for it to develop a state wide integrated planning framework to effectively meet these obligations. In particular, it found regional water planning could be improved by better integrating with local water utility planning, increasing stakeholder engagement on proposed costs and services to develop a more robust water planning framework.[xxi]

We recognise that accepting this recommendation may impact on the number of regional strategies that may be implemented and finalised during the 2021 determination period. However, we consider this approach incentivises WAMC to rebalance its efforts to ensure appropriate resource planning, effort prioritisation and stakeholder consultation is undertaken before significant costs are incurred. By deferring the costs allowed, we aim to incentivise DPIE to carefully structure its planning and fulfil its obligations at the lowest cost.

## 3.5 We consider customer management costs should increase but not to the extent requested by WAMC

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 proposed, $4.6 million per year is for Water NSW (89%) and $0.6 million per year is for NRAR (11%).

Our draft decision is to accept Cardno's recommendation to set the efficient level of expenditure using the prorated 2020-21 financial year outturn of costs for this activity. This results in a scope reduction of $6.1 million over the 2021 determination period. Our draft decision recognises that there may be some underfunding of WAMC's costs from the 2016 determination period. However, the efficient expenditure required to deliver this activity is not to the extent that is proposed by WAMC.

Cardno considers it reasonable that customer management costs are expected to be higher than allowed in the 2016 determination period. However, since Water NSW has not accurately allocated its costs to customer management and its other account and billing activities, the underlying assumptions forming its proposal for increased expenditure is likely to be unreliable.[xxii]

We agree with Cardno that it is difficult to quantify the level of efficient expenditure for customer management based on the available evidence and Water NSW's own continuity of costs incurred for this activity. We consider that we should maintain a conservative approach to proposed costs increases for customer management. Ultimately, we do not wish to underfund Water NSW for delivering this activity and as discussed in Chapter 7, 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.

Cardno considered NRAR's customer management costs are justified under the current operating environment, however they do not represent the costs of a steady state organisation in the medium to long term. Aligned with treatment of compliance management costs, Cardno recommends that users pay the efficient costs of NRAR's customer management costs based on the Deed of Transfer and the Government pay the remaining balance proposed by NRAR.[xxiii]

We agree with Cardno that NRAR's proposed costs are likely to be justified under the current circumstances. While we are not confident the Deed of Transfer represents the efficient costs of performing this activity by NRAR, we have little available evidence to quantify the required amount. We expect NRAR and Water NSW will be able to provide more reliable and robust forecasts in future expenditure reviews as it improves its business processes to better deliver WAMC's services.

## 3.6 Some proposed costs are not sufficiently justified by evidence

Cardno recommended $15.9 million in adjustments to WAMC's proposed operating expenditure for a number of activities. We agree with Cardno's recommendation. Cardno's recommended adjustments are based on its findings that for:

- **Water plan and performance assessment** – DPIE's work program for this activity is in line with its legislative requirement to review plans on a ten year cycle. WAMC's obligations are largely business-as-usual and are unchanged from the current determination period.[xxiv] Cardno recommended the expenditure for this activity should be set at the level consistent with the 2016 Determination allowance.

  We note that WAMC did not achieve its output measures and performance for this activity. DPIE explained it reprioritised its expenditure to conduct other Basin Plan activities. We consider it is appropriate for businesses to have the flexibility to reprioritise its expenditure within the total funding envelope as the operating environment changes.

- **Development of water planning and regulatory framework** – DPIE met its output measures and water management objectives with lower expenditure in the current period. WAMC's obligations for this activity are largely business-as-usual and are unchanged from the current determination period.[xxv] Cardno recommended the expenditure for this activity should be set at the actual level of expenditure for this activity in the 2016 determination period.

  We consider 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.

- **Surface water and groundwater modelling** – WAMC's obligations for this activity are largely business-as-usual and are unchanged from the current determination period. DPIE's increased costs are driven by demand for providing additional information from stakeholders. Cardno found DPIE's draft modelling strategy and work plan for the 2021 determination to address this demand were at a low level of maturity and did not substantiate the step change proposed.[xxvi]

  We consider that since DPIE's proposed costs are based on increased demand, it will need to better document the level of service provided and engage with stakeholders to determine the appropriate balance between proposed costs and level of service provided. It is up to WAMC to substantiate the additional services it is seeking to provide and demonstrate a level rigour for the proposed costs, the benefits and outcomes it will achieve through a well-developed strategy and work plan.

- **Intergovernmental activities -** Cardno has reviewed the additional information provided by DPIE and considers around 25% of the effort for intergovernmental activities falls outside the scope of WAMC monopoly services. We discuss this in Chapter 2. It also considers 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.[xxvii]

- **Drainage management –** Cardno found the government policy position on drainage management is unclear in the 2021 determination period and therefore all costs should be excluded.[xxviii]
- **Business governance and support –** Cardno found DPIE has included costs for W10-02 in error because it is no longer using this activity code as overhead costs have been allocated across all activities. Cardno recommended making an administrative adjustment and removing these costs to avoid duplication.[xxix]

## 3.7 We have reallocated some corporate costs to WAMC

We engaged Atkins' to separately review Water NSW's corporate costs. This included reviewing 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).

Atkins' separate review of Water NSW's corporate costs recommended:

- Scope adjustments which results in a net reduction of $0.02 million per year, and
- Increased allocation of $2.06 million of non-core expenditure to WAMC over the 2021 determination period.

In order to allocate the increased expenditure from Atkins' review, Cardno has relied on Water NSW's own allocation of costs to activity codes to achieve consistency with its costing approach. As the additional expenditure was subject to a separate review, we did not apply an efficiency adjustment to these costs to avoid double counting of efficiency.

For customer management (as discussed above) which is one of the activities which makes up WAMC's total corporate costs, Cardno recommended applying its more detailed scope adjustment for this activity. To avoid double counting, we have applied Cardno's scope adjustment which was reviewed on an activity basis rather than Atkins' more high level scope adjustments which relate to allocation of corporate operating expenditure across multiple business units.[xxx] We consider the difference in magnitude of the scope adjustments between the two reviews reasonable due to the differences in the review approach.

## 3.8 WAMC could make efficiency savings of $7.3 million

Consistent with our approach for capital expenditure, we have applied catch-up and continuing efficiency adjustments to WAMC's forecast operating expenditure. Cardno and Atkins' recommended $7.3 million in savings from catch-up and continuing efficiencies.

We have 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 to get a sense of the scale of efficiency which should be achievable for the 2021 determination. This is presented in Table 3.4 below.

**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 (draft)[a] | 2021 | 0.5% | 1.1% | 1.6% | 2.1% | 0.7% | 2.6% | Achievable |

[a] The 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,* Table 5-12, Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 62-64 and IPART Analysis

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

Catch-up reflects the efficiency needed to be achieved over time to catch up with a frontier company. Our draft decision is to accept Cardno's recommended catch-up efficiency savings of $3.7 million over the 2021 determination period. This includes:

- Two levels of catch-up efficiency on an activity basis for DPIE and NRAR
- One level of catch-up efficiency on a business process basis for Water NSW

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, March 2021, pp 62-64 and IPART calculations.

### DPIE and NRAR's catch-up efficiency

Cardno recommended catch-up efficiency adjustments of 0.9% and 1.4% per year to DPIE and NRAR's activities for the 2021 determination period. The overall impact of the catch-up efficiency adjustments is around 0.8%[6] per year for DPIE's operating expenditure.[xxxi] We consider this is a realisable efficiency when compared to efficiencies achieved by other water utilities.

We have not applied a catch-up efficiency adjustment for activities where we have 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 and NRAR over the 2021 determination period.

Our catch-up efficiency adjustment separates DPIE and NRAR activities into two tiers. Level 1 efficiency adjustments were applied to more mature activities and level 2 efficiency adjustments were applied to less mature activities. We consider this approach recognises that some of WAMC's activities are more developed and closer to the frontier than others. It also assists DPIE to identify which activities requires a greater level of effort to achieve efficiencies and provides appropriate incentives for activities with a level 2 catch-up efficiency to better manage its activities for the future period.

Cardno has identified two areas where DPIE and NRAR could make material improvements to its processes for all of its activities and move towards the efficiency frontier over time including:

- **Improvements to resource planning –** Cardno considered that for many activities there was poor quantification of the desired outputs and the timing of these outputs. It also noted there is limited risk analysis performed to determine how it would optimise its resources to determine the efficient level of resource mix. It considers DPIE could better estimate its resources based on existing resource supply rather than the demand for services.
- **Improvements in effort prioritisation –** Cardno considered many of DPIE's activities have outputs that are subjective. DPIE is seeking to increase the quality of its outputs to meet customer expectations and better achieve the policy obligations. However, it has not identified how it would prioritise its efforts to achieve this. Cardno considers DPIE should improve its stakeholder consultation to appropriately balance the cost required to perform its activities and the level of service required.[xxxii]

### Water NSW's catch-up efficiency

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

[6] This includes activities for which no catch-up efficiency adjustments were applied.

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 which has already been incorporated in its costs. Our catch-up efficiency adjustment applies to Water NSW's corporate operating costs and is based on Atkins' separate review of Water NSW's corporate costs.

Atkins' has identified four 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 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.[xxxiii]

### 3.8.2 WAMC could make ongoing continuing efficiency savings of $3.7 million

Our draft decision is to apply continuing efficiency adjustments of 0.7% per year[7], totalling $3.7 million in efficiency savings over the 2021 determination period (See Table 3.6).

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 input. 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.

7 The value of the continuing efficiency adjustment is derived from the compound long-run average of the Australian Bureau Statistics (ABS) multi-factor productivity (MFP) in the Australian economy.

**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 |

## 3.9 WAMC will continue reporting its output measures annually

Our draft decision is:

5 IPART's draft decision is for WAMC to report annually against the output measures and in accordance with the framework listed in Appendix D. This output measures report 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 output measures are discussed in Appendix D. They relate to a range of activities including surface water and groundwater quantity and quality monitoring, floodplain management plan development and compliance, customer and billing management. These measures are intended to:

- Ensure WAMC is held accountable 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, in order to improve its performance.

We are exploring various options for validating the information WAMC provides in response to these output measure, including an internal or external audit for assurance purposes. We welcome stakeholder feedback on ways to validate WAMC's output measures.

# 4 Capital expenditure

## Summary of our draft decisions for capital expenditure

**WAMC's efficient capital expenditure over the 2016 determination period is higher than the level of capital expenditure reflected in current prices**

When we set the allowance in 2016, WAMC did not propose to include any capital expenditure for its corporate systems. WAMC has incurred corporate capital expenditure over the 2016 determination to deliver WAMC's functions and has proposed to include this expenditure in the RAB.

Based on our review, we consider it is efficient to include an additional $19.9 million of corporate capital expenditure in WAMC's RAB. This increase in the RAB means that prices will be higher going forward.

**The capital expenditure allowance for the 2021 determination period is higher than the 2016 allowance but is less than WAMC proposed**

Our draft decision is to set WAMC's efficient level of capital expenditure for the 2021 determination period at $34.3 million. We recognise that this is significantly ($19.3 million or 129.1%) higher compared with the forecast levels of expenditures we used to set prices in 2016. The main driver of the increased capital expenditure for the 2021 determination period is for increased investment in WAMC's corporate systems.

We consider the efficient capital expenditure is $7.8 million or 18.5% less than WAMC proposed. We have excluded these costs from the capital expenditure allowance for the 2021 determination period. Our recommended reductions for the forecast capital expenditure are comprised of:

- $5.3 million in scope adjustments
- $1.9 million in catch-up efficiency adjustments, and
- $0.6 million in continuing efficiency adjustments.

Our adjustments recognises the efficiency challenges proposed by the WAMC agencies and also identifies how WAMC can achieve our recommended efficiency savings.

This chapter sets out our assessment of WAMC's efficient level of capital expenditure. We have reviewed the efficiency of its actual capital expenditure over the current determination period[8] 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 RAB. We have 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 draft decisions on the efficient capital expenditure.

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

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

## 4.1 WAMC's efficient capital expenditure over the 2016 determination period is higher than the 2016 allowance

Our draft decision is:

6 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 Efficient capital expenditure over the 2016 determination period ($millions, $2020-21)**

| | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|---|
| WAMC's actual | 2.4 | 4.8 | 5.0 | 6.9 | 9.8 | 15.8 |
| Draft decision | 1.3 | 1.3 | 2.7 | 5.3 | 9.8 | 15.8 |
| *Difference* | -1.1 | -3.5 | -2.3 | -1.6 | 0.0 | 0.0 |
| *Difference (%)* | -46.8% | -72.9% | -45.2% | -23.5% | 0.0% | 0.0% |

**Note:** Our review of WAMC's current determination capital expenditure includes the last year of the previous determination (i.e. 2015-16), the 2016 determination period (i.e. 2016-2020) and the year of the deferral (i.e. 2020-21).
**Source:** Cardno, WAMC *Expenditure Review - Final Report for IPART*, March 2021 and IPART calculations.

8 Our review of WAMC's current determination capital expenditure includes the last year of the previous determination (i.e 2015-16), the 2016 determination period (i.e 2016-2020) and the year of the deferral (i.e 2020-21).

Our draft decision is to set WAMC's efficient capital expenditure over the current determination period at $36.1 million.[9] This is $8.5 million (19.1%) lower than WAMC's actual capital expenditure over the period and $19.9 million higher than our 2016 allowance.

Overall, WAMC overspent on its capital expenditure by $28.4 million (174.8%).[10] Cardno noted that it is likely that the 2016 allowance was lower than the expenditure required to deliver WAMC's functions as the allowance did not include corporate capital expenditure. We consider it is appropriate for WAMC to recover its capital expenditure for office accommodation and ICT systems.[xxxiv]

Cardno, in arriving at its recommended efficient level of capital expenditure over the current determination period considered Water NSW's water monitoring program was efficient and supports WAMC's required water monitoring functions. However, it found Water NSW did not justify some of its corporate capital costs or appropriately allocate its expenditure.

Cardno made a few adjustments including:

- $1.1 million reduction due to DPIE's error in recording costs of decommissioning groundwater bores in WAMC's 2015-16 RAB.[xxxv]
- $7.4 million reduction to reprofile some of Water NSW's corporate capital costs over the 2016 determination period. This is because Cardno considers Water NSW required time to build its understanding of WAMC's business, procure replacement ICT systems and invest in office accommodation. Since Cardno considers Water NSW's corporate capital costs were efficient, it has also recommended the reduced balance of WAMC's reprofiled capital expenditure be allocated to the RAB of Water NSW's other business segments (i.e. Greater Sydney, Rural Valleys and the Broken Hill Pipeline).[xxxvi] This is to ensure Water NSW is not unfairly disadvantaged by the reallocation of its corporate capital costs.

Our draft recommended adjustments to WAMC's capital expenditure over the 2015-2021 period are summarised in Table 4.2 below.

**Table 4.2 Efficient capital expenditure for the 2015 to 2021 period ($millions, $2020-21)**

| | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|---|
| 2016 allowance | 1.3 | 1.3 | 4.4 | 4.2 | 5.1 | NA |
| WAMC's actual | 2.4 | 4.8 | 5.0 | 6.9 | 9.8 | 15.8 |
| **Specific adjustments** | | | | | | |
| ▼ Cardno – Reprofile corporate capital cost | -1.1 | -3.5 | -2.3 | -1.6 | 0.0 | 0.0 |
| **Total efficient capex** | | | | | | |
| Total | 1.3 | 1.3 | 2.7 | 5.3 | 9.8 | 15.8 |
| Difference | 1.1 | 3.5 | 2.3 | 1.6 | 0.0 | 0.0 |
| Difference (%) | -46.8% | -72.9% | -45.2% | -23.5% | 0.0% | 0.0% |

**Source:** IPART Calculations.

9 Our review of WAMC's current determination capital expenditure includes the last year of the previous determination (i.e 2015-16), the 2016 determination period (i.e 2016-2020) and the year of the deferral (i.e 2020-21).

10 This includes Water NSW's actual spend of $15.8 million in the year of the deferral.

## 4.2 The capital expenditure allowance for the 2021 determination period is higher than the 2016 allowance but is less than WAMC proposed

Our draft decision is:

7 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 4.3.

**Table 4.3 IPART's draft decision on efficient capital expenditure over 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 |
| Draft decision | 9.0 | 9.2 | 8.5 | 7.6 | 34.3 |
| Difference | -1.0 | -1.3 | -4.1 | -1.4 | -7.8 |
| Difference (%) | -10.0% | -12.3% | -32.6% | -15.4% | -18.5% |

**Note:** This does not include proposed expenditure for consent transactions, metering and MDBA and BRC.
**Source**: Cardno, WAMC *Expenditure Review - Final Report for IPART*, March 2021 and IPART calculations.

WAMC proposed capital expenditure of $42.1 million for the 2021 determination period. Our draft decision is to accept Atkins/Cardno's recommendation to set WAMC's efficient level of capital expenditure for the 4-year 2021 determination period at $34.3 million. Overall, we made a $7.8 million (18.5%) expenditure reduction to WAMC's proposed capital expenditure for the 2021 determination period. This is $19.3 million (129.1%) higher than the capital expenditure we used to set prices in 2016.

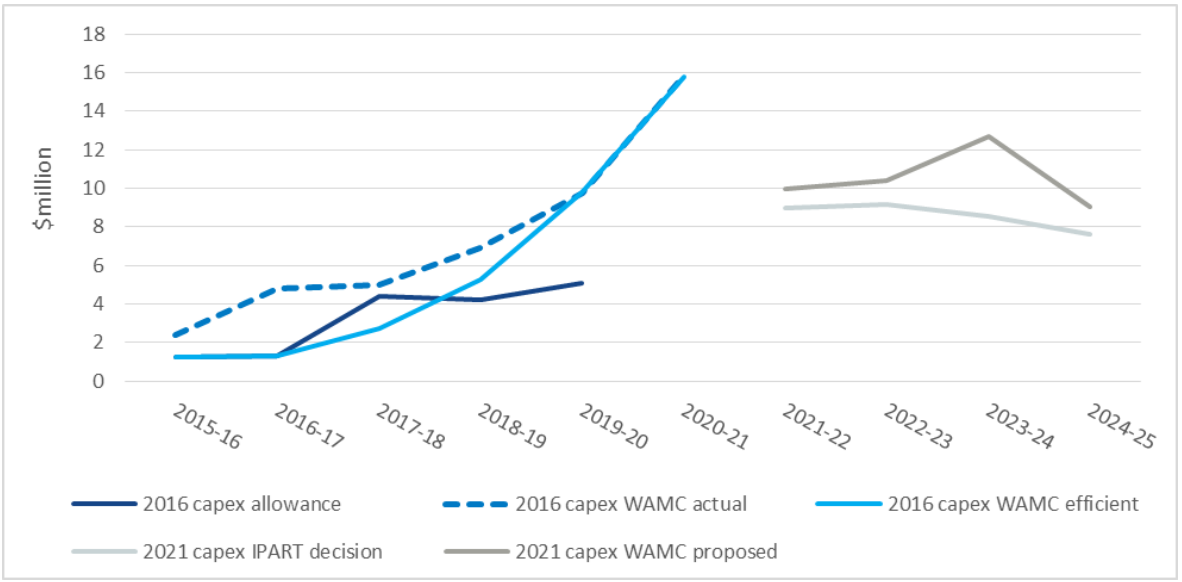
As discussed above, the main driver of the increased expenditure for the 2021 determination period is the inclusion of corporate capital expenditure. We consider it is appropriate for WAMC to recover its corporate capital expenditure for office accommodation and ICT systems used to deliver its WAMC functions.

Based on our consultants' findings from applying the three-step approach to assessing efficiency set out in Chapter 2, our recommended reductions for the forecast capital expenditure are comprised of:

- $5.3 million in scope adjustments, which applies to some of WAMC's corporate capital expenditure
- $1.9 million in catch-up efficiency adjustments, based on a catch-up efficiency factor of 1.1% per annum
- $0.6 million in continuing efficiency adjustments, based on a continuing efficiency factor of 0.7% per annum.

Figure 4.1 shows our decisions in comparison to WAMC's past and proposed capital expenditure.

**Figure 4.1 Our decision and WAMC's past and proposed capital expenditure**




**Source:** IPART calculations.

The sections below outline our findings in relation to WAMC's proposed capital expenditure.

### 4.2.1 Some corporate capital expenditure has not been appropriately allocated to WAMC

In its separate review of Water NSW's corporate expenditure (See Box 4.1), Atkins recommended reducing Water NSW's corporate capital expenditure by $5.3 million (excluding efficiency adjustments) over the 2021 determination period. Of this adjustment:

- $3.0 million is a reallocation of its corporate capital expenditure to its other business units for ICT projects and its Integrated Business Systems project, and
- $2.4 million is a reduction for vehicle procurement expenditure to align with the trend for acquiring medium term vehicles.[xxxvii]

Cardno considered and agrees Atkins' recommendations for WAMC. Cardno did not make any separate recommendations to WAMC's corporate capital expenditure to avoid double counting of cost savings.

Based on Atkins' recommendation, we note that an ex-post adjustment to the RAB may be required at the next Broken Hill pipeline and Water NSW Greater Sydney price reviews.

Our draft recommended adjustments to WAMC's capital expenditure for the 2021 determination period are summarised in Table 4.4 below.

**Table 4.4 Efficient capital expenditure for the 2021 determination period ($millions, 2020-21)**

| | 2020-21 | 2021-22 | 2022-23 | 2023-24 | Total |
|---|---|---|---|---|---|
| WAMC's proposal | 9.9 | 10.4 | 12.7 | 9.0 | 42.1 |
| **Specific adjustments** | | | | | |
| Atkins' scope adjustments | -0.7 | -0.7 | -3.3 | -0.5 | -5.3 |
| **Efficiency adjustments** | | | | | |
| Catch-up efficiency | -0.2 | -0.4 | -0.6 | -0.6 | -1.9 |
| Continuing efficiency | -0.1 | -0.1 | -0.2 | -0.2 | -0.6 |
| **Total efficient capex** | | | | | |
| Total | 9.0 | 9.2 | 8.5 | 7.6 | 34.3 |
| Difference ($) | -1.0 | -1.3 | -4.1 | -1.4 | -7.8 |
| Difference (%) | -10.0% | -12.3% | -32.6% | -15.4% | -18.5% |

**Source:** Atkins, Water NSW *Expenditure Review – Final Report for IPART,* February 2021 and IPART calculations.

**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 (CAM), to allocate its corporate capital expenditure using TOTEX instead of using the proportional value of direct salaries in each business segment.
- We engaged separately Atkins to review Water NSW's current capitalisation method as a whole for all its business segments.
- Atkins found the principles of Water NSW's CAM valid, however it considers the high level of indirect cost allocation results in inefficiency. By using TOTEX to allocate overhead and corporate costs to regulated business, Water NSW does not demonstrate any direct links between cost drivers and the level of corporate expenditure. Since costs are not directly mapped to activities and the services provided to the relevant regulated business and geographical area, this results in a loss of accuracy, granularity and less confidence in its costs for the business, the regulator and its customers.
- Based on Atkins' review of Water NSW's cost allocation, Atkins has recommended adjustments to WAMC's corporate capital expenditure. We discuss this in more detail in the sections above.

**Source:** Atkins, Water NSW *Expenditure Review – Final Report for IPART*, p 186-190.

## 4.3 WAMC could make $2.5 million in efficiency savings

Consistent with our approach for operating expenditure, we have applied catch-up and continuing efficiency adjustments to WAMC's forecast capital expenditure. Cardno and Atkins recommended $2.5 million (5.9%) in savings from catch-up and continuing efficiencies.

The total efficiency savings applied to WAMC is comparable against efficiencies applied to other water utilities at a similar stage of efficiency maturity. This is presented in Table 4.5 below. We consider the efficiency applied to WAMC is comparable to that of Sydney Water in 2016.

**Table 4.5 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 (draft) | 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, p3, 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 $1.9 million

Catch-up reflects the efficiency needed to be achieved over time to catch up with a frontier company. Our draft decision is to accept Atkins' recommended catch-up efficiency savings of $1.9 million over the 2021 determination period.

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 which has already been incorporated in its costs. Our catch-up efficiency adjustment applies to Water NSW's corporate capital costs and is based on Atkins' judgement and review of Water NSW's capital processes and analysis of a sample of its representative capital program as a whole.[xxxviii]

Atkins has identified four key areas where Water NSW could make material improvements to its processes and move towards the efficiency frontier over time including:

- 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.[xxxix]

Atkins' total combined capital efficiency challenge for Water NSW is set out in Table 4.6 below.

**Table 4.6 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** | **-0.6** | **-0.6** | **-1.9** |

**Source:** Atkins, Water NSW *Expenditure Review – Final Report for IPART*, February 2021, p 137.

### 4.3.2 WAMC could make ongoing continuing efficiency savings of $0.6 million

Our draft decision is to apply continuing efficiency adjustments of 0.7% per year[11], totalling $0.6 million in efficiency savings over the 2021 determination period (See Table 4.7).[xl]

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 input. 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.

**Table 4.7 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 |

11 The value of the continuing efficiency adjustment is derived from the compound long-run average of the Australian Bureau Statistics (ABS) multi-factor productivity (MFP) in the Australian economy.

# 5 MDBA and BRC costs

## Summary of our draft 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 MDBA and BRC costs for WAMC are higher than DPIE's proposal (51.5% and 13.7% respectively).
- This occurs mainly because we have not accepted 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, based on the impactor pays principle. Regulated and unregulated river users in the Murray Darling Basin are the impactors for this scheme, and so its costs should be allocated to them (via the WAMC determination).

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

- We have moved to using this approach as we consider it is more efficient and equitable than recovering expenditure in the year it occurs (i.e. our current approach).
- In particular, capital expenditure would be recovered over the useful life of the assets it creates.

WAMC contributes on behalf of the NSW Government to two inter-jurisdictional water management organisations – the Murray-Darling Basin Authority (MDBA) and the Dumaresq-Barwon Border Rivers Commission (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 have taken its recommendations into account, as well as stakeholder submissions, in our draft decisions.

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

Our draft decisions are:

8 The efficient level of WAMC's MDBA costs for the 2021 determination period is $34.6 million (Table 5.1).

9 The efficient level of WAMC's BRC costs for the 2021 determination period is $3.5 million (Table 5.2).

DPIE proposed MDBA costs of $22.8 million being allocated to WAMC for the determination period. Our draft decision is to allow MDBA costs of $34.6 million. Although this is 51.5% higher than DPIE's proposal, it is lower than the 2016 allowance and actuals (by 11.2% and 20.5%, respectively) – see Figure 5.1.

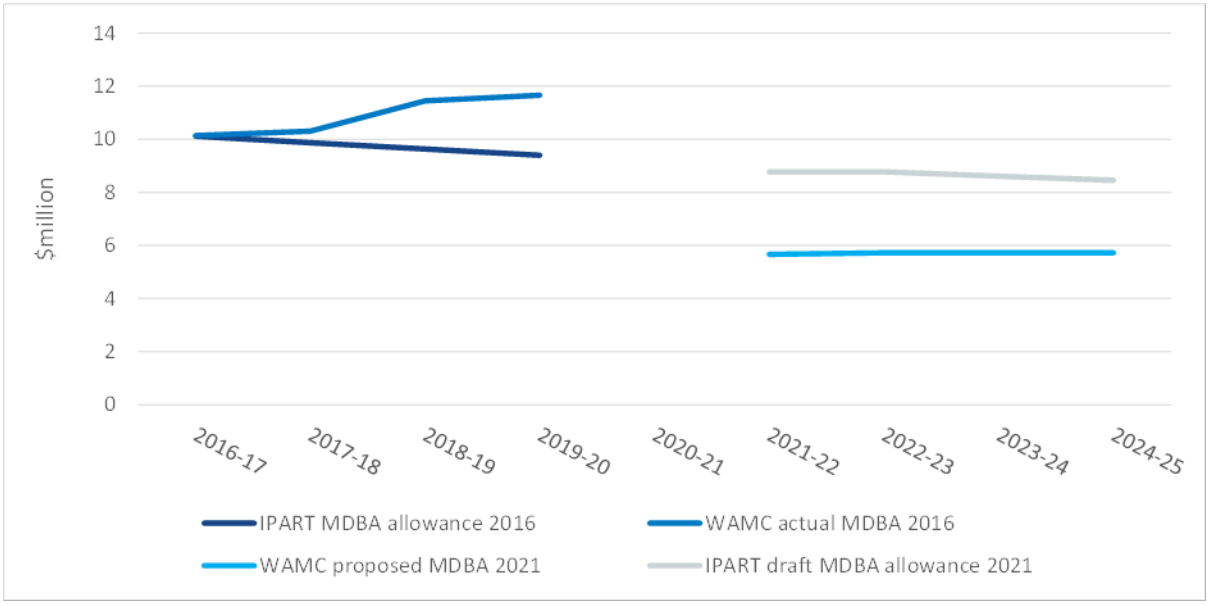
It is mainly driven by our reallocation of Salt Interception Scheme costs of $13.1 million from the Water NSW rural bulk water determination to the WAMC determination, as discussed in section 5.4.

**Table 5.1 Draft 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's proposal | 5.7 | 5.7 | 5.7 | 5.7 | 22.8 |
| Draft decision | 8.8 | 8.8 | 8.6 | 8.5 | 34.6 |
| *Difference* | 3.1 | 3.0 | 2.9 | 2.7 | 11.8 |
| *Difference (%)* | *54.8%* | *53.2%* | *50.4%* | *47.6%* | *51.5%* |

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

**Figure 5.1 Our draft decision and WAMC's past and proposed MDBA contributions ($millions, $2020-21)**




**Data source:** IPART calculations.

DPIE also proposed BRC costs of $3.0 million being allocated to WAMC for the determination period. Our draft decision is to allow BRC costs of $3.5 million. Our allowance is higher than DPIE's proposal since we have rebalanced the BRC's corporate costs between the WAMC and Water NSW rural bulk water determinations.

**Table 5.2 Draft decision on efficient BRC costs for the 2021 determination period ($millions, $2020-21)**

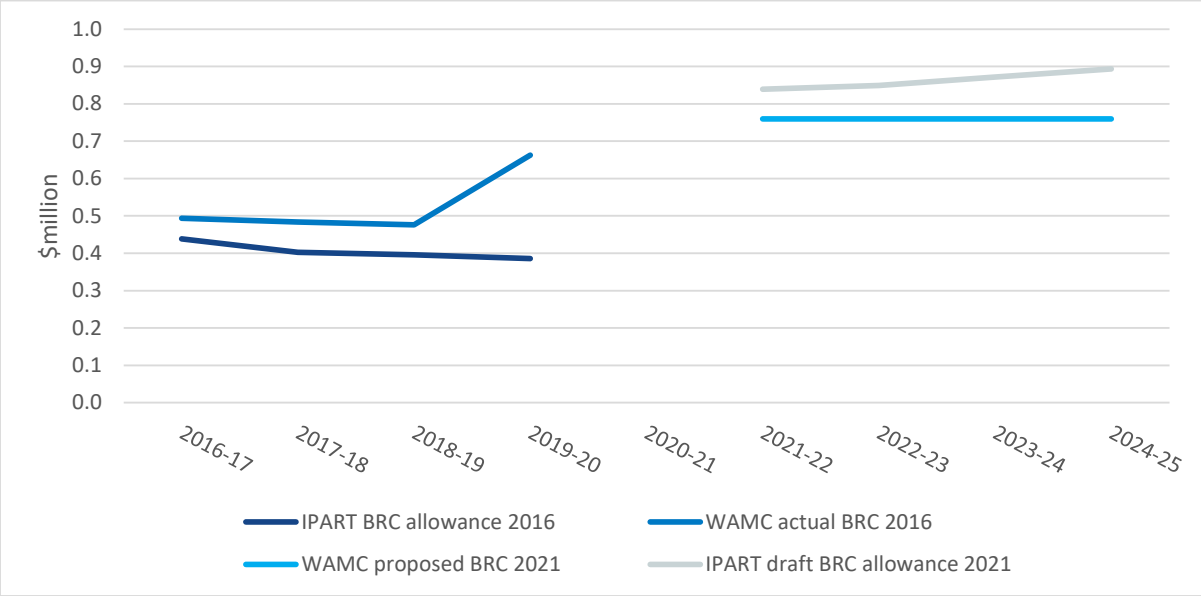
| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| WAMC's proposal | 0.8 | 0.8 | 0.8 | 0.8 | 3.0 |

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| Draft decision | 0.8 | 0.8 | 0.9 | 0.9 | 3.5 |
| *Difference* | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 |
| *Difference (%)* | *10.5%* | *11.8%* | *14.7%* | *17.6%* | *13.7%* |

**Note:** WAMC proposal only operating expenditure. IPART's draft decision 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.

DPIE's proposal, and our draft decision, represent a step change in BRC costs compared to the 2016 determination period – see Figure 5.2.

**Figure 5.2 Our draft decision and WAMC's past and proposed BRC contributions ($millions, $2020-21)**




**Data source:** IPART calculations.

## 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.

### 5.2.1 MDBA costs would increase by 8.1% overall

DPIE proposed total MDBA contributions of $126.8 million,[xli] 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 results from DPIE assigning MDBA's non-river management costs to WAMC and river management costs to Water NSW rural bulk water.[xlii]
- 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

In relation to the total BRC contributions, DPIE proposed contributions of $7.2 million[xliii] (compared with $5.8 million for the previous 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. The split is based on historical natural resource management and river operations costs.[xliv]
- For the 2021 determination period, DPIE proposed revising this split (42.2% to WAMC and 57.8% to Water NSW rural bulk water), reflecting the BRC's forward work plan.

### 5.2.3 Stakeholders were concerned about the efficiency of these proposed cost increases

Several stakeholders were concerned about the magnitude of the proposed MDBA and BRC contributions.[xlv] They strongly supported improving DPIE's incentive to actively engage in negotiating these contributions, so that only efficient costs are passed onto water customers.[xlvi]

In particular, some stakeholders considered that there should be greater transparency and efficiency requirements on MDBA contributions. They questioned the justification of MDBA charges and urged IPART to scrutinise these costs.[xlvii]

As outlined below, we have examined the efficiency of these costs. We also have 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.

## 5.3 We have made efficiency adjustments to total MDBA and BRC costs

We have made draft decisions to allow:

- Total MDBA costs of $117.6 million for the 2021 determination period. This is $9.3 million (7.3%) lower than proposed by DPIE 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 proposed by DPIE for the WAMC and Water NSW price reviews.

### 5.3.1 Total MDBA costs would decrease 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.[xlviii]

In its pricing proposal, DPIE highlighted that the MDBA had subsequently implemented several independent review and transparency measures.[xlix] 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 have accepted Atkins' recommended adjustments. These involve:

- **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.[l]
- **Catch-up efficiency adjustments** of 1.1% per year cumulative, totalling $3.4 million in efficiency savings over the 2021 determination period.[li]
- **Continuing efficiency adjustments** of 0.7% per year cumulative, totalling $2.2 million in efficiency savings over the 2021 determination period.[lii]

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

### 5.3.2 Total BRC costs would decrease by 2.5%

Atkins' recommended several adjustments, which we have 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). It appeared that BRC's costs were going down. However, this was due to problems with its accruals accounting and late invoicing by Water NSW. This adjustment means actual costs including accruals are being used as the basis for budgeting.
  - An Annuity Fund Contribution adjustment (-$0.3 million). We have 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.[liii]
- **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.[liv]
- **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.[lv]

### 5.3.3 Improving the efficiency of the MDBA and BRC's operations

Atkins identified several improvements the MDBA and BRC could make to their processes, which would bring them closer to how an efficient agency operates (see 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 benefits realisation process from definition to tracking.
- **Incentives**: Ensure efficiency is a key metric for MDBA management. In relation to the BRC, ensure its 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 prioritisation of investments, the justification framework, remained weak.[lvi]

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

## 5.4 We have 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 involves the MDBA's Salt Interception Scheme (SIS).[12]

12 The SIS is a MDBA program that aims to intercept high-salinity groundwater prior to it reaching river systems. Bores are constructed that capture the groundwater, which is pumped to evaporation beds. The bores are located in the Murray valley.

### 5.4.1 Shifting the MDBA's SIS costs from Water NSW to WAMC better aligns with the impactor pays principle

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)[lvii] 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.[lviii]

Salinity is contributed to by both regulated and unregulated river users across the entire Murray Darling Basin. Therefore, under the impactor pays principle, it is not appropriate for the regulated river licence holders alone to bear 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 (see Box 5.2).

**Box 5.2 Allocating the costs of managing salinity**

In allocating the MDBA costs of the SIS, we recommend applying the impactor pays principle.

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

1. Land clearing generally, including for agriculture. De-vegetation removes natural root systems which access the ground water, 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 this activity should *not* be allocated to water licence holders, as 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 the salts, and can increase groundwater flow rates and salt loads into rivers. In this case, salinity costs caused by irrigation should be allocated primarily to licence holders, as the use of water is the primary driver of salinity and hence costs.

After consulting with DPIE it confirmed that irrigation itself is by far the dominant driver of salinity in the Murray Darling Basin. However, it confirmed that groundwater licence holders are unlikely to contribute to the problem and as such we have ring fenced them from these costs.

Table 5.3 sets out our allocation of MDBA contributions between the WAMC and Water NSW rural bulk water determinations as a result of shifting the SIS costs.

**Table 5.3 Allocation of MDBA contributions**

| | DPIE's proposed allocation | IPART's draft allocation |
|---|---|---|
| WAMC determination | 18.0% | 33.2% |
| Water NSW rural bulk water determination | 82.0% | 66.8% |

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

### 5.4.2 Our scope adjustments to the BRC's expenditure led to a different allocation of costs

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.[lix]

As set out in section 5.3, we have made an adjustment of -$1.2 million to the proposed expenditure on water infrastructure services. We have also increased resource management costs by +$0.2 million. These two adjustments have shifted the allocation of costs between WAMC and Water NSW rural bulk water as shown in Table 5.4 below.

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

Our draft decision is:

10 To use the building block approach to set efficient MDBA and BRC costs.

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

- firstly, reduced these costs to an efficient level, and
- secondly, allocated them between the WAMC and Water NSW rural bulk water determinations based on the impactor pays principle.

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.[13]

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

In previous WAMC and Water NSW determinations, we (and the ACCC in 2014)[14] have included all efficient MDBA and BRC expenditure in prices in the year that expenditure occurs.

The amounts have typically been based on forecasts of NSW's annual contributions to the MDBA and BRC respectively.[lx] We have usually applied efficiency adjustments to these forecasts to ensure that 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.

As payments have been 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.

### 5.5.1 Capital expenditure should be recovered over its useful life

Under our previous approach to including MDBA and BRC costs in prices, there was no recognition of capital expenditure and how and when that 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 ensure that 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 regulatory asset base (RAB), and we include allowances for depreciation and return on assets for the value of that RAB.

This approach ensures that 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).[15]

### 5.5.2 Efficient capital and operating expenditure for MDBA costs

Our draft decision is:

11 To set WAMC's operating and capital expenditure for MDBA costs as shown in Table 5.5.

14 In 2014, the ACCC included MDBA and BRC costs as per a government direction to the then State Water Corporation.

15 The WACC is set out in Chapter 6.

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

It reflects our view that 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 (and not to WAMC's water management services).[lxi]

**Table 5.5 Draft decision on WAMC's efficient MDBA expenditure ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| Operating expenditure | 8.7 | 8.7 | 8.5 | 8.4 | 34.3 |
| Capital expenditure | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total MDBA costs** | **8.7** | **8.7** | **8.5** | **8.4** | **34.3** |

**Note:** Includes both the user share and government share of efficient costs. Only the user share of costs is included when setting prices. Our draft 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 Efficient capital and operating expenditure for BRC costs

Our draft decision is:

12 To set WAMC's operating and capital expenditure for BRC costs as shown in Table 5.6.

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

**Table 5.6 Draft decision on WAMC's efficient BRC expenditure ($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. Includes both the user share and government share of efficient costs. Only the user share of costs is included when setting prices. Our draft 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 the 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 QLD.
- 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.[lxii]

Our draft decision is to accept 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, it means prices needed to recover those costs are also spread over future years.

However, we note that 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) would build and grow as a result.

### 5.5.4 We have set the opening MDBA and BRC RABs to zero

Our draft decision is:

13 To set WAMC's opening RAB for MDBA and BRC costs at July 1, 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[16] 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 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.

We have in the past 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.[lxiii]

As we are, for the first time, moving to treating MDBA and BRC capital expenditure differently from operating expenditure, this will change from 2021-22. This means that all efficient MDBA and BRC capital expenditure will enter the RAB from 2021-22 onwards.[17]

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

**Table 5.7 WAMC's MDBA and BRC RAB values at July 1 2021 ($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.

16 Capital contributions include grants and other contributions which 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 as there is no further costs incurred on a utility.

17 We note that we are setting Water NSW's bulk water prices in MDB 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.

### 5.5.5 The total building block costs for MDBA and BRC expenditure

As set out in Chapter 2, the notional revenue requirement 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 draft decisions.

**Table 5.8 WAMC's NRR for MDBA and BRC costs over the 2021 determination period – draft decisions ($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** | **9.3** | **38.1** |

**Source:** IPART calculations.

### 5.5.6 Better clarity and quality of data will enhance transparency

We consider our draft decisions deliver efficiency benefits to WAMC and water users. The creation of a RAB and the recovery of capital costs over the useful life of assets means that, over time, MDBA and BRC-related prices better reflect the efficient costs and timing of expenditure. Water users benefit from the equitable sharing of asset costs through time, and greater clarity on the types of expenditure being undertaken by the MDBA and BRC.

We also consider 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. Where 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 their undertaking unfeasible. However, where 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.

# 6 Other building block costs and notional revenue requirement

**Summary of our draft decisions for other costs**

**The total notional revenue requirement is $278.3 million**

- This is $68 million (or 19.6%) less than WAMC's proposal.
- The difference is mainly due to us reducing WAMC's proposed operating expenditure to an efficient level (see Chapter 3).

To set prices, we first determine the efficient costs that WAMC should incur to efficiently deliver its services. The notional revenue requirement represents our view of the total efficient costs of providing WAMC's monopoly services in each year of the determination period.

## 6.1 The draft notional revenue requirement is $278.3 million over four years

Our draft decision is:

14 To set the notional revenue requirement of $278.3 million as shown in Table 6.1.

The total NRR is $278.3 million over four years, as set out in Table 6.1. This is $68 million (or 19.6%) less than WAMC's proposal over the four years of the 2021 determination period.

**Table 6.1 Draft NRR and comparison to WAMC's proposal ($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's draft decision** | | | | | |
| Operating allowance | 53.1 | 53.1 | 51.5 | 51.0 | 208.8 |
| Return on assets | 1.1 | 1.3 | 1.4 | 1.4 | 5.2 |
| Regulatory depreciation | 4.1 | 5.0 | 5.8 | 6.6 | 21.6 |
| Tax allowance | 0.8 | 0.8 | 0.8 | 0.8 | 3.2 |
| Working capital allowance | 0.3 | 0.3 | 0.4 | 0.4 | 1.4 |
| **WAMC NRR** | **59.5** | **60.5** | **59.9** | **60.3** | **240.2** |
| MDBA NRR | 8.8 | 8.8 | 8.6 | 8.5 | 34.6 |
| BRC NRR | 0.8 | 0.8 | 0.9 | 0.9 | 3.5 |
| **Total NRR** | **69.1** | **70.1** | **69.4** | **69.7** | **278.3** |
| *Difference ($)* | *−16.0* | *−17.1* | *−17.0* | *−17.9* | *−68.0* |
| *Difference (%)* | *−18.8%* | *−19.6%* | *−19.7%* | *−20.4%* | *−19.6%* |

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

As outlined in Chapter 2, we use a building block approach to calculate WAMC's notional revenue requirement. We have already outlined its operating allowance in Chapter 3. Further, we have outlined the notional revenue requirement for MDBA and BRC costs in Chapter 5.

We present our draft decisions on the other building blocks in the table above. That is, WAMC's return on assets, regulatory depreciation, tax allowance and working capital allowance. Further information on these draft decisions is set out below.

### 6.1.1 WAMC's return on assets is $5.3 million

Our draft decision is:

15 To calculate the return on assets using:

- An opening RAB of $41.8 million for 2021-22, and the RAB for each year as shown in Table 6.3.
- Our standard WACC methodology which produces a real post-tax WACC of 2.8% as outlined in Appendix C.
- To apply a true-up of annual WACC adjustments in the next Determination.

We calculate the return on assets by multiplying the value of the RAB over the determination period by an efficient rate of return. As for previous reviews, we have determined the rate of return using an estimate of the WACC.

Our draft decisions have resulted in a lower return on assets than WAMC had proposed (see Table 6.2). This follows from our draft decision that resulted in a lower RAB (see Table 6.3), but mainly from us using a lower WACC.

**Table 6.2 Draft decision on return on assets and comparison to WAMC's proposal ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| WAMC's proposal | 1.5 | 1.7 | 1.8 | 1.9 | 6.9 |
| IPART's draft decision | 1.1 | 1.3 | 1.4 | 1.5 | 5.3 |
| *Difference ($)* | *−0.4* | *−0.4* | *−0.4* | *−0.4* | *−1.6* |
| *Difference (%)* | *−25.4%* | *−22.7%* | *−22.4%* | *−22.1%* | *−23.0%* |

**Source:** IPART calculations.

#### Value of the RAB

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. We have calculated the value of the RAB for each year of the 2021 determination period. Our RAB roll-forward calculations for the 2021 determination period are shown in Tables 6.3 and 6.4 below.

**Table 6.3 Draft decision on RAB roll-forward for 2015-16 and the 2016 determination period, compared to WAMC's proposal ($millions, $nominal)**

| | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|---|---|---|---|---|---|---|
| **Opening RAB** | 5.3 | 6.2 | 7.1 | 9.1 | 13.4 | 22.0 |
| *Plus:* Efficient capital expenditure | 1.2 | 1.3 | 2.7 | 5.3 | 9.8 | 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 | 0.1 | 0.2 | 0.2 | 0.4 | 0.7 |
| **Closing RAB** | **6.2** | **7.1** | **9.1** | **13.4** | **22.0** | **37.1** |
| WAMC's proposal | 7.2 | 11.1 | 15.2 | 21.1 | 28.6 | 44.0 |
| *Difference ($)* | *−1.0* | *−4.0* | *−6.1* | *−7.7* | *−6.6* | *−6.9* |
| *Difference (%)* | *−13.9%* | *−36.3%* | *−40.3%* | *−36.6%* | *−23.0%* | *−15.6%* |

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

**Table 6.4 Draft decision on RAB roll-forward for the 2021 determination period and comparison to WAMC's proposal ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **Opening RAB** | 37.1 | 41.8 | 45.8 | 48.4 |
| *Plus:* Efficient capital expenditure | 9.0 | 9.2 | 8.5 | 7.6 |
| *Less:* Asset disposals | 0.1 | 0.1 | 0.1 | 0.1 |
| *Less:* Regulatory depreciation | 4.2 | 5.1 | 5.9 | 6.7 |
| **Closing RAB** | **41.8** | **45.8** | **48.4** | **49.2** |
| WAMC's proposal | 47.7 | 50.8 | 54.9 | 54.2 |
| *Difference ($)* | *−5.8* | *−4.9* | *−6.5* | *−5.0* |
| *Difference (%)* | *−12.3%* | *−9.7%* | *−11.9%* | *−9.2%* |

**Source:** IPART calculations.

In its pricing proposal, Water NSW proposed using three RABs:

- A corporate RAB – which includes the costs of corporate capital programs (e.g. IT, motor vehicles)
- A water monitoring RAB – which includes the costs of water monitoring assets
- A legacy RAB – which refers to the allocation of the existing RAB in the WAMC determination, before the functions were transferred to Water NSW, as the determination of Water NSW's share of the legacy RAB.[lxiv]

At this stage, Water NSW was unable to provide us with sufficient information about how to accurately allocate these three RABs across water sources. Therefore, we have continued our existing approach of using a single RAB.

### WACC

Our draft decision is to use a real post-tax WACC of 2.8%, compared to WAMC's proposed WACC of 3.2%.[lxv] Appendix C sets out the parameters that we used to calculate our WACC.

In our 2018 WACC review, we introduced a true-up to the cost of debt to account for movements in debt costs during the regulatory period. This true-up reflects that movements in interest rates would gradually flow through to customer prices in competitive markets.

One consequence is that the WACC changes every year, as new tranches of debt are introduced to the trailing averages and the oldest tranches drop out. We considered two options to adjust price to account for annual WACC changes:

1. Store the present value of the revenue adjustments caused by the changing WACC and apply a true-up at the next regulatory period.
2. Annual real price changes to reflect the changing WACC. Our decision is to use an end of period true-up approach.

Our draft decision is to use an end of period true-up approach. This is consistent with our decision in IPART's 2020 review of prices for Sydney Water.[lxvi]

## 6.1.2 WAMC's regulatory depreciation is $21.6 million

Our draft decision is:

16 To calculate the regulatory depreciation using:

- The asset lives set out in Table 6.5 for depreciating WAMC's RAB.
- The straight-line depreciation method.

Regulatory depreciation aims to recover the cost of an asset over its useful life to ensure that customers that benefit from the asset, pay for it. To calculate the regulatory depreciation, we typically divide the value of assets by their expected lives. For simplicity, we have done this at an aggregated level.

We have calculated WAMC's regulatory depreciation by using Cardno's recommended asset lives. These are consistent with the asset lives proposed by WAMC (see Table 6.5).[lxvii]

**Table 6.5 Draft decision on asset lives for depreciating WAMC's RAB**

| 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.

### 6.1.3 WAMC's tax allowance is $1.5 million

Our draft decision is:

17 To calculate the tax allowance 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 (see Table 6.6).

Our tax allowance is not intended to recover WAMC's actual tax liability over the determination period. Rather, it reflects the liability that a comparable commercial business would be subject to. Including this allowance is consistent with our aim to set prices that reflect the fully efficient costs a utility would incur if it were operating in a competitive market (including if it were privately owned). It is also consistent with the principle of competitive neutrality, that is, that a government business should compete with private business on an equal footing and not have a competitive advantage due to its public ownership.

**Table 6.6 Draft decision on tax allowance and comparison to WAMC's proposal ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| WAMC's proposal | 0.3 | 0.5 | 0.8 | 1.1 | 2.8 |
| IPART's draft decision | 0.3 | 0.4 | 0.4 | 0.4 | 1.5 |
| *Difference ($)* | *0.0* | *−0.2* | *−0.5* | *−0.7* | *−1.3* |
| *Difference (%)* | *17.9%* | *−34.1%* | *−54.1%* | *−62.3%* | *−46.5%* |

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

We applied our standard methodology to set the tax allowance. We calculate the tax allowance for each year by applying the relevant tax rate, adjusted for the value of imputation credits (the 'gamma'), to the business's (nominal) taxable income. For this purpose, taxable income is the NRR (excluding tax allowance) less operating cost allowances, tax depreciation, and interest expenses.

### 6.1.4 WAMC's working capital allowance is $3.5 million

Our draft decision is:

18 To calculate the working capital allowance 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 (i.e. when bills are paid). To calculate this allowance, we applied our standard approach. In summary, this involves:

1. Calculating the net amount of working capital the business requires, using the formula:

working capital = receivables – payables + inventory + prepayments

2. Calculating the return on this amount by multiplying it by the nominal post-tax WACC.

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.

Table 6.7 below provides a comparison of our draft decision with WAMC's proposal. The reduction in working capital is driven by a lower WACC than that proposed by WAMC.

**Table 6.7 Draft decision on working capital allowance and comparison to WAMC's proposal ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| WAMC's proposal | 0.5 | 0.5 | 0.6 | 0.6 | 2.2 |
| IPART's draft decision | 0.9 | 0.9 | 0.9 | 0.9 | 3.5 |
| *Difference ($)* | *0.4* | *0.3* | *0.3* | *0.3* | *1.3* |
| *Difference (%)* | *71.3%* | *60.2%* | *56.3%* | *48.5%* | *58.5%* |

**Note:** The working capital allowance in this table is different from the one in table 6.1. That is because this table also includes the working capital from the MDBA and BRC notional revenue requirements. Totals may not add due to rounding.
**Source:** IPART calculations.

# 7 Costs shares and cost drivers

## Summary of our draft decisions for cost shares and cost drivers

**We are generally maintaining the cost shares set by our 2019 review**

- Cost shares continue to be based on the impactor pays principle. This remains an appropriate way to split costs between water users and the NSW Government.
- As a result, the user share of WAMC's efficient costs is $218.3 million, or 78.4% of the notional revenue requirement, over the 2021 determination period.
- Our draft decision is consistent with cost shares proposed by DPIE and NRAR, except for W06-05 regional planning and management strategies, where we have decreased the user share from 70% to 60%.
- We are not explicitly changing the cost share for W08-03 compliance management, as 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 pay them.

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

- This means the cost driver for several WAMC activities will change from water take to water entitlement. We consider this cost driver is more cost-reflective, less volatile and simpler to administer.
- We did not accept WAMC's change to the cost driver for W06-05 regional planning and management strategies. WAMC did not provide sufficient evidence that this change would result in more cost-reflective prices compared with the existing driver.
- Our draft decisions result in a relatively small shift of the user share of the notional revenue requirement from groundwater to regulated and unregulated rivers.

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) based on the impactor pays principle.

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 draft decisions on WAMC's cost shares and cost drivers.

## 7.1 We are generally maintaining the cost shares set by our 2019 review and proposed by WAMC

Our draft decision is:

19 To generally maintain the cost shares set by our 2019 cost shares review. They are based on the impactor pays principle and align with WAMC's proposal (Table 7.2).

- The exception is for W06-05 regional planning and management strategies. The user share will decrease from 70% to 60%.
- This means the user share of WAMC's efficient costs is $218.3 million, or 78.4% of the notional revenue requirement, over the 2021 determination period (Table 7.1).

**Table 7.1 Draft decision on user share of notional revenue requirement ($millions, $2020-21)**

| | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|
| Operating allowance | 41.6 | 41.6 | 40.8 | 40.5 | 164.5 |
| Return on assets | 0.9 | 1.0 | 1.1 | 1.2 | 4.2 |
| Regulatory depreciation | 3.0 | 3.8 | 4.5 | 5.1 | 16.4 |
| Tax allowance | 0.2 | 0.3 | 0.3 | 0.3 | 1.1 |
| Working capital allowance | 0.8 | 0.8 | 0.8 | 0.8 | 3.1 |
| **User share of WAMC NRR** | **46.5** | **47.4** | **47.5** | **47.9** | **189.3** |
| MDBA NRR | 6.5 | 6.5 | 6.4 | 6.3 | 25.7 |
| BRC NRR | 0.8 | 0.8 | 0.8 | 0.9 | 3.3 |
| **User share of total NRR** | **53.8** | **54.7** | **54.7** | **55.1** | **218.3** |
| *% of the total NRR* | *77.8%* | *78.1%* | *78.8%* | *79.0%* | *78.4%* |

**Source:** IPART calculations.

We comprehensively reviewed our rural water cost shares framework in 2019. In particular, we examined each of WAMC's 33 activities in order 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.[lxviii]

DPIE and NRAR proposed cost shares consistent with this review.[lxix] Water NSW's pricing proposal did not directly address this point.[lxx]

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 share for W06-05 regional planning and management strategies from 70% to 60%. Cardno also developed recommendations about user shares for W08-03 compliance management costs and Water NSW's W-codes.[lxxi]

We have made a draft decision to accept Cardno's recommendations. Therefore, we are generally maintaining the cost shares set by our 2019 review. In addition, we are:

- **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, Government policy changes mean WAMC is undertaking more high-level, strategic planning. As a result, the user share will decrease from 70% to 60%.
- **Making efficiency adjustments to W08-03 compliance management costs, rather than changing the user share**. Cardno identified efficiency concerns with compliance management costs.[lxxii] Instead of explicitly changing the cost share for this activity, we addressed these concerns through reducing NRAR's costs to an efficient level. That said, we recognise NRAR needs to incur additional costs in the short term (and the NSW Government, rather than water users, should pay them). This has the effect of implicitly reducing 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 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 draft decisions are discussed in further detail below.

### 7.1.1 We continue to share costs based on the impactor pays principle

Our 2019 review re-iterated our position to allocate the efficient costs of WAMC's services using the impactor pays principle (see Box 7.1). Under this approach, costs are allocated between water user and the NSW Government on the basis of whichever party created the need for an activity (and its associated costs) to be incurred.

**Box 7.1 What is the impactor pays principle?**

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 (the impactor) should pay in the first instance.
2. If that is not possible, the party that benefits (the beneficiary) should pay. Further, it is preferable for direct beneficiaries to pay, but if that is not possible then indirect beneficiaries should pay. In some instances, the impactor and the beneficiary are the same.
3. In cases where it is not feasible to charge either impactors or beneficiaries (for example, because of social welfare policy, public goods, externalities, or an administrative or legislative impracticality of charging), the 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. One stakeholder supported the existing cost shares ratios as fair and reasonable. However, several irrigator groups disagreed with the overarching premise of using the impactor pays principles to determine cost shares, instead favouring the beneficiary pays principle. Further, they thought customer shares should be reconsidered given the magnitude of the proposed expenditure increases by WAMC.[lxxiii]

We acknowledge some stakeholders' views around using a beneficiary pays approach. However, we have made a draft decision to continue sharing costs based on the impactor pays principle. We consider it is more efficient than the beneficiary pays approach, because it results in water users facing the full costs of WAMC's monopoly services. In addition, it is a more practical and transparent method for allocating costs and is consistent with the funding hierarchy that we have previously used for other services.

Other stakeholders objected to particular aspects of the cost shares, suggesting that.

- The user share of costs should be lower due to concerns about costs. For example, it should be zero for expenditure caused by WAMC's organisational restructuring.[lxxiv] 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.[lxxv]
- The NSW Government share of costs should be higher due to activities having multiple objectives (e.g. environmental policies, planning) or to maintain NRAR's independence.[lxxvi]

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 impactor had changed from our 2019 review. Where it had not, we have addressed these concerns through other steps in our price determination process (rather than changing the cost shares).

- Firstly, 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 the cost shares – based on the impactor pays principle – to these efficient costs to determine the notional level of costs to be recovered from water users.
- Secondly, through setting prices to recover costs from water users. We considered what portion of the water users' share of efficient costs they could afford to pay over this determination period, and set a glide path to reflect this (see Chapter 10).

### Some stakeholders suggested that climate change should be considered an impactor

The NSW Irrigators' Council submission to our Issues Paper suggested that our impactor pays framework needed to be reconsidered because it could not adequately accommodate the impacts of climate change. Its submission 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.[lxxvii]

We consider there is adequate flexibility within our current cost shares framework to consider and account for the impacts of climate change, as set out in Box 7.2.

**Box 7.2 Climate change under our impactor pays framework**

Our counterfactual starting point, which we use to anchor our application of the impactor pays principle, is a world without high consumptive use of 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 impactor pays 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.

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 to 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.[lxxviii]

We intend 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. Therefore we consider water users are the primary impactor for these costs.
- Our approach is consistent with our application of the impactor pays principle to costs relating to changing environmental standards and community expectations. 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.
- Water users should face efficient price signals, which include costs associated with climate change, to encourage efficient decisions going forward.[18]

We note that 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 application of the impactor pays principle and setting user and government cost share ratios in future determination periods.

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

The scope of this activity had changed, and therefore the user share should decrease from 70% to 60%. This is consistent with what Cardno recommended.[lxxix] 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, 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.[lxxx]

18 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, p 159).

### 7.1.3 We have 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 have 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 share costs based on the impactor pays principle, and efficiency concerns are dealt with separately as part of the expenditure review process. We note that 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 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.[19] In effect, we are implicitly reducing the user share for this activity on a temporary basis.

### 7.1.4 We have 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).

This 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).[lxxxi]

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.[lxxxii] We agree with this recommendation, and are investigating potentially embedding this as a requirement in Water NSW's reporting manual for its Operating Licence.

19 We note that one of NRAR's principle objectives is to maintain public confidence in the enforcement of natural resources management legislation (Section 10(b) *Natural Resources Access Regulator Act 2017*).

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 seven individual water monitoring activity codes within W01 and W02, with user shares varying from 40% to 100%, into a single service area. As outlined above, Cardno considered this aggregation was problematic, since 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.[lxxxiii] We have accepted 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%[20].
  - 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. As such, the impact of increasing the corporate capital expenditure user share from 80% to 94% was not justified without having confidence in the allocation.[lxxxiv] Consistent with Cardno's recommendation, we are retaining the W10-02 activity code for corporate capital expenditure and applying the existing 80% user share to it.

### 7.1.5 Our draft decisions on cost shares result in 78.4% of WAMC's efficient costs being allocated to water users

As a result of our cost share decisions, 78.4% of the total notional revenue requirement is being allocated to water users, compared with 72.3% in the 2016 review. This 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.

Table 7.2 outlines our draft 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.

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

**Table 7.2 WAMC's cost drivers for operating and capital expenditure**

| Activity | *2016 price review* | 2019 cost share review | WAMC pricing proposal | IPART draft 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 |
| **Ground water 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 | 80 |
| 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 |
| 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 |

| Activity | *2016 price review* | 2019 cost share review | WAMC pricing proposal | IPART draft decision |
|---|---|---|---|---|
| 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 | 80 | 80 |
| W10-03 Billing management | *100* | 100 | 100 | 100 |

**Note:** As outlined in section 7.1.4, 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 had to apply a user share of 77% to Water NSW's aggregated W01 costs. WAMC did not propose allocating any costs to W08-99.

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

Our draft decision is:

20 To largely accept WAMC's proposed cost drivers to allocate the user share of WAMC's costs across water sources (Table 7.5).

- The exception is for W06-05 regional planning and management strategies. The cost driver will continue to be Water entitlement held by utilities and industry.
- This results in the user share of WAMC's efficient costs being allocated across water sources as listed in Table 7.4.

DPIE and 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 and NRAR's proposal, except for the cost driver for W06-05 regional planning and management strategies. It considered DPIE and NRAR had not provided sufficient evidence to justify this change. We note the agencies did not object to Cardno's recommendations in their submissions to its Draft Expenditure Report.

We have made a draft decision to accept Cardno's recommendations and change the cost drivers for 11 of the 12 activities proposed by DPIE and NRAR.

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

In their pricing proposal, DPIE and NRAR stated cost drivers should generally be changed only where the existing driver no longer reflects the source of an activity's costs.[lxxxv] We agree with this reasoning, and have therefore focused on those cost drivers stakeholders raised concerns about.

Table 7.3 sets out DPIE and NRAR's proposed new cost drivers, and indicates our draft decision to either accept them or retain the existing cost driver.

**Table 7.3 DPIE and NRAR's proposed changes to WAMC cost drivers**

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

**Source:** Cardno, *WAMC Expenditure Review - Final Report for IPART*, March 2021, pp 28-30.

### 7.2.2 We are moving to using volume of entitlement 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 entitlement was a key cost driver. However, we decided on balance that water take was likely to be the best available allocator of WAMC's costs at the time.[lxxxvi]

Since then, WAMC has undertaken further analysis which indicates volume of entitlements is actually more cost reflective than the existing driver (or alternative options). Further, it is more constant over multiple time periods and less skewed by external shocks, such as drought.[lxxxvii]

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

Our draft 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 to water take. Further, it was preferable to use this cost driver to allocate WAMC's modelling costs – rather than number of models, the existing cost driver – since it better reflects the scale and potential complexity of modelling required in different valleys (while remaining relatively simple to administer).[lxxxviii]

### 7.2.3 We are also using the number of licences as a cost driver for W08-3 compliance management and W10-01 customer management

DPIE and NRAR proposed to allocate costs for W08-03 compliance management and W10-01 customer management by number of licences. They considered this to be 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 (i.e. the existing cost driver – compliance risk).[21]

In response to our Issues Paper, some stakeholders wanted to retain using a cost driver calibrated to compliance risk. Southern Riverina Irrigators considered compliance costs should be allocated to regions with known compliance issues.[lxxxix] 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.[xc]

We have made a draft decision to accept DPIE and NRAR's proposal and use number of licences as a cost driver. This is 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 (see Chapter 3). As noted by Cardno, the cost driver should then reflect this type of organisation's compliance effort being more evenly directed across water users.[xci]

21 DPIE and NRAR note that 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).

### 7.2.4 We consider W06-05 regional planning and management strategies costs should be allocated using the existing cost driver

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

DPIE and NRAR are now proposing to allocate these costs by using number of licences as the cost driver. It considers the focus on this activity will broaden to the whole of NSW. Therefore, number of licences best reflects the state-wide coverage of regional water strategies.

Cardno found the change in cost driver would impact regulated users more than unregulated users. Their share of costs would increase from 9.4% using the existing cost driver to 32.1% under the proposed cost driver.[xciii] It considered DPIE and NRAR had not provided 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.

We note DPIE and NRAR did not object to Cardno's recommendation in their submissions to its Draft Expenditure Report. We have therefore accepted Cardno's recommendation and made a draft decision maintain water entitlements as the cost driver.

### 7.2.5 Our draft decision on cost drivers results in a small change in the allocation of costs from our previous determination

Table 7.4 compares the user share of notional revenue requirement (in percentage and $2020-21) under this draft decision (for the 2021 Determination) to the user share of notional revenue requirement under the 2016 Determination.

It shows there has been a small shift in costs from groundwater to regulated and unregulated rivers. For example, 45.2% of the user share of the notional revenue requirement is allocated to regulated rivers under our draft decision, compared with 43.7% in 2016.

**Table 7.4 Allocation of user share of total NRR across water sources – 2021 Draft Determination compared to 2016 Determination ($million, $2020-21)**

| Water source | Allocation of user share of total NRR (2016-17 to 2019-20) | | Allocation of user share of total NRR (2021-22 to 2024-25) | |
|---|---|---|---|---|
| **Regulated rivers** | | | | |
| Border | 3.7 | 2.0% | 5.1 | 2.3% |
| Gwydir | 5.7 | 3.1% | 5.5 | 2.5% |
| Namoi | 4.4 | 2.4% | 3.9 | 1.8% |
| Peel | 1.0 | 0.5% | 0.9 | 0.4% |
| Lachlan | 6.5 | 3.5% | 8.1 | 3.7% |
| Macquarie | 7.2 | 3.9% | 8.9 | 4.1% |
| Murray | 23.1 | 12.6% | 33.3 | 15.2% |
| Murrumbidgee | 23.6 | 12.9% | 27.1 | 12.4% |
| North Coast | 0.2 | 0.1% | 0.6 | 0.3% |
| Hunter | 4.4 | 2.4% | 4.9 | 2.2% |
| South Coast | 0.3 | 0.2% | 0.6 | 0.3% |
| **Total regulated rivers** | **80.1** | **43.7%** | **98.7** | **45.2%** |
| **Unregulated rivers** | | | | |
| North West | 5.5 | 3.0% | 6.6 | 3.0% |
| Central West | 5.7 | 3.1% | 6.7 | 3.1% |
| Far West | 5.7 | 3.1% | 6.4 | 2.9% |
| Murray | 1.3 | 0.7% | 1.9 | 0.9% |
| Murrumbidgee | 3.6 | 2.0% | 4.2 | 1.9% |
| North Coast | 10.3 | 5.6% | 14.0 | 6.4% |
| Hunter | 7.3 | 4.0% | 9.9 | 4.6% |
| South Coast | 18.5 | 10.1% | 20.0 | 9.1% |
| **Total unregulated rivers** | **58.0** | **31.6%** | **69.7** | **31.9%** |
| **Groundwater** | | | | |
| Inland | 36.5 | 19.9% | 35.4 | 16.2% |
| Coastal | 8.8 | 4.8% | 14.4 | 6.6% |
| **Total groundwater** | **45.3** | **24.7%** | **49.8** | **22.8%** |
| **Total NRR** | **183.4** | **100.0%** | **218.3** | **100.0%** |

**Source:** IPART calculations.

Table 7.5 outlines our draft 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 made a draft decision to not change these existing cost drivers.

**Table 7.5 WAMC's cost drivers for operating and capital expenditure**

| Activity | Water type | 2016 review | WAMC pricing proposal | IPART draft 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 |

| Activity | Water type | 2016 review | WAMC pricing proposal | IPART draft decision |
|---|---|---|---|---|
| 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 |
| **Ground water 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 entitlement (surface water only) | Volume of entitlement (surface water only) |
| W04-02 Groundwater modelling | G | Groundwater models | Volume of entitlement (ground water only) | Volume of entitlement (ground water only) |
| W04-03 Water resource accounting | R/U/G | Total water take | Volume of entitlements | Volume of entitlements |
| **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 | Volume of entitlements |
| **Water management planning** | | | | |
| W06-01 Water plan development (coastal) | R/U/G | Total water take | Volume of entitlements (weighted to only include coastal sources) | Volume of entitlements (weighted to only include coastal sources) |
| 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 |

| Activity | Water type | 2016 review | WAMC pricing proposal | IPART draft decision |
|---|---|---|---|---|
| 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 | Water entitlement held by utilities and industry | Number of licences | No change |
| W06-06 Development of water planning and regulatory framework | R/U/G | Total water take | Volume of entitlements | Volume of entitlements |
| 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) | Volume of entitlements (double the weighting of allocation on activities in inland water pricing sources) |
| **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 | |
| W10-03 Billing management | R/U/G | Number of bills issued per year | No change | No change |

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

**Source** WAMC (DPIE / NRAR) pricing proposal to IPART, Detailed Paper D, June 2020; 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.

### 7.2.6 Allocation of user share of MDBA notional revenue requirement 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 seven activity codes. We consider Atkins' recommended allocation to these activity codes is appropriate. We have further allocated these costs to water sources using the cost drivers outlined in Table 7.6.

Table 7.6 sets out the outcome of our draft decisions on the user share of the MDBA notional revenue requirement and allocation to water sources. It indicates this represents a substantial proportion of the user share of notional revenue requirement used to calculate prices. For example, it represents around 20% to 35% of the total notional revenue requirement for the Gwydir, Namoi, Murray and Murrumbidgee regulated rivers.

**Table 7.6 Allocation of user share of the MDBA's NRR across water sources for the 2021 determination period ($million, $2020-21)**

| ater source | Allocation of user share of MDBA NRR | | Allocation of user share of total NRR | User share of MDBA NRR (as % of user share of total NRR |
|---|---|---|---|---|
| **Regulated rivers** | | | | |
| Border | 0.7 | 2.8% | 5.1 | 14.2% |
| Gwydir | 1.9 | 7.5% | 5.5 | 34.6% |
| Namoi | 1.1 | 4.2% | 3.9 | 28.0% |
| Peel | 0.1 | 0.2% | 0.9 | 6.2% |
| Lachlan | 1.1 | 4.4% | 8.1 | 14.0% |
| Macquarie | 1.5 | 5.8% | 8.9 | 16.8% |
| Murray | 7.3 | 28.6% | 33.3 | 22.1% |
| Murrumbidgee | 8.8 | 34.2% | 27.1 | 32.4% |
| North Coast | 0.0 | 0.0% | 0.6 | 0.0% |
| Hunter | 0.0 | 0.0% | 4.9 | 0.0% |
| South Coast | 0.0 | 0.0% | 0.6 | 0.0% |
| **Total regulated rivers** | **22.5** | **87.7%** | **98.7** | **22.8%** |
| **Unregulated rivers** | | | | |
| North West | 0.2 | 0.9% | 6.6 | 3.6% |
| Central West | 0.3 | 1.1% | 6.7 | 4.0% |
| Far West | 1.0 | 3.7% | 6.4 | 14.8% |
| Murray | 0.1 | 0.2% | 1.9 | 2.9% |
| Murrumbidgee | 0.1 | 0.3% | 4.2 | 2.1% |
| North Coast | 0.0 | 0.0% | 14.0 | 0.0% |
| Hunter | 0.0 | 0.0% | 9.9 | 0.0% |
| South Coast | 0.0 | 0.0% | 20.0 | 0.0% |
| **Total unregulated rivers** | **1.6** | **6.2%** | **69.7** | **2.3%** |
| **Groundwater** | | | | |
| Inland | 1.5 | 6.0% | 35.4 | 4.4% |
| Coastal | 0.0 | 0.0% | 14.4 | 0.0% |
| **Total groundwater** | **1.5** | **6.0%** | **49.8** | **3.1%** |
| **Total NRR** | **25.7** | **100.0%** | **218.3** | **11.8%** |

**Source:** IPART calculations.

# 8 Water entitlement and water take forecasts

## Summary of our draft decisions for water entitlement and water take forecasts

**For regulated rivers, we have accepted WAMC's forecasts**

- The entitlements are based on 2018-19 actuals.
- The water take volumes are based on the 20-year historical average of water take.
- The floodplain harvesting volumes are based on WAMC's latest flood models.

**For unregulated rivers and groundwater sources, we have largely accepted WAMC's forecasts but have excluded the impact of the metering reform at this stage**

- The entitlements and water take volumes for unregulated rivers and groundwater sources are based on WAMC's approach of using the limited historical data available.
- The floodplain harvesting volumes for unregulated rivers are based on WAMC's latest flood models.
- We will consider the overall implications of the metering reform as a package in the Final Report.

**Demand volatility adjustment mechanism (DVAM)**

- We are not proposing to make any adjustments to revenues over the 2021 determination period.
- We are not establishing a DVAM for WAMC.

Once we establish the user share of efficient costs in each water source and decide what proportions of these costs to recover through fixed (entitlement) and variable (water take) charges, we utilise water entitlement and water take forecasts to calculate maximum prices. If the entitlement and water take forecasts we use 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 have used to calculate maximum prices in this review. The chapter is organised as follows:

1. Regulated rivers
2. Unregulated rivers
3. Groundwater sources
4. Demand volatility mechanism

## 8.1 Regulated rivers

Our draft decision is:

21 To accept WAMC's proposed 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

WAMC proposed to have constant volumes over the 2021 determination based on actual entitlements in the 2018-19 period (see Table 8.1). This is because entitlement volumes are generally stable. [xciv] Further, this approach is consistent with the approach used in the 2016 price review.

**Table 8.1 Regulated river entitlement forecasts for 2021 Determination (ML)**

| Water source | Forecast entitlements |
|---|---|
| Border | 265,334 |
| Gwydir | 535,601 |
| Namoi | 264,329 |
| Peel | 46,826 |
| Lachlan | 686,431 |
| Macquarie | 671,271 |
| Murray | 2,337,493 |
| Murrumbidgee | 2,698,407 |
| North Coast | 9,261 |
| Hunter | 206,219 |
| South Coast | 14,869 |
| **Total** | **7,736,040** |

**Source:** WAMC (DPIE / NRAR) pricing proposal to IPART, June 2020, p 55. WAMC (Water NSW) pricing proposal to IPART, June 2020, p 111.

Overall, entitlement volumes have remained fairly stable – around 7.7 million to 7.8 million ML per year since 2011-12.[22] [xcv] Therefore, we made a draft decision to accept WAMC's proposal to set entitlements over the 2021 determination based on actual entitlements in 2018-19.

22 In the 2016 price review, we presented the historical entitlements for regulated water sources since 2011, which averaged around 7.7 million over 2011-2014 period.

### 8.1.2 Water take forecasts

WAMC forecasts water take to be around 4.2 million ML per year over the 2021 determination period (see Table 8.2). WAMC used historical data to forecast water take.[xcvi] Forecasts are mostly based on the historical 20-year average of historical water take for each water source, except for:

- The North Coast and South Coast regulated water sources, where only 15 years of water take data are available. This approach is consistent with the approach undertaken in the 2016 price review.[xcvii]
- Lowbidgee supplementary water take (part of the Murrumbidgee regulated water source), which has been calculated separately using a shorter averaging period.

**Table 8.2 Regulated river water take forecasts for 2021 Determination (ML)**

| Water source | Forecast water take |
|---|---|
| Border | 147,948 |
| Gwydir | 239,365 |
| Namoi | 149,925 |
| Peel | 12,686 |
| Lachlan | 191,214 |
| Macquarie | 249,042 |
| Far West | - |
| Murray | 1,419,325 |
| Murrumbidgee[a] | 1,629,683 |
| North Coast | 574 |
| Hunter | 121,447 |
| South Coast | 3,946 |
| **Total** | **4,165,155** |

**a** This includes Lowbidgee supplementary water take forecasts.

**Note:** Water take is forecast to be same for each year of the 2016 determination period.

**Source:** WAMC (DPIE / NRAR) pricing proposal to IPART, June 2020, pp 58-59. WAMC (Water NSW) pricing proposal to IPART, June 2020, p 110.

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

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

**We have attempted to better understand the key drivers of water take**

WAMC proposed that we continue to base our water take forecast for regulated water sources based 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 as the averaging period rolls forward to include the new actual water take data. This means that over time, over-forecasts will be offset by under-forecasts and prices will be cost reflective on average.

The downside of this approach is that the forecast does not contain contemporaneous information about factors that drive water take. For example, if we could identify and understand the key drivers of water take and could forecast what these key drivers were likely to be over the next four years, then we could use this information to generate a water take forecast that is likely to be more accurate (i.e. closer to actual) than a forecast based on a historical average of actual water take.

In considering WAMC's proposal, we have considered whether alternative forecasting methods might be 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, as well as constraints on demand and supply. This 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. We consider this result is likely to be because of data limitations and potential complexities in the relationships between variables that may have been omitted from our methodology. We consider WAMC are 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 Flood plain harvesting (FPH) forecasts

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

WAMC is expecting that the floodplain harvesting regulation will be operational from 1 July 2021. It is expecting floodplain harvesting to have a small impact on overall water take for certain regulated water sources (around 6% per year based on total water take volumes). 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.[xcix]

**Table 8.3 Regulated river floodplain harvesting forecasts for 2021 Determination (ML)**

| Water source | Forecast |
|---|---|
| Border | 37,400 |
| Gwydir | 139,800 |
| Namoi | 44,000 |
| Macquarie | 39,350 |
| **Total** | **260,550** |

**Source:** Additional information provided by WAMC on September 2020.

## 8.2 Unregulated rivers

Our draft decision is:

22 To accept WAMC's proposed approach for forecasting water entitlements, water take and floodplain harvesting volumes for unregulated rivers but exclude the impact of non-urban metering reform as shown in Table 8.4, Table 8.5 and Table 8.6 respectively.

### 8.2.1 Water entitlement forecasts

In the 2016 price review, we accepted WAMC's forecasting approach for unregulated water sources. It used the latest actual entitlement volumes it had at the time (i.e. 2015-16 period) as the basis for forecasting unregulated water entitlement volumes over the 2016 determination period.[c]

For this price review, WAMC proposed some changes to its forecasting approach. For unregulated rivers water entitlements, WAMC proposed to factor in the impact of non-urban metering reform 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 2020-23 period based on the current rollout timetable of the metering framework.[ci]

We consider that WAMC has applied some rigour when estimating total water entitlements for unregulated water sources over the 2021 determination period. Its approach appears to be the best use of 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.[cii]

For the non-urban metering reform, we are at early stages in our review of proposed costs and other implications of this new regulation. At this stage, we have excluded the impact of non-urban metering reform. We will consider the overall implication of this reform as a package in the Final Report. See Chapter 13 for further discussion on non-urban metering reform.

For this Draft Report, we have made the decision to accept WAMC's general approach to forecasting water entitlements for the different unregulated water sources but exclude impact of non-urban metering reform. Table 8.4 lists forecast entitlements for unregulated water sources over the 2021 determination period based on our draft decision.

**Table 8.4 Unregulated river water entitlement forecasts for 2021 Determination (ML)**

| Water source | 2 part tariff entitlements | 1 part tariff entitlements | Total |
|---|---|---|---|
| Border | 24,977 | 20,868 | 45,845 |
| Gwydir | 25,352 | 24,115 | 49,468 |
| Namoi | 57,757 | 100,757 | 158,514 |
| Peel | 2,320 | 10,034 | 12,353 |
| Lachlan | 14,574 | 41,234 | 55,808 |
| Macquarie | 182,575 | 116,698 | 299,273 |
| Far West | 152,633 | 79,008 | 231,640 |
| Murray and Lower Darling | 33,954 | 18,571 | 52,525 |
| Murrumbidgee | 43,737 | 53,104 | 96,841 |
| North Coast | 120,038 | 157,271 | 277,310 |
| Hunter (incl Hunter Water Corporation) | 522,439 | 153,633 | 676,072 |
| South Coast (incl Water NSW Greater Sydney) | 1,166,049 | 90,469 | 1,256,518 |
| **Total** | **2,346,404** | **865,761** | **3,212,165** |

**Note:** Figures may not add due to rounding.

**Sources:** IPART calculations using WAMC AIRSIR submission to IPART, November 2020, and additional information provided by WAMC on September 2020.

### 8.2.2 Water take forecasts

In the 2016 price review, we accepted WAMC's forecasting approach for unregulated water sources. It used to forecast water take volumes by multiplying forecast entitlement volumes with historical utilisation rates of the different water users.[ciii] Estimating a 20-year rolling average for unregulated water take was not possible because water take data for unregulated water sources is sparse unlike the case in regulated water sources.

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 reform into forecast water take volumes for the 2021 determination period.[23] In addition, WAMC proposed to use best available data sources – i.e. it indicated that more complete unregulated water take (usage) data are now available (stored in the Water Accounting System (WAS)) and should be used.[civ]

Similar to water entitlements, we consider that WAMC has applied some rigour when estimating water take volumes for unregulated water sources over the 2021 determination period. Its approach appears to be the best use of the 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 have, we do not consider that further data manipulation would improve the forecasting of water take.

23 Under the new non-urban metering reform, the measured water take would increase as a result of more customers with water meters.

As discussed in previous section, we are at early stages in our review of proposed costs and other implications of the non-urban metering reform. At this stage, we have excluded the impact of non-urban metering reform. We will consider the overall implication of this reform as a package in the Final Report. See Chapter 13 for further discussion on non-urban metering reform.

For this Draft Report, we have made the decision to accept WAMC's general approach to forecasting water take volumes for the different unregulated water sources but exclude impact of non-urban metering reform. Table 8.5 lists forecast water take volumes for 2-part tariff in unregulated water sources over the 2021 determination period based on our draft decision.

**Table 8.5 Unregulated river water usage forecasts for 2021 Determination (ML)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| Border | 5,357 | 5,357 | 5,357 | 5,357 |
| Gwydir | 1,421 | 1,421 | 1,421 | 1,421 |
| Namoi | 3,731 | 3,731 | 3,731 | 3,731 |
| Peel | 575 | 575 | 575 | 575 |
| Lachlan | 3,937 | 3,937 | 3,937 | 3,937 |
| Macquarie | 51,019 | 51,019 | 51,019 | 51,019 |
| Far West | 91,933 | 91,933 | 91,933 | 91,933 |
| Murray | 5,046 | 5,046 | 5,046 | 5,046 |
| Murrumbidgee | 8,892 | 8,892 | 8,892 | 8,892 |
| North Coast | 41,138 | 41,138 | 41,138 | 41,138 |
| Hunter (incl Hunter Water Corporation) | 123,287 | 123,287 | 123,287 | 123,287 |
| South Coast (incl Water NSW Greater Sydney | 651,027 | 651,027 | 651,027 | 651,027 |
| **Total** | 987,363 | 987,363 | 987,363 | 987,363 |

**Sources:** IPART calculations using WAMC AIRSIR submission to IPART, November 2020, and additional information provided by WAMC on September 2020.

### 8.2.3 Floodplain harvesting forecasts

We have accepted WAMC's floodplain harvesting water take forecasts to set charges when floodplain harvesting is introduced (see Table 8.6).

WAMC is expecting that the floodplain harvesting regulation will be operational from 1 July 2021. It is expecting that floodplain harvesting to 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. [cv]

**Table 8.6 Unregulated river floodplain harvesting forecasts for 2021 Determination (ML)**

| Water source | Forecast |
|---|---|
| Gwydir | 10,579 |
| Namoi | 20,146 |
| Far West | 23,000 |
| **Total** | 53,725 |

**Source:** Additional information provided by WAMC on September 2020.

## 8.3 Groundwater sources

Our draft decision is:

23 Accept WAMC's proposed approach for forecasting water entitlements, water take and floodplain harvesting volumes for groundwater sources but exclude the impact of non-urban metering reform as shown as shown in Table 8.7 and Table 8.8.

### 8.3.1 Water entitlements

WAMC also proposed to use the same forecasting approach discussed in unregulated entitlements (see section 8.2.1) for groundwater entitlements.

Based on our previous considerations, we have made the decision to accept WAMC's general approach to forecasting water entitlements for groundwater sources but exclude impact of non-urban metering reform. Table 8.7 lists forecast entitlements for groundwater sources over the 2021 determination period based on our draft decision.

**Table 8.7 Groundwater entitlement forecasts for 2021 Determination (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 | 980,652 | 977,800 | 977,800 | 977,800 |
| ▼ Coastal | 180,683 | 200,500 | 200,500 | 200,500 |
| ▼ Total 2 part tariff entitlements | **1,535,240** | **1,555,057** | **1,555,057** | **1,555,057** |
| **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 | 206,946 | 209,798 | 209,798 | 209,798 |
| ▼ Coastal | 202,630 | 182,813 | 182,813 | 182,813 |
| ▼ Total 1 part tariff entitlements | **429,219** | **409,402** | **409,402** | **409,402** |
| **Total entitlements** | **1,964,458** | **1,964,458** | **1,964,458** | **1,964,458** |

**Note:** Figures may not add due to rounding.
**Sources:** IPART calculations using WAMC AIRSIR submission to IPART, November 2020, and additional information provided by WAMC on September 2020.

### 8.3.2 Water take forecasts

WAMC also proposed to use the same forecasting approach discussed in unregulated water take volumes (see section 8.2.2) for groundwater water take volumes.

Based on previous considerations, we have made the decision to accept WAMC's general approach to forecasting water take volumes but exclude impact of non-urban metering reform. Table 8.8 lists forecast water take volumes for 2-part tariff in groundwater sources over the 2021 determination period based on our draft decision.

**Table 8.8 Groundwater water take forecasts for 2021 Determination (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 | 682,097 | 680,762 | 680,762 | 680,762 |
| Coastal | 40,197 | 44,358 | 44,358 | 44,358 |
| **Total** | **1,015,566** | **1,019,727** | **1,019,727** | **1,019,727** |

WAMC AIRSIR submission to IPART, November 2020. WAMC (DPIE / NRAR) pricing proposal to IPART, June 2020, p 61. WAMC (Water NSW) pricing proposal to IPART, June 2020, p 113.

## 8.4 Demand volatility mechanism

In its pricing proposal, WAMC proposed:[cvi]

- It is not seeking an adjustment to its revenues for the 2021 Determination period based on the demand volatility adjustment mechanism included by IPART in the 2016 Determination.
- It would like to maintain the demand volatility adjustment mechanism (DVAM) from the 2016 Determination for the 2021 Determination period.

In our 2016 Final Report, we said:[cvii]

> 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 have analysed WAMC's estimated actual revenues against revenue requirements for the 2016 Determination period (see Table 8.9). Based on this, WAMC is estimated to have over-recovered its revenues associated with groundwater sources, which is then offset by under-recovery in regulated and unregulated water sources. Therefore, we consider that there is no requirement to make any revenue adjustments over the next 4 years. This 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 | 98.4% | 82.6% | 108.2% |

**Source:** IPART analysis.

In terms of WAMC's proposal to continue to have a DVAM, we did not establish a DVAM for WAMC. For clarity, in our 2016 Final Report, we indicated that 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 approve establishing a DVAM for WAMC.

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

In response to our Issues Paper, WAMC supported establishing a DVAM for its business.[cviii] However, stakeholders were unanimous in their opposition for WAMC to have a DVAM. Stakeholder considered that:[cix]

- Allocating risks to customers is inefficient and not least cost.
- Government (as the ultimate owners 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

For the 2021 determination period, we maintain the position we indicated in the Issues Paper. That is, to not establish a DVAM for WAMC. This is because 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 have made in our concurrent review of Water NSW's rural bulk water prices. Under the existing price structure, WAMC is recovering 70% of its revenue 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 have 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).

# 9 Price structures for water management services

## Summary of our draft decisions on price structures

**We are unbundling existing water management charges into three components: WAMC, MDBA and BRC charges**

- This is to improve transparency in costs and prices, and be consistent in how we set charges for rural bulk water.
- It means that water users will pay up to three separate charges, including small water users that are subject to the minimum annual charge.
- Currently, small water users only contribute to WAMC's administrative costs and do not contribute to MDBA and BRC costs. Under our draft decision, we sought to improve the sharing of these costs between all water users.

**We are transitioning prices to full cost recovery**

- For the WAMC price component, we have decided to transition prices for each water source towards full cost recovery at a capped annual real rate of 2.5%, until full cost recovery is achieved.
- For the MDBA and BRC price components, we have decided to set these prices at full cost recovery from 2021-22.

**We have largely maintained other price structure features**

- We accepted WAMC's proposal to continue to set different prices for each water source.
- We accepted WAMC's proposal to continue to set 1-part and 2-part tariffs. For the 2-part tariff, we have maintained the current 70:30 fixed to variable ratio. Under this split, the tariffs are structured so that 70% of the forecast revenue is recovered from fixed charges and 30% from water take (or variable) charges.
- We will continue to set separate prices for floodplain harvesting.
- We will also continue to set separate prices for Water NSW to recover metropolitan water planning costs.

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 unbundle existing water management charges into three components – WAMC, MDBA and BRC charges. We set charges for each component to recover the 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 the water source they belong to, the type of licence they have, whether they have water meters or not, whether they have special licences, and whether there is a possibility that floodplain harvesting is implemented in their water source at some point during the next determination period.

## 9.1 We have decided to unbundle water management charges

Our draft decisions is:

24 To set separate charges for WAMC's water management, MDBA and BRC activities.

WAMC proposed to continue to set bundled water management charges that recover both its own water management costs and also recover costs relating to MDBA and BRC activities.

In our Issues Paper, we sought feedback on a potential change to this structure – that is, setting separate charges for WAMC's water management, MDBA and BRC activities.[cx] We considered that this change would:

- improve transparency in costs and prices for water users compared with the current 'bundled' charges
- 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 storage and delivery charges.

Stakeholders expressed in-principle support for this change.[cxi] During the November Public Hearing, stakeholders indicated 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.

Based on the rationale and in-principle stakeholder support for this change, we have made a draft decision to unbundle the existing water management charges into three components: WAMC water management, MDBA and BRC charges. This means that water users will pay up to three types of charges based on their location:

- Water users in coastal valleys will pay the WAMC water management charge only.
- Water users in the MDB (but not in BRC areas) will pay the WAMC water management charge and also an MDBA charge.
- Water users in the BRC areas will pay the WAMC water management charge, MDBA charge and a BRC charge.

In addition, we have decided to maintain the minimum annual charge (MAC), which reflects the administration costs associated with small water users, and apply it to the WAMC water management charge. That is, a water user that attracts the MAC will also be subject to any applicable 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 have decided to set prices to recover efficient costs

Our draft decisions are:

25 For the WAMC water management price component, to transition prices for each water source towards full cost recovery level at a capped annual real rate of 2.5%, until full cost recovery is achieved.

26 For the MDBA price component, to set prices at full cost recovery from 2021-22.

27 For the BRC price component, to set prices at full cost recovery from 2021-22.

28 For the minimum annual charge, to transition prices towards full cost recovery level at a capped annual real rate of 2.5%, until full cost recovery is achieved.

### 9.2.1 WAMC, MDBA and BRC price components

WAMC proposed to recover the user share of its proposed costs via a combination of price increases and additional contributions from the NSW Government.[cxii]

- WAMC proposed for all existing water management prices to increase from 2020-21 price levels at a capped annual real rate of 5% (or 22% over the next 4 years). WAMC proposed this to mitigate price impacts on customers.
- This would result in under-recovery of revenue for most water sources. As a result, WAMC proposed the NSW Government provides $87 million of community service obligation (CSO) payments or additional contributions to fund the shortfall. [24]

Stakeholders did not support WAMC's proposed price increases.

In our Issues Paper, we indicated that balancing the trade-off between achieving full cost recovery and affordability would be a key issue for this review. We considered different price path scenarios in our analysis that:[cxiii]

- reflected some sharing of the reductions in expenditure from the proposal between water users (i.e. prices they pay) and the NSW Government (i.e. the amount of additional contributions they would need to provide), and
- regarded the implications of changing the price structure from bundled prices to three separate price components for WAMC, MDBA and BRC.

24 In the Water NSW WAMC proposal, Water NSW indicated a funding shortfall of $97 million. However, we are unable to reconcile this number. Instead, we have estimated the shortfall to be around $87 million.

Our draft decisions include transitioning the WAMC price component to full cost recovery, however capping the annual real price increases at 2.5% for each water source based on 2020-21 levels. Further, we have decided to set MDBA and BRC price components at full cost recovery from 2021-22.

While our draft prices are higher than current levels, we consider our draft decisions achieve an appropriate balance between the need to transition towards full cost recovery and limiting bill impacts on water users. Under our draft decisions, prices and bills will be lower for most (but not all) water users compared with WAMC's proposal. Further, the NSW Government contributions would be lower compared with WAMC's proposal. Our draft prices and analysis of the impacts of our draft prices are further discussed in chapters 10 and 11 respectively.

### 9.2.2 Our approach for setting the WAMC price component

To set WAMC's water management component, we consider:

1. the prices required to achieve full cost recovery over the 2021 determination period, and
2. the level of prices that will transition the current 2020-21 combined prices (i.e. the entitlement charge plus the water take charge) to full cost recovery prices at a maximum real increase of 2.5% per year (i.e. transitioning prices).

To minimise price and bill impacts to water users, we use the minimum price from these two approaches for each year of the determination period.

The process for setting the WAMC water management component prices are as follows:

- **Step 1 –** subtract MDBA and BRC estimated prices from current 2020-21 prices for a like-for-like starting point for the WAMC management costs component of the prices being set
- **Step 2 –** calculate full cost recovery prices based on our decisions on efficient costs, price structures and entitlement and water take forecasts
- **Step 3 –** set starting prices for 2021-22 as the minimum of:
  a) Full cost recovery prices, or
  b) The prices calculated in step 1, escalated by 2.5% and rebalanced to achieve a 70% fixed and 30% variable price structure[25]
- Step 4 – while prices are below full cost recovery, increase prices at a real rate of 2.5% each year of the determination period until they reach full cost recovery.

25 In section 9.4, we discuss our draft decision on the tariff structure. In summary. WAMC proposed, we maintain the current 70:30 fixed to variable ratio for 2 part tariffs. Under this split, the tariffs are structured so that 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).

### 9.2.3 Minimum annual charge

A minimum annual charge (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[26] for small-sized water holdings. The current MAC is set at $214 per water user.[cxiv]

WAMC proposed to transition the MAC towards full cost recovery by increasing the MAC at a rate of 5% per year. WAMC estimates that its minimum cost per water user is around $500 per year. Further, it estimates it would take over 18 years to achieve full cost recovery.

We did not receive any stakeholder submissions on the MAC. In past reviews, we note that stakeholders generally support a higher, more cost-reflective MAC.[cxv]

Our draft decision is to accept WAMC's proposal to transition the MAC towards full cost recovery. However, we have decided to transition the MAC at a lower annual rate of 2.5% per water user. Our decision will have an impact on the level of full cost recovery prices by water source, with a larger share of the revenue recovered through the MAC. The number of customers subject to the MAC will also increase compared to WAMC's proposal. These impacts are further discussed in Chapter 11.

## 9.3 We continue to set prices for each water source

Our draft decision is:

29 To maintain our approach of setting charges for each water source, i.e., the 11 regulated rivers, 8 unregulated rivers and 4 groundwater sources.

WAMC proposed to maintain the existing geographic split of prices across three water types as set in the 2016 Determination (i.e. water source based pricing).[cxvi]

Three stakeholders supported maintaining the water source based pricing. Irrigation organisations were generally satisfied with the existing water source split. [cxvii] We note that some stakeholders suggested alternative views such as state-wide postage stamp pricing and further price disaggregation based on catchment splits.[cxviii]

On balance, we made a draft decision to maintain water source based pricing for regulated, unregulated and groundwater sources.

- This ensures prices are reasonably cost-reflective and there is transparency, and hence accountability, around costs and activities.
- This pricing approach supports the impactor pays principle – that is, those who create the need for WAMC to incur costs should pay for those costs.
- This received reasonable support from stakeholders.

26 The costs relate to compliance management, customer management and billing management.

Based on this draft decision, we have decided to 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[27], Central West[28], Murray, Murrumbidgee, North Coast, Hunter and South Coast
- 4 groundwater sources: Inland, Border, Murrumbidgee and Coastal

For the number of water sources, there is no change for regulated and unregulated water sources when compared to the 2016 price review.

For groundwater sources, we have made a draft decision to separate Border from the Inland water source. The new floodplain harvesting framework is currently being planned to occur in Border. As such, we have made a draft decision to separate Border from Inland to ensure the effect of floodplain harvesting only applies to Border.

## 9.4 We maintain our approach on setting the tariff structure

Our draft decisions are:

30 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.

31 To maintain the current tariff structures for 2-part tariff so that 70% of forecast revenue from the 2-part tariff 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.

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 To apply these tariff structures on the three different components: WAMC, MDBA and BRC charges.

27 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.

28 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.

### Maintain 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 (see section 9.6 for further details).

For water users that have 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 (i.e. 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 (i.e. 2-part tariffs).

In its pricing proposal, WAMC indicated it will continue to have a mix of water users that have or do not have water meters. Accordingly, our draft decision is to maintain 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. This is because 1-part tariffs apply when water users do not have meters or meter equivalents. In regulated water sources, 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.

### Maintain the tariff structure for 2-part tariffs

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, and we have accepted, to maintain the current 70:30 fixed to variable ratio for 2-part tariffs. Under this split, the tariffs are structured so that 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).[cxix]

The exception to the 70:30 split is the North Coast regulated water source, where the ratio is currently set at a 92:08 fixed to variable ratio. This ratio is set at a different level to reflect a low water activation rate for this water source, and to mitigate bill and revenue variability that would result from the application of a 70:30 split.[cxx]

We consider our draft 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 minimum annual charges. This would be closer to reflecting WAMC's cost structure.
- We acknowledge that water users and other stakeholders would generally prefer lower fixed and higher variable split. However, we note that the 70:30 fixed to variable split mitigates some of the potential bill impact for water users on 2-part tariffs in times of low water availability compared with a higher ratio of fixed charges if we were to set tariffs to match WAMC's cost structure.

### 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 draft decision to unbundle existing prices into three pricing components. Based on this decision, we will apply the 1-part and 2-part tariffs to these three pricing components. In Chapter 10, we present prices for each water source in three stages:

1. Water management prices for all water sources
2. MDBA and BRC prices for all water sources
3. Combined prices (i.e. water management prices, MDBA and BRC prices).

## 9.5 We continue to set separate prices for floodplain harvesting

Our draft decision is:

34 To maintain setting separate prices to apply from 1 July following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for that water source.

Floodplain harvesting is 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, WAMC proposed:

- Two tariff levels for water sources where floodplain harvesting licences would be introduced: one price schedule that excludes and another price schedule that includes floodplain harvesting 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 floodplain harvesting licences.

WAMC proposed this approach because the implementation of floodplain harvesting licences was still being negotiated at the time of the 2016 price review. The implementation did not happen during the 2016 determination period, and the price schedule that included floodplain harvesting licences was not applied.

For this review, WAMC did not raise setting two tariff levels for water sources where floodplain harvesting licences would be introduced. Further, WAMC proposed to set prices that exclude floodplain harvesting licences. However, recent discussions with officers from DPIE indicated that the agency is still negotiating with stakeholders and the NSW Government to implement the floodplain harvesting licences from 1 July 2021.

Given the possible implementation occurring in July 2021, we made a draft decision to continue to set separate prices to apply from 1 July following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for particular water sources.

As per the 2016 price review and under the impactor pays principle, we consider it appropriate that new floodplain harvesting licence holders contribute to ongoing management, monitoring and enforcement costs when the licences are created. We understand that the marginal level of associated activities will add no additional operating costs to revenue needs. Therefore, the implementation of floodplain harvesting 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 go down for all water users in a water source following the implementation of floodplain harvesting licences. This is further discussed in Chapter 10.

## 9.6 We accepted WAMC's other special categories of licences

Our draft decision is:

35 To accept WAMC's proposed special categories of licences (see Table 9.1).

There are three tariff categories of licences:

1. Entitlement charge licences: These are licences subject to fixed or fixed and water take charges (see section 9.2).
2. Water take charge only licences: These 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 four sub-categories of regulated river licences and three sub-categories of unregulated river licences. There are no groundwater licences that are water take charge only licences. See Table 9.1 for further details.
3. Minimum charge only licences: Water taken against this licence will have already been recorded (and charged) under another licence, for example a major utility in the Barnard Scheme located in the Hunter regulated water source and unregulated river (regulated supply) categories. In addition, water taken against this licence could be used solely for water impacts management and cannot be used for consumptive or commercial purposes or traded, for example salinity and water table management licences.

In the 2016 Determination, we approved WAMC's proposed special category of licences.[cxxi] For the 2021 determination period, WAMC has proposed to maintain these special categories listed below (see Table 9.1).[cxxii]

**Table 9.1 Special licence categories for the 2021 Determination**

| 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 |

In the 2016 review, the rationale for setting the tariff category for each special licence category is summarised in the table below.

**Table 9.2 Rationale for each special licence categories in the 2016 price review**

| Licence category | Rationale for the tariff category |
|---|---|
| Floodplain harvesting (regulated river) | WAMC proposed licence holders to pay water take charge only because of the nature of how they access water. |
| Major utility (Barnard) (regulated river) | WAMC proposed licence holders to pay minimum annual charge only to avoid double charging them. This was because the water entitlements in these licences are already contained in other licences. |
| Supplementary water (regulated river) | WAMC proposed licence holders to pay water take charge only because of the nature of how they access water. |
| Supplementary water environmental access (regulated river) | |
| Supplementary water (Lowbidgee) (regulated river) | |
| Floodplain harvesting (unregulated river) | |
| Major utility (Grahamstown) (unregulated river) | WAMC proposed licence holders to pay minimum annual charge only to avoid double charging them. This was because the water entitlements in these licences are already contained in other licences. |
| Supplementary Aboriginal environmental water access (unregulated river) | WAMC proposed licence holders to pay water take charge only because of the nature of how they access water. |
| Unregulated river (regulated supply) | WAMC proposed licence holders to pay minimum annual charge only. These are specific purpose access licences used to take water that has been diverted from a regulated water source under a regulated river access licence into an unregulated river water source. |
| Unregulated river (regulated supply – local water utility) | |
| Unregulated river (special additional high flow) | WAMC proposed licence holders to pay water take charge only because of the nature of how they access water. |
| Salinity and water table management (groundwater) | WAMC proposed licence holders to pay minimum annual charge only. These are specific purpose access licences used to combat the rising volume and effects of salinity in the Murray Darling Basin. |

At this stage, we have made a draft decision to accept WAMC's proposal to maintain having special licence categories and tariff structures. However, we are seeking additional information from WAMC in regards to this matter. We also welcome stakeholder feedback on this matter.

In section 9.1, we discussed our draft 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 Table 9.1 will also be paying MDBA and BRC charges. We consider this change will improve the sharing of MDBA and BRC costs between all water users.

### We seek your comments

1 What are your views on WAMC's pricing proposals in relation to special licence categories for the 2021 determination period? Do you support the continuation of these special licence categories? Do you agree with the rationale?

## 9.7 We continue to set separate price for Water NSW (South Coast unregulated rivers) to recover metropolitan water planning costs

### Our draft decision is:

36 To apply a separate 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 decided to 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. In the 2016 price review, we concluded that the impactor was Water NSW.[cxxiii] Water NSW is a major water utility which, 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 meant that WAMC can charge a special levy to Water NSW to recover the cost of metropolitan 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 to set 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 cost proposal and our draft decisions on metropolitan water planning.

We made a draft decision to maintain the approach of setting a separate price to recover the user share of efficient costs of metropolitan water planning directly from Water NSW. This is further discussed in Chapter 10.

## 9.8 Future considerations

WAMC's price structure is complex, particularly given its size. That is, it has 1-part and 2-part tariffs for 27 water sources (11 regulated river, 12 unregulated river, 4 ground water sources). Further, these water source based 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 process. An advantage could be this process allows prices to be more cost-reflective for each water source. However, a disadvantage could be this allocation process may not be materially more cost reflective than the current allocation approach (given the inherent uncertainty associated with cost allocation). Also, this process could 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.

# 10 Draft prices for water management services

## Summary of our draft decisions on prices

**For regulated water sources, changes in prices are driven by the overall increase in efficient costs as well as a higher proportion of efficient costs being allocated to these water sources than allowed in the 2016 price review.**

- The majority of entitlement and water take charges are increasing from current levels.
- Some water sources have charges at full cost recovery while the majority of charges will be transitioning towards full cost recovery over the next 4 years.
- This is driven by higher costs allocated to regulated water sources while entitlement and water take volumes have remained relatively stable.

**For unregulated water sources, changes in prices are mainly driven by the overall increase in efficient costs and movements in forecast entitlement and water take volumes.**

- For unregulated water sources, entitlement charges are decreasing by up to 55% in 7 out 12 water sources and increasing by up to 16% for the remaining 5 water sources. Water take charges are increasing by up to 58% for all water sources, with the large increase in water take charges being offset by the large declines in entitlement charges.
- The movement in entitlement and water take volumes during the 2016 determination period has influenced the price movements over the next 4 years as previously noted.

**For groundwater sources, changes in prices are driven by changes in the level of efficient costs and changes in how costs are allocated between groundwater sources.**

- For groundwater sources, entitlement charges are decreasing by up to 4% for 1 water source, and increasing by up to 32% for 3 water sources. Water take charges are also decreasing for 3 water sources by up to 31%, and increasing by up to 11% for the remaining water source.

Our pricing decisions are based on our draft decisions on the notional revenue requirement (NRR), price structures and forecast entitlements and water take volumes for the 2021 determination period.

This chapter covers our draft decisions on 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 NRR on a water source basis, or transition to fully recover the user share of NRR. Some water sources will achieve full cost recovery over the next 4 years, while others will achieve full cost recovery over a number of determination periods.

We also present prices that include the impacts of floodplain harvesting. This reflects our decision to set separate prices for a water source if the Minister approves issuing floodplain harvesting 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 effect of: a) changes in efficient costs, b) changes in cost allocations between water sources, c) changes in underlying entitlement and water take forecasts, and d) maintaining the 70:30 price structure. In some water sources, these factors have offsetting effects and in others they have compounding effects.

This chapter is structured as follows:

1. Prices for regulated water sources: entitlement charge and water take charge
2. Prices for unregulated water sources: 2-part entitlement charge, 2-part water take charge and 1-part entitlement
3. Prices for groundwater sources: 2-part entitlement charge, 2-part water take charge and 1-part entitlement
4. Prices for regulated and unregulated water sources with floodplain harvesting
5. Minimum annual charge
6. Separate price for Water NSW (South Coast unregulated water source).

We report prices on the following basis (where applicable) in $2020-21:

1. WAMC's water management prices for all water sources
2. MDBA prices for relevant water sources
3. BRC prices for relevant water sources, and
4. Combined prices (water management, MDBA and BRC prices – i.e. 1, 2 and 3 combined).

We have provided combined prices to enable us to show the change in prices in the final year of the 2021 determination period (2024-25) relative to current bundled 2020-21 prices.

## 10.1 Prices for water users in regulated water sources

Our draft decision is:

37 To set the maximum prices listed in Table 10.1, Table 10.2, Table 10.3 and Table 10.4 for water users in regulated water sources.

The majority of the combined entitlement (fixed) and water take (variable) charges are higher in 2024-25 than 2020-21 charges: 10 out of 11 water sources will face combined entitlement and water take charge increases.

The combined charges are comprised of:

- WAMC's water management charge component that is transitioning to full cost recovery levels at a maximum rate of 2.5% per year in real terms.
- MDBA and BRC charge components set at full cost recovery levels from 2021-22.

Table 10.1 to Table 10.4 show the different entitlement and water take prices for each year of the 2021 determination period in $2020-21.

### 10.1.1 Entitlement charges

Over the next 4 years, prices for 10 water sources are increasing at different levels (see Table 10.2):

- Water users in the Border regulated water source will face the highest price increase of 52% over the next 4 years. This is because they will incur all three prices (WAMC's water management, MDBA and BRC) that are set at full cost recovery levels.
- The majority of other water sources (i.e. except Namoi) will face price increases. However, the increases are at a lower rate when compared with Border.
- Prices in the Namoi regulated water source are decreasing mostly because the costs allocated to this water source are lower over the next 4 years compared with costs during the 2016 determination period.

There are number of factors driving the higher combined prices for regulated water sources.

- A higher level of efficient costs compared with the 2016 price review.
- A small shift of efficient costs from unregulated and groundwater sources to regulated water sources based on our decision on cost drivers.
- WAMC's water management charges transitioning to full cost recovery levels: This places upward pressure on prices for water sources that are not at full cost recovery levels.
- MDBA and BRC charges being set at full cost recovery: This affects water sources that receive MDBA and BRC services.

**Table 10.1 Draft decision on WAMC, MDBA and BRC component charges for regulated rivers – fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC water management component** | | | | |
| Border | 1.63 | 1.63 | 1.63 | 1.63 |
| Gwydir | 1.13 | 1.13 | 1.13 | 1.13 |
| Namoi | 1.67 | 1.67 | 1.67 | 1.67 |
| Peel | 2.97 | 3.05 | 3.12 | 3.20 |
| Lachlan | 1.14 | 1.17 | 1.20 | 1.23 |
| Macquarie | 1.39 | 1.42 | 1.46 | 1.49 |
| Murray | 1.12 | 1.15 | 1.18 | 1.21 |
| Murrumbidgee | 0.96 | 0.99 | 1.01 | 1.04 |
| North Coast | 4.28 | 4.39 | 4.50 | 4.61 |
| Hunter | 3.19 | 3.27 | 3.36 | 3.44 |
| South Coast | 3.44 | 3.52 | 3.61 | 3.70 |
| **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 | 1.28 | 1.28 | 1.28 | 1.28 |

**a** MDBA prices will only apply to 8 out of 11 regulated water sources. That is, 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 1 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 Draft decision on combined charges for regulated rivers – fixed component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.28 | 3.46 | 3.46 | 3.46 | 3.46 | 52% |
| Gwydir | 1.62 | 1.84 | 1.84 | 1.84 | 1.84 | 13% |
| Namoi | 2.73 | 2.49 | 2.49 | 2.49 | 2.49 | -9% |
| Peel | 2.67 | 3.22 | 3.29 | 3.37 | 3.45 | 29% |
| Lachlan | 1.43 | 1.47 | 1.50 | 1.53 | 1.56 | 9% |
| Macquarie | 1.71 | 1.83 | 1.87 | 1.90 | 1.94 | 14% |
| Murray | 1.54 | 1.75 | 1.78 | 1.80 | 1.83 | 19% |
| Murrumbidgee | 1.41 | 1.61 | 1.64 | 1.66 | 1.69 | 19% |
| North Coast | 3.97 | 4.28 | 4.39 | 4.50 | 4.61 | 16% |
| Hunter | 3.12 | 3.19 | 3.27 | 3.36 | 3.44 | 10% |
| South Coast | 3.34 | 3.44 | 3.52 | 3.61 | 3.70 | 11% |

**Note:** Figures may not add due to rounding. The % change compares the 2024-25 prices against the 2020-21 prices.

**Source:** IPART analysis.

### 10.1.2 Water take charges

Similar to entitlement charges, most water sources will experience water take price increases, with Namoi facing price decreases over the next four years.

Table 10.3 shows the breakdown of the different components and Table 10.4 shows the combined water take prices.

**Table 10.3 Draft decision on WAMC, MDBA and BRC component charges for regulated rivers – water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC water management component** | | | | |
| Border | 1.22 | 1.22 | 1.22 | 1.22 |
| Gwydir | 1.07 | 1.07 | 1.07 | 1.07 |
| Namoi | 1.21 | 1.21 | 1.21 | 1.21 |
| Peel | 4.60 | 4.72 | 4.84 | 4.96 |
| Lachlan | 1.70 | 1.74 | 1.79 | 1.83 |
| Macquarie | 1.55 | 1.59 | 1.63 | 1.67 |
| Murray | 0.78 | 0.80 | 0.82 | 0.84 |
| Murrumbidgee | 0.68 | 0.69 | 0.71 | 0.73 |
| North Coast | 6.05 | 6.21 | 6.36 | 6.52 |
| Hunter | 2.20 | 2.26 | 2.31 | 2.37 |
| South Coast | 5.44 | 5.58 | 5.72 | 5.86 |
| **MDBA component**[a] | | | | |
| Border | 0.24 | 0.24 | 0.24 | 0.24 |
| Gwydir | 0.40 | 0.40 | 0.40 | 0.40 |
| Namoi | 0.36 | 0.36 | 0.36 | 0.36 |
| Peel | 0.23 | 0.23 | 0.23 | 0.23 |
| Lachlan | 0.30 | 0.30 | 0.30 | 0.30 |
| Macquarie | 0.30 | 0.30 | 0.30 | 0.30 |
| Murray | 0.26 | 0.26 | 0.26 | 0.26 |
| Murrumbidgee | 0.27 | 0.27 | 0.27 | 0.27 |
| **BRC component**[b] | | | | |
| Border | 0.58 | 0.58 | 0.58 | 0.58 |

**a** MDBA prices will only apply to 8 out of 11 regulated water sources. That is, 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 1 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 10.4 Draft decision on combined charges for regulated rivers – water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 1.78 | 2.04 | 2.04 | 2.04 | 2.04 | 15% |
| Gwydir | 1.40 | 1.48 | 1.48 | 1.48 | 1.48 | 5% |
| Namoi | 1.84 | 1.57 | 1.57 | 1.57 | 1.57 | -14% |
| Peel | 4.76 | 4.83 | 4.95 | 5.07 | 5.19 | 9% |
| Lachlan | 1.92 | 2.00 | 2.04 | 2.09 | 2.13 | 11% |
| Macquarie | 1.85 | 1.85 | 1.89 | 1.93 | 1.97 | 7% |
| Murray | 1.10 | 1.04 | 1.06 | 1.08 | 1.10 | 0% |
| Murrumbidgee | 0.94 | 0.94 | 0.96 | 0.98 | 1.00 | 6% |
| North Coast | 6.12 | 6.05 | 6.21 | 6.36 | 6.52 | 7% |
| Hunter | 2.14 | 2.20 | 2.26 | 2.31 | 2.37 | 11% |
| South Coast | 5.32 | 5.44 | 5.58 | 5.72 | 5.86 | 10% |

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

## 10.2 Prices for water users in unregulated water sources

Our draft decision is:

38 To set the maximum prices listed 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 water sources will face price decreases over the next four years, while others will face price increases.

- For 2-part tariffs, 7 out of 12 unregulated water sources will face combined entitlement price decreases while the remaining 5 unregulated water sources will face combined entitlement price increases. In addition, combined water take prices will increase for all unregulated water sources, however the rate is different for each water source.
- For 1-part tariffs, 2 out of 12 unregulated water sources will face combined entitlement price decreases while the remaining 10 unregulated water sources will face entitlement price increases. The magnitude of price movements for 1-part tariffs take into account the net movements of 2-part tariff entitlement price movements.

Since the 2016 review, there have been large movements in forecasts entitlement and water take volumes between 1-part and 2-part tariff licences. This results in a higher proportion of 2-part licence entitlements and lower proportion of 1-part licence entitlements in particular water sources. There is also an increase in measurable water take volumes for 2-part tariff licences.[29] These changes have resulted in varied price movements for water sources over the next 4 years.

Table 10.5 to Table 10.8 show the entitlement and water take charges for the different unregulated water sources in each year of the 2021 determination period.

29 Water users that have water meters pay 2-part tariff. Meanwhile, water users that do not have water meters pay 1-part tariff.

### 10.2.1 Entitlement charges for 2-part tariffs

Under our draft decisions for unregulated water sources, more than half of the water sources will experience combined price decreases and the remaining water sources will face price increases.

For the Border, Gwydir, Namoi, Peel, Lachlan and Macquarie water sources, price decreases are driven by two factors:

- There are more water users on 2-part tariffs. In the 2016 price review, we estimated that water users on 2-part tariffs would have around 60,000ML of entitlements.[cxxiv] For the 2021 determination period, we have estimated that water users would have around 300,000ML of entitlements (or 5 times the 2016 entitlements).[30] In addition, total entitlements (i.e. the sum of 1-part and 2-part entitlements) for these water sources have increased by around 25% since our last review.
- The cost allocated to these water sources have increased but not as much as the increase in entitlements.
- The impact of the change in entitlements on prices have more than offset the impact of higher costs on prices. As a result, entitlement charges are decreasing.

The remaining water sources also have more entitlements associated with water users that are on 2-part tariffs. However, the magnitude of changes in entitlements are not as big and the impact on prices does not offset the impact of costs on prices. As a result, entitlements charges are increasing for these remaining water sources.

**Table 10.5 Draft decision on WAMC, MDBA and BRC component charges for unregulated rivers – fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC water management component** | | | | |
| Border | 0.85 | 0.87 | 0.89 | 0.92 |
| Gwydir | 0.85 | 0.87 | 0.89 | 0.92 |
| Namoi | 0.85 | 0.87 | 0.89 | 0.92 |
| Peel | 0.85 | 0.87 | 0.89 | 0.92 |
| Lachlan | 2.09 | 2.09 | 2.09 | 2.09 |
| Macquarie | 2.09 | 2.09 | 2.09 | 2.09 |
| Far West | 2.70 | 2.70 | 2.70 | 2.70 |
| Murray | 1.74 | 1.78 | 1.83 | 1.87 |
| Murrumbidgee | 2.94 | 3.01 | 3.09 | 3.16 |
| North Coast | 4.34 | 4.45 | 4.56 | 4.67 |
| Hunter | 1.25 | 1.28 | 1.31 | 1.35 |
| South Coast | 1.89 | 1.94 | 1.99 | 2.04 |
| **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 |

30 In Chapter 8, we present the entitlement forecasts for unregulated water sources for 1-part and 2-part tariff licences in Table 8.4. We also present the total forecast entitlement over the next four years, which is 3.2 million ML. This 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 |
|---|---|---|---|---|
| Peel | 0.09 | 0.09 | 0.09 | 0.09 |
| Lachlan | 0.12 | 0.12 | 0.12 | 0.12 |
| Macquarie | 0.12 | 0.12 | 0.12 | 0.12 |
| Far West | 0.79 | 0.79 | 0.79 | 0.79 |
| Murray | 0.15 | 0.15 | 0.15 | 0.15 |
| Murrumbidgee | 0.12 | 0.12 | 0.12 | 0.12 |
| **BRC component[b]** | | | | |
| Far West | 1.28 | 1.28 | 1.28 | 1.28 |

**a** MDBA prices will only apply to 9 out of 12 unregulated water sources. That is, 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 Draft decision on combined charges for unregulated rivers – fixed component of two-part tariff ($/ML, $2020-21)

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.31 | 0.94 | 0.96 | 0.98 | 1.00 | -57% |
| Gwydir | 2.31 | 0.94 | 0.96 | 0.98 | 1.00 | -57% |
| Namoi | 2.31 | 0.94 | 0.96 | 0.98 | 1.00 | -57% |
| Peel | 2.31 | 0.94 | 0.96 | 0.98 | 1.00 | -57% |
| Lachlan | 2.69 | 2.21 | 2.21 | 2.21 | 2.21 | -18% |
| Macquarie | 2.69 | 2.21 | 2.21 | 2.21 | 2.21 | -18% |
| Far West | 4.13 | 4.77 | 4.77 | 4.77 | 4.77 | 16% |
| Murray | 2.64 | 1.89 | 1.93 | 1.98 | 2.02 | -23% |
| Murrumbidgee | 3.27 | 3.06 | 3.13 | 3.21 | 3.29 | 1% |
| North Coast | 4.59 | 4.34 | 4.45 | 4.56 | 4.67 | 2% |
| Hunter | 1.30 | 1.25 | 1.28 | 1.31 | 1.35 | 4% |
| South Coast | 1.75 | 1.89 | 1.94 | 1.99 | 2.04 | 16% |

**Note:** Figures may not add due to rounding.

**Source:** IPART analysis.

### 10.2.2 Water take charges for 2-part tariffs

Under our draft decisions for unregulated water sources, all water sources will experience water take price increases. These price increases are the result of how we have transitioned WAMC's water take charges towards full cost recovery and the impact of setting MDBA and BRC charges at full cost recovery. However, increases in water take charges for some of the water sources are being offset by decreases in entitlement charges. On a net basis, the magnitude of changes in entitlement and water take charges are not as big. This is particularly apparent when we consider the price movements for 1-part tariffs in the next section.

**Table 10.7 Draft decision on WAMC, MDBA and BRC component charges for unregulated rivers – water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC water management component** | | | | |
| Border | 3.45 | 3.53 | 3.62 | 3.71 |
| Gwydir | 3.45 | 3.53 | 3.62 | 3.71 |
| Namoi | 3.45 | 3.53 | 3.62 | 3.71 |
| Peel | 3.45 | 3.53 | 3.62 | 3.71 |
| Lachlan | 3.14 | 3.14 | 3.14 | 3.14 |
| Macquarie | 3.14 | 3.14 | 3.14 | 3.14 |
| Far West | 1.92 | 1.92 | 1.92 | 1.92 |
| Murray | 5.02 | 5.15 | 5.27 | 5.41 |
| Murrumbidgee | 6.16 | 6.31 | 6.47 | 6.63 |
| North Coast | 5.42 | 5.55 | 5.69 | 5.83 |
| Hunter | 2.26 | 2.32 | 2.38 | 2.44 |
| South Coast | 1.43 | 1.46 | 1.50 | 1.54 |
| **MDBA component[a]** | | | | |
| Border | 0.22 | 0.22 | 0.22 | 0.22 |
| Gwydir | 0.22 | 0.22 | 0.22 | 0.22 |
| Namoi | 0.22 | 0.22 | 0.22 | 0.22 |
| Peel | 0.22 | 0.22 | 0.22 | 0.22 |
| Lachlan | 0.11 | 0.11 | 0.11 | 0.11 |
| Macquarie | 0.11 | 0.11 | 0.11 | 0.11 |
| Far West | 0.33 | 0.33 | 0.33 | 0.33 |
| Murray | 0.25 | 0.25 | 0.25 | 0.25 |
| Murrumbidgee | 0.15 | 0.15 | 0.15 | 0.15 |
| **BRC component[b]** | | | | |
| Far West | 0.53 | 0.53 | 0.53 | 0.53 |

**a** MDBA prices will only apply to 9 out of 12 unregulated water sources. That is, 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 10.8 Draft decision on combined charges for unregulated rivers – water take component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.47 | 3.66 | 3.75 | 3.84 | 3.93 | 59% |
| Gwydir | 2.47 | 3.66 | 3.75 | 3.84 | 3.93 | 59% |
| Namoi | 2.47 | 3.66 | 3.75 | 3.84 | 3.93 | 59% |
| Peel | 2.47 | 3.66 | 3.75 | 3.84 | 3.93 | 59% |
| Lachlan | 2.91 | 3.25 | 3.25 | 3.25 | 3.25 | 12% |
| Macquarie | 2.91 | 3.25 | 3.25 | 3.25 | 3.25 | 12% |
| Far West | 2.53 | 2.77 | 2.77 | 2.77 | 2.77 | 10% |
| Murray | 4.21 | 5.27 | 5.40 | 5.52 | 5.66 | 34% |
| Murrumbidgee | 5.81 | 6.31 | 6.46 | 6.62 | 6.78 | 17% |
| North Coast | 4.93 | 5.42 | 5.55 | 5.69 | 5.83 | 18% |
| Hunter | 2.13 | 2.26 | 2.32 | 2.38 | 2.44 | 14% |
| South Coast | 1.49 | 1.43 | 1.46 | 1.50 | 1.54 | 3% |

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

### 10.2.3 Entitlement charges for 1-part tariffs

Following the price movements discussed in the unregulated 2-part tariffs sections, a majority of water sources will face price increases, but at a lower rate. Entitlement charges for 1-part tariffs are the sum of the entitlement charges and the water take charges for 2-part tariffs (see Table 10.9 below).

**Table 10.9 Draft decision on combined charges for unregulated rivers – fixed charges for 1-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 4.78 | 4.60 | 4.71 | 4.82 | 4.93 | 3% |
| Gwydir | 4.78 | 4.60 | 4.71 | 4.82 | 4.93 | 3% |
| Namoi | 4.78 | 4.60 | 4.71 | 4.82 | 4.93 | 3% |
| Peel | 4.78 | 4.60 | 4.71 | 4.82 | 4.93 | 3% |
| Lachlan | 5.60 | 5.46 | 5.46 | 5.46 | 5.46 | -2% |
| Macquarie | 5.60 | 5.46 | 5.46 | 5.46 | 5.46 | -2% |
| Far West | 6.66 | 7.54 | 7.54 | 7.54 | 7.54 | 13% |
| Murray | 6.85 | 7.16 | 7.33 | 7.50 | 7.68 | 12% |
| Murrumbidgee | 9.08 | 9.37 | 9.60 | 9.83 | 10.07 | 11% |
| North Coast | 9.52 | 9.75 | 10.00 | 10.25 | 10.50 | 10% |
| Hunter | 3.43 | 3.51 | 3.60 | 3.69 | 3.78 | 10% |
| South Coast | 3.24 | 3.32 | 3.40 | 3.49 | 3.58 | 10% |

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

## 10.3 Prices for water users in groundwater sources

Our draft decision is:

39 To set the maximum prices listed in Table 10.10, Table 10.11, Table 10.12, Table 10.13 and Table 10.14 for water users in groundwater sources.

Some water sources will face price decreases over the next four years, while others will face price increases.

- For 2-part tariffs, 1 out of 4 groundwater sources will face entitlement price decreases while the remaining 3 water sources will face entitlement price increases. In addition, combined water take prices will decrease for 3 groundwater sources and increase for one groundwater source.
- For 1-part tariffs, 2 out of 4 groundwater sources will face entitlement price decreases while the remaining two water sources will face entitlement price increases.

There are two key drivers of price change: costs allocated to each water source and how we have transitioned these prices towards full cost recovery. For Border and Inland, total prices (entitlement and water take prices) are decreasing because costs allocated to these sources are lower than allocated costs in the 2016 price review. For Murrumbidgee, current 2020-21 prices are below full cost recovery and we have transitioned these prices towards full cost recovery. For Coastal, prices are increasing because the costs we have allocated are higher.

Table 10.10 to Table 10.14 show the entitlement and water take charges for the different groundwater sources in each year of the 2021 determination period.

### 10.3.1 Entitlement charges for 2-part tariffs

Under our draft decisions for groundwater sources, one water sources will experience combined entitlement charge decreases and the remaining three will have combined charge increases.

For the Inland groundwater source, the combined entitlement charges are decreasing mostly because costs allocated to these sources are lower than costs in the 2016 price review. Entitlements have remained relatively stable between the two determination periods. As such, entitlement charges achieve full cost recovery levels from 2021-22 onwards.

For Border groundwater source, the combined entitlement charges are higher than Inland because Border attracts BRC charges.

For Murrumbidgee and Coastal, the WAMC entitlement charges started below full cost recovery in 2021-22 and will increase over the next 4 years toward full cost recovery levels. 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.

**Table 10.10 Draft decision on WAMC, MDBA and BRC component charges for groundwater sources – fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Inland | 3.51 | 3.51 | 3.51 | 3.51 |
| Border | 3.51 | 3.51 | 3.51 | 3.51 |
| Murrumbidgee | 2.97 | 3.05 | 3.12 | 3.20 |
| Coastal | 1.78 | 1.82 | 1.87 | 1.92 |
| **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 water sources. That is, Border, Inland and Murrumbidgee. MDBA prices do not apply to Coastal water sources because this 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 Draft decision on combined charges for groundwater sources – fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Inland | 3.86 | 3.71 | 3.71 | 3.71 | 3.71 | -4% |
| Border | 3.86 | 4.00 | 4.00 | 4.00 | 4.00 | 4% |
| Murrumbidgee | 2.56 | 3.17 | 3.24 | 3.32 | 3.39 | 32% |
| Coastal | 1.76 | 1.78 | 1.82 | 1.87 | 1.92 | 9% |

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

### 10.3.2 Water take charges for 2-part tariffs

Combined water take charges for water users in groundwater sources are decreasing for three water sources over 2020-21 to 2024-25. As discussed in the previous section, costs allocated to groundwater have slightly declined between 2016 and 2021 determination periods. This placed a downward pressure on water take charges.

**Table 10.12 Draft decision on WAMC, MDBA and BRC component charges for groundwater sources – water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Inland | 2.08 | 2.08 | 2.08 | 2.08 |
| Border | 2.08 | 2.08 | 2.08 | 2.08 |
| Murrumbidgee | 1.76 | 1.81 | 1.85 | 1.90 |
| Coastal | 3.40 | 3.49 | 3.57 | 3.66 |
| **MDBA component[a]** | | | | |
| 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[b]** | | | | |
| Border | 0.12 | 0.12 | 0.12 | 0.12 |

**a** MDBA prices will only apply to 3 of 4 groundwater water sources. That is, Border, Inland and Murrumbidgee. MDBA prices do not apply to Coastal water sources because this 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 10.13 Draft decision on combined charges for groundwater sources – water take of 2-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Inland | 3.13 | 2.15 | 2.15 | 2.15 | 2.15 | -31% |
| Border | 3.13 | 2.27 | 2.27 | 2.27 | 2.27 | -27% |
| Murrumbidgee | 2.08 | 1.83 | 1.87 | 1.92 | 1.96 | -5% |
| Coastal | 3.29 | 3.40 | 3.49 | 3.57 | 3.66 | 11% |

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

### 10.3.3 Entitlement charges for 1-part tariffs

Following the price movements discussed in the 2-part tariffs sections, there is also a mix of price movements for 1-part tariff prices. This is because entitlement charges for 1-part tariffs are the sum of the entitlement charges and the water take charges for 2-part tariffs (see Table 10.14 below).

**Table 10.14 Draft decision on combined charges for groundwater sources – fixed charges for 1-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Inland | 6.99 | 5.85 | 5.85 | 5.85 | 5.85 | -16% |
| Border | 6.99 | 6.28 | 6.28 | 6.28 | 6.28 | -10% |
| Murrumbidgee | 4.64 | 4.99 | 5.11 | 5.23 | 5.36 | 15% |
| Coastal | 5.05 | 5.18 | 5.31 | 5.44 | 5.58 | 10% |

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

## 10.4 Prices with floodplain harvesting

Our draft decision is:

40 To set the maximum prices listed in Table 10.15 to Table 10.23 in water sources where the floodplain harvesting framework may rollout.

We have decided to continue to set separate charges for specific water sources to consider the effect of floodplain harvesting (FPH) licences.

While the timing of implementation is unknown, having the provision for FPH licences as a separate pricing schedule will allow the switch to lower charges. The switch will affect all water users of the relevant water sources, not just floodplain harvesting licence holders, during the 2021 determination period.

### 10.4.1 Regulated rivers with FPH

FPH prices may apply to 4 regulated water sources in the 2021 determination period, depending on future Ministerial approval. If FPH was to take effect over the 2021 determination period, Table 10.15 shows entitlement charges that would apply. We note that these charges are very similar to charges under the scenario without FPH (see section 10.1). Only minor changes would occur to the entitlement charge, given the 70:30 fixed-to-variable constraint is applied to the FPH related prices.[31] The material change would happen in water take charges discuss below.

**Table 10.15 Draft decision on WAMC, MDBA and BRC component charges for regulated rivers with FPH– fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Border | 1.63 | 1.63 | 1.63 | 1.63 |
| Gwydir | 1.13 | 1.13 | 1.13 | 1.13 |
| Namoi | 1.67 | 1.67 | 1.67 | 1.67 |
| Macquarie | 1.39 | 1.42 | 1.46 | 1.49 |
| **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 | 1.28 | 1.28 | 1.28 | 1.28 |

**a** MDBA prices will only apply to 8 out of 11 regulated water sources. That is, 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 1 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.

31 The price changes that result from the introduction of FPH will also have an impact on the number of licences subject to the minimum annual charge (MAC). Lower prices result in more licences on the MAC. Therefore, less revenue is required to be recovered from non-MAC licences, and this may have a minor impact on the entitlement charge for a water source.

**Table 10.16 Draft decision on combined charges for regulated rivers with FPH – fixed component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.28 | 3.46 | 3.46 | 3.46 | 3.46 | 52% |
| Gwydir | 1.62 | 1.84 | 1.84 | 1.84 | 1.84 | 13% |
| Namoi | 2.73 | 2.49 | 2.49 | 2.49 | 2.49 | -9% |
| Macquarie | 1.71 | 1.83 | 1.87 | 1.90 | 1.94 | 14% |

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

Table 10.17 and Table 10.18 show the water take charges that would apply for all water users when FPH is implemented. When compared with current 2020-21 prices, water users will face price decreases because of the increases in water take volumes. When compared with water charges under no FPH (see Table 10.4), all charges in Table 10.18 are lower because forecast water take volumes are higher while costs are held constant.

**Table 10.17 Draft decision on WAMC, MDBA and BRC component charges for regulated rivers with FPH– water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Border | 0.98 | 0.98 | 0.98 | 0.98 |
| Gwydir | 0.68 | 0.68 | 0.68 | 0.68 |
| Namoi | 0.93 | 0.93 | 0.93 | 0.93 |
| Macquarie | 1.34 | 1.37 | 1.41 | 1.44 |
| **MDBA component[a]** | | | | |
| Border | 0.19 | 0.19 | 0.19 | 0.19 |
| Gwydir | 0.25 | 0.25 | 0.25 | 0.25 |
| Namoi | 0.28 | 0.28 | 0.28 | 0.28 |
| Macquarie | 0.26 | 0.26 | 0.26 | 0.26 |
| **BRC component[b]** | | | | |
| Border | 0.46 | 0.46 | 0.46 | 0.46 |

**a** MDBA prices will only apply to 8 out of 11 regulated water sources. That is, 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 1 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 10.18 Draft decision on combined charges for regulated rivers with FPH – water take component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 1.78 | 1.63 | 1.63 | 1.63 | 1.63 | -9% |
| Gwydir | 1.40 | 0.93 | 0.93 | 0.93 | 0.93 | -34% |
| Namoi | 1.84 | 1.21 | 1.21 | 1.21 | 1.21 | -34% |
| Macquarie | 1.85 | 1.60 | 1.63 | 1.67 | 1.70 | -8% |

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

### 10.4.2 Unregulated rivers with FPH

Table 10.19 and Table 10.20 show the entitlement charges for unregulated water sources with floodplain harvesting relating to users on a 2-part tariff. These prices would apply to 5 water sources.

When compared with current 2020-21 prices, the entitlement charges are forecast to decrease for 4 out 5 water sources because costs allocated to these sources are lower than costs set in the 2016 price review.

When compared with prices under no FPH (see Table 10.6), the entitlement charges shown in the tables below are higher. This is because of the constraints that 70% of revenue be recovered from entitlement charges and the remainder from water take charges, and that the 1-part tariff be equal to the sum of the 2 components of the 2-part tariff. When FPH is introduced the water take charge will decline, which impacts the level of revenue recovered from both 1-part and 2-part tariffs. The entitlement charge will increase marginally to rebalance revenue recovery between entitlement and water take charges back to the 70/30 ratio.

**Table 10.19 Draft decision on WAMC, MDBA and BRC component charges for unregulated rivers with FPH – fixed component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Border | 1.63 | 1.67 | 1.71 | 1.75 |
| Gwydir | 1.63 | 1.67 | 1.71 | 1.75 |
| Namoi | 1.63 | 1.67 | 1.71 | 1.75 |
| Peel | 1.63 | 1.67 | 1.71 | 1.75 |
| Far West | 2.79 | 2.79 | 2.79 | 2.79 |
| **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 | 0.80 | 0.80 | 0.80 | 0.80 |
| **BRC component[b]** | | | | |
| Far West | 1.30 | 1.30 | 1.30 | 1.30 |

**a** MDBA prices will only apply to 9 out of 12 unregulated water sources. That is, 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 10.20 Draft decision on combined charges for unregulated rivers with FPH – fixed component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.31 | 1.78 | 1.82 | 1.86 | 1.91 | -18% |
| Gwydir | 2.31 | 1.78 | 1.82 | 1.86 | 1.91 | -18% |
| Namoi | 2.31 | 1.78 | 1.82 | 1.86 | 1.91 | -18% |
| Peel | 2.31 | 1.78 | 1.82 | 1.86 | 1.91 | -18% |
| Far West | 4.13 | 4.90 | 4.90 | 4.90 | 4.90 | 19% |

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

Table 10.21 and Table 10.22 show water take charges for unregulated water sources with floodplain harvesting relating to users on a 2-part tariff.

When compared with current 2020-21 prices, water take charges are forecast to decrease for all 5 water sources. This is because costs allocated to these water sources are lower than costs set in the 2016 price review. In addition, the increase in water take volumes as a result of FPH has further placed a downward pressure on prices.

When compared with prices under no FPH (see Table 10.8), the prices shown in the tables below are lower. This is because with the introduction of FPH water take volumes increase while total costs to be recovery do not change. Therefore, the water take charge will decline with the introduction of FPH volumes.

**Table 10.21 Draft decision on WAMC, MDBA and BRC component charges for unregulated rivers with FPH– water take component of 2-part tariff ($/ML, $2020-21)**

| Water source | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|
| **WAMC component** | | | | |
| Border | 1.84 | 1.88 | 1.93 | 1.98 |
| Gwydir | 1.84 | 1.88 | 1.93 | 1.98 |
| Namoi | 1.84 | 1.88 | 1.93 | 1.98 |
| Peel | 1.84 | 1.88 | 1.93 | 1.98 |
| Far West | 1.58 | 1.58 | 1.58 | 1.58 |
| **MDBA component[a]** | | | | |
| Border | 0.10 | 0.10 | 0.10 | 0.10 |
| Gwydir | 0.10 | 0.10 | 0.10 | 0.10 |
| Namoi | 0.10 | 0.10 | 0.10 | 0.10 |
| Peel | 0.10 | 0.10 | 0.10 | 0.10 |
| Far West | 0.27 | 0.27 | 0.27 | 0.27 |
| **BRC component[b]** | | | | |
| Far West | 0.43 | 0.43 | 0.43 | 0.43 |

**a** MDBA prices will only apply to 9 out of 12 unregulated water sources. That is, 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 10.22 Draft decision on combined charges for unregulated rivers with FPH – water take component of two-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 2.47 | 1.94 | 1.98 | 2.03 | 2.08 | -16% |
| Gwydir | 2.47 | 1.94 | 1.98 | 2.03 | 2.08 | -16% |
| Namoi | 2.47 | 1.94 | 1.98 | 2.03 | 2.08 | -16% |
| Peel | 2.47 | 1.94 | 1.98 | 2.03 | 2.08 | -16% |
| Far West | 2.53 | 2.28 | 2.28 | 2.28 | 2.28 | -10% |

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

Table 10.23 shows our decision on entitlement prices for unregulated water sources with floodplain harvesting on a 1-part tariff. The prices are lower than current 2020-21 prices because of lower costs allocated to these water sources and the effect of higher water take volumes as a result of FPH.

**Table 10.23 Draft decision on combined charges for unregulated rivers – fixed charges for 1-part tariff ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Border | 4.78 | 3.72 | 3.81 | 3.89 | 3.99 | -17% |
| Gwydir | 4.78 | 3.72 | 3.81 | 3.89 | 3.99 | -17% |
| Namoi | 4.78 | 3.72 | 3.81 | 3.89 | 3.99 | -17% |
| Peel | 4.78 | 3.72 | 3.81 | 3.89 | 3.99 | -17% |
| Far West | 6.66 | 7.18 | 7.18 | 7.18 | 7.18 | 8% |

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

## 10.5 Minimum annual charge

Our draft decision is:

41 To set the minimum annual charges listed in Table 10.24.

In Chapter 9, we discussed our draft decision is to transition the minimum annual charge (MAC) to full cost recovery at a rate of 2.5% per year in real terms or 10% over the next 4 years. This price levels for the MAC are shown in the table below.

**Table 10.24 Draft decision on – Minimum annual charge ($2020-21)**

| Water source - All | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change from current |
|---|---|---|---|---|---|---|
| Minimum annual charge | 213.74 | 219.09 | 224.56 | 230.18 | 235.93 | 10% |

## 10.6 Separate price for Water NSW (South Coast unregulated river)

Our draft decision is:

42 To set the separate price for Water NSW (South Coast unregulated river) listed in Table 10.25.

In Chapter 9, we outlined our decision to continue to set a separate price for Water NSW to recover the specific costs to metropolitan water planning (MWP) for the Greater Sydney region. The costs of MWP will be recovered from Water NSW via 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.

In Chapter 3, we discussed our draft decision on water planning costs. Over the 2021 determination period, MWP costs are lower than 2016 costs. Therefore, the separate price for Water NSW is decreasing from $0.91 in 2020-21 to $0.40 in 2021-22 and onwards (see Table 10.25).

**Table 10.25Draft decision – special entitlement charge for Water NSW ($/ML, $2020-21)**

| Water source | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change |
|---|---|---|---|---|---|---|
| South Coast | 0.91 | 0.40 | 0.40 | 0.40 | 0.40 | -56% |

# 11 Impacts

## Summary of our impact analysis

**Bills will increase for most water users in 2021-22**

- For regulated water sources, typical bills for most water sources increase by up to $300 in 2021-22. However, in Border, bills rise by around $670. In Namoi, bills decrease by around $200.
- For unregulated water sources, typical annual bills increase by up to $400 for 5 water sources and decrease by up to $330 for the remaining 7 water sources.
- For groundwater sources, typical annual bills in the Border and Inland regions decrease by up to $400 for those on a 2-part tariff. In the Murrumbidgee and Coastal regions, they increase by around $250 and $50 respectively, for those on a 2-part tariff.
- For small water users paying the minimum annual charge (MAC), their bills will increase by less than $50. For water users closer to the MAC threshold, their bills will increase more because of MDBA and BRC charges.

**We consider our draft prices are reasonable**

- We found that WAMC bills represents a small proportion of total bills that regulated water users pay.
- We determined that our combined draft prices for WAMC regulated water users and for Water NSW rural bulk water customers account for up to 11% of farming businesses' gross value of irrigated agricultural production.
- Our draft prices are relatively low compared with market values determined through the water trading market.

**We consider that WAMC will be able to meet its environmental obligations**

- This means WAMC can fully recover all efficient costs to meet its environmental obligations through prices and government contributions.

**WAMC's prices are not full cost-reflective, and it will require NSW Government contributions**

- Under our draft decisions, prices and bills will be lower for most (but not all) water users compared with WAMC's proposal.
- Further, the NSW Government contributions would be lower compared to WAMC's proposal.

Before finalising our draft decisions, we considered the impact of our maximum prices on water users and WAMC. We also considered our prices in the context of matters listed in section 15 of the IPART Act (see Appendix A). Each of these issues is discussed in turn in the sections below.

The impact analysis excludes the impact of fee-for-service such as consent transactions and metering services, which are discussed on chapters 12 and 13 respectively.

## 11.1 Bills will increase for the majority of water users

Our draft 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 have analysed a range of scenarios across all water sources and different water users to assess the differential impact of our prices against current 2020-21 prices. Specifically, we analysed the impact of our draft prices on:

- the typical water user on 2-part tariffs not subject to the MAC and has 500ML of entitlements at 60% usage
- the typical water user on 1-part tariff not subject to the MAC and has 500ML of entitlements
- water users that are subjected to the MAC
- the typical water user affected by the new floodplain harvesting framework and has 500ML of entitlements
- Water NSW as a licence holder in the South Coast unregulated water source, and
- the typical water user that pays WAMC 2-part tariffs and Water NSW rural bulk water charges, with 500ML of entitlements and 60% usage of entitlements.

This chapter presents our findings on bill impacts in $2020-21. This is to show the impact of our draft decisions on prices and customer bills over the 2021 determination period compared to prices and customer bills in 2020-21.

### 11.1.1 Impact on 2-part tariff water users not on the minimum annual charge

To analyse the bill impacts of our decisions, we have defined a typical 2-part tariff water user as having 500ML of entitlements and an annual water usage rate of 60%.

Our analysis shows that in 2021-22, the typical annual bill will be higher for 17 out of 27 water sources compared with 2020-21 bills:

- For regulated water sources, the typical annual bill will increase by less than $100 for 5 water sources and more than $100 for 5 water sources in 2021-22 (see Table 6.3). Border will have the highest typical bill increase at $670. Meanwhile, the typical annual bill for Namoi is forecast to decrease by $200 over the same period.

- For unregulated water sources, the typical annual bill for 7 out of 12 water sources will decrease by up to $330 in 2021-22 (see Table 11.2). In addition, 3 water sources will face increases of up to $50 in their typical annual bill and 2 water sources will face increases of up to $400. Far West will have the highest increase in typical annual bill by around $400.
- For groundwater sources, typical annual bills in the Border and Inland regions will decrease by up to $400. In the Murrumbidgee and Coastal regions, they increase by around $250 and $50 respectively (see Table 11.3).

**Table 11.1 Forecast typical bill for water users on 2-part tariff in regulated water sources ($2021-22)**

| Water source | 2020-21 (Current) *(A)* | 2021-22 *(B)* | 2022-23 | 2023-24 | 2024-25 *(C)* | $ change from A to B | % change from A to C |
|---|---|---|---|---|---|---|---|
| Border | 1,674 | 2,344 | 2,344 | 2,344 | 2,344 | 669 | 40% |
| Gwydir | 1,233 | 1,364 | 1,364 | 1,364 | 1,364 | 131 | 11% |
| Namoi | 1,917 | 1,715 | 1,715 | 1,715 | 1,715 | -202 | -11% |
| Peel | 2,762 | 3,060 | 3,131 | 3,205 | 3,280 | 298 | 19% |
| Lachlan | 1,293 | 1,335 | 1,362 | 1,389 | 1,418 | 41 | 10% |
| Macquarie | 1,408 | 1,473 | 1,502 | 1,531 | 1,562 | 64 | 11% |
| Murray | 1,099 | 1,186 | 1,206 | 1,226 | 1,247 | 87 | 13% |
| Murrumbidgee | 989 | 1,090 | 1,107 | 1,125 | 1,143 | 102 | 16% |
| North Coast | 3,819 | 3,958 | 4,057 | 4,158 | 4,262 | 139 | 12% |
| Hunter | 2,204 | 2,258 | 2,314 | 2,372 | 2,431 | 54 | 10% |
| South Coast | 3,267 | 3,350 | 3,434 | 3,520 | 3,608 | 83 | 10% |

**Source:** IPART analysis

Key drivers of bill increases in 2021-22 for regulated water sources are higher allocated costs and how we have transitioned some of the prices towards full cost recovery.

**Table 11.2 Forecast typical bill for water users on 2-part tariff in unregulated water sources ($2021-22)**

| Water source | 2020-21 (Current) *(A)* | 2021-22 *(B)* | 2022-23 | 2023-24 | 2024-25 *(C)* | $ change from A to B | % change from A to C |
|---|---|---|---|---|---|---|---|
| Border | 1,896 | 1,568 | 1,605 | 1,642 | 1,681 | -327 | -11% |
| Gwydir | 1,896 | 1,568 | 1,605 | 1,642 | 1,681 | -327 | -11% |
| Namoi | 1,896 | 1,568 | 1,605 | 1,642 | 1,681 | -327 | -11% |
| Peel | 1,896 | 1,568 | 1,605 | 1,642 | 1,681 | -327 | -11% |
| Lachlan | 2,219 | 2,082 | 2,082 | 2,082 | 2,082 | -137 | -6% |
| Macquarie | 2,219 | 2,082 | 2,082 | 2,082 | 2,082 | -137 | -6% |
| Far West | 2,822 | 3,216 | 3,216 | 3,216 | 3,216 | 394 | 14% |
| Murray | 2,582 | 2,525 | 2,584 | 2,645 | 2,707 | -57 | 5% |
| Murrumbidgee | 3,379 | 3,423 | 3,506 | 3,591 | 3,678 | 44 | 9% |
| North Coast | 3,773 | 3,794 | 3,889 | 3,986 | 4,085 | 21 | 8% |
| Hunter | 1,288 | 1,305 | 1,337 | 1,371 | 1,405 | 16 | 9% |
| South Coast | 1,322 | 1,374 | 1,409 | 1,444 | 1,480 | 52 | 12% |

**Source:** IPART analysis

Bills are decreasing in Border, Gwydir, Namoi, Peel, Lachlan, Macquarie and Murray unregulated water sources. In Chapter 10, we showed how entitlement charges for these water sources are decreasing while water take charges are increasing.

**Table 11.3 Forecast typical bill for water users on 2-part tariff in groundwater sources ($2021-22)**

| Water source | 2020-21 (Current) *(A)* | 2021-22 *(B)* | 2022-23 | 2023-24 | 2024-25 *(C)* | $ change from A to B | % change from A to C |
|---|---|---|---|---|---|---|---|
| Inland | 2,871 | 2,497 | 2,497 | 2,497 | 2,497 | -373 | -13% |
| Border | 2,871 | 2,684 | 2,684 | 2,684 | 2,684 | -187 | -6% |
| Murrumbidgee | 1,905 | 2,132 | 2,182 | 2,234 | 2,286 | 226 | 20% |
| Coastal | 1,868 | 1,910 | 1,957 | 2,006 | 2,057 | 41 | 10% |

**Source:** IPART analysis

The key driver of bill decreases in 2021-22 for Inland and Border is lower costs allocated to these water sources compared with costs in the 2016 price review. Meanwhile, bills are increasing for Murrumbidgee and Coastal because we are transitioning these prices towards full cost recovery over the next 4 years.

### 11.1.2 Impact on 1-part tariff water users not on the minimum annual charge

To analyse the bill impacts of our decisions, we have defined a typical 1-part tariff water user as having 500ML of entitlements.

Our analysis shows that in 2021-22 the typical annual bill will be lower for 8 out of 16 water sources compared with 2020-21 bills:

- For unregulated water sources, the typical annual bill for 6 out of 12 water sources will decrease by up to $90 in 2021-22 (see Table 14.5). In addition, 5 water sources will face increases of up to $155 in their typical annual bill. Far West will have the highest increase in typical annual bill, at around $440.
- For groundwater sources, the typical annual bill for Inland and the Border will decrease by up to $600 in 2021-22. The typical annual bill for Coastal and the Murrumbidgee will increase by up to $180 (see Table 11.5).

**Table 11.4 Forecast typical bill for water users on 1-part tariff in unregulated water sources ($2021-22)**

| Water source | 2020-21 (Current) *(A)* | 2021-22 *(B)* | 2022-23 | 2023-24 | 2024-25 *(C)* | $ change A to B | % change A to C |
|---|---|---|---|---|---|---|---|
| Border | 2,390 | 2,301 | 2,355 | 2,410 | 2,467 | -88 | 3% |
| Gwydir | 2,390 | 2,301 | 2,355 | 2,410 | 2,467 | -88 | 3% |
| Namoi | 2,390 | 2,301 | 2,355 | 2,410 | 2,467 | -88 | 3% |
| Peel | 2,390 | 2,301 | 2,355 | 2,410 | 2,467 | -88 | 3% |
| Lachlan | 2,801 | 2,732 | 2,732 | 2,732 | 2,732 | -69 | -2% |
| Macquarie | 2,801 | 2,732 | 2,732 | 2,732 | 2,732 | -69 | -2% |
| Far West | 3,329 | 3,771 | 3,771 | 3,771 | 3,771 | 442 | 13% |
| Murray | 3,423 | 3,579 | 3,663 | 3,750 | 3,839 | 155 | 12% |
| Murrumbidgee | 4,542 | 4,684 | 4,798 | 4,915 | 5,034 | 143 | 11% |
| North Coast | 4,758 | 4,877 | 4,999 | 5,124 | 5,252 | 119 | 10% |
| Hunter | 1,714 | 1,757 | 1,801 | 1,846 | 1,892 | 43 | 10% |
| South Coast | 1,619 | 1,660 | 1,701 | 1,744 | 1,788 | 40 | 10% |

**Source:** IPART analysis

**Table 11.5 Forecast typical bill for water users on 1-part tariff in groundwater sources ($2021-22)**

| Water source | 2020-21 (Current) *(A)* | 2021-22 *(B)* | 2022-23 | 2023-24 | 2024-25 *(C)* | $ change from A to B | % change from A to C |
|---|---|---|---|---|---|---|---|
| Inland | 3,497 | 2,927 | 2,927 | 2,927 | 2,927 | -570 | -16% |
| Border | 3,497 | 3,139 | 3,139 | 3,139 | 3,139 | -358 | -10% |
| Murrumbidgee | 2,321 | 2,497 | 2,557 | 2,617 | 2,679 | 176 | 15% |
| Coastal | 2,527 | 2,590 | 2,655 | 2,721 | 2,789 | 63 | 10% |

**Source:** IPART analysis

### 11.1.3 Impact on water users paying the minimum annual charge

In Chapter 9, we discussed our draft decisions to unbundle the existing prices and ensure all water users are paying a fair share of MDBA and BRC costs. As a result of this, small water users that are currently paying the MAC will be paying MDBA and BRC charges in the future.

To analyse the annual bill impacts of our decisions on water users on MAC, we have defined two types of water users:

- a very small water user that has 5ML of entitlements and 3ML of water take, and
- a small water user that has entitlements and water take close to the threshold of the minimum annual charge.

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 minimum annual charge to either 1-part tariffs or 2-part tariffs.

Based on these scenarios, we have observed the following bill movements from 2020-21 to 2024-25 period:

- 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 $22 (mostly coastal water sources) to $35 (Border regulated water source) (see Table 11.6).
- For small water users close to the threshold, we estimate the changes in bills are higher than very small users and still varied between water sources – from a bill increase of $22 (coastal water sources) to $140 (Border regulated water source) (see Table 11.7).
- When comparing bill movements between very small water users 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. This means they would be paying more MDBA and BRC charges.

**Table 11.6 Forecast bill for very small water users ($2021-22)**

| Water source | 2020-21 MAC | 2024-25 MAC | 2024-25 MDBA Bill | 2024-25 BRC Bill | Total 2024-25 Bill | $ change 20-21 to 24-25 | % change 20-21 to 24-25 |
|---|---|---|---|---|---|---|---|
| **Regulated water sources** | | | | | | | |
| Border | 213.74 | 235.93 | 3.45 | 8.15 | **247.53** | 33.79 | 16% |
| Gwydir | 213.74 | 235.93 | 4.78 | - | **240.71** | 26.97 | 13% |
| Namoi | 213.74 | 235.93 | 5.18 | - | **241.11** | 27.37 | 13% |
| Peel | 213.74 | 235.93 | 1.93 | - | **237.86** | 24.12 | 11% |
| Lachlan | 213.74 | 235.93 | 2.56 | - | **238.49** | 24.74 | 12% |
| Macquarie | 213.74 | 235.93 | 3.13 | - | **239.06** | 25.32 | 12% |
| Murray | 213.74 | 235.93 | 3.92 | - | **239.85** | 26.11 | 12% |
| Murrumbidgee | 213.74 | 235.93 | 4.06 | - | **239.99** | 26.25 | 12% |
| North Coast | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| Hunter | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| South Coast | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| **Unregulated water sources** | | | | | | | |
| Border | 213.74 | 235.93 | 1.10 | - | **237.03** | 23.29 | 11% |
| Gwydir | 213.74 | 235.93 | 1.10 | - | **237.03** | 23.29 | 11% |
| Namoi | 213.74 | 235.93 | 1.10 | - | **237.03** | 23.29 | 11% |
| Peel | 213.74 | 235.93 | 1.10 | - | **237.03** | 23.29 | 11% |
| Lachlan | 213.74 | 235.93 | 0.96 | - | **236.89** | 23.15 | 11% |
| Macquarie | 213.74 | 235.93 | 0.96 | - | **236.89** | 23.15 | 11% |
| Far West | 213.74 | 235.93 | 4.91 | 7.96 | **248.81** | 35.07 | 16% |
| Murray | 213.74 | 235.93 | 1.50 | - | **237.43** | 23.68 | 11% |
| Murrumbidgee | 213.74 | 235.93 | 1.08 | - | **237.01** | 23.27 | 11% |
| North Coast | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| Hunter | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| South Coast | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| **Groundwater sources** | | | | | | | |
| Inland | 213.74 | 235.93 | 1.17 | - | **237.10** | 23.36 | 11% |
| Border | 213.74 | 235.93 | 1.17 | 1.87 | **238.97** | 25.23 | 12% |
| Murrumbidgee | 213.74 | 235.93 | 1.17 | - | **237.10** | 23.36 | 11% |
| Coastal | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |

**Note:** The MDBA and BRC bills are based on the threshold entitlements and allocations. **Source:** IPART analysis

**Table 11.7 Forecast bill for small water users ($2021-22)**

| Water source | A | B | 2020-21 MAC | 2024-25 MAC | 2024-25 MDBA Bill | 2024-25 BRC Bill | Total 2024-25 Bill | $ change 20-21 to 24-25 | % change 20-21 to 24-25 |
|---|---|---|---|---|---|---|---|---|---|
| **Regulated water sources** | | | | | | | | | |
| Border | 50 | 30 | 213.74 | 235.93 | 34.73 | 82.07 | **352.73** | 138.99 | 65% |
| Gwydir | 86 | 52 | 213.74 | 235.93 | 82.59 | - | **318.52** | 104.78 | 49% |
| Namoi | 69 | 41 | 213.74 | 235.93 | 71.24 | - | **307.17** | 93.43 | 44% |
| Peel | 36 | 22 | 213.74 | 235.93 | 13.90 | - | **249.83** | 36.09 | 17% |
| Lachlan | 83 | 50 | 213.74 | 235.93 | 42.53 | - | **278.46** | 64.71 | 30% |
| Macquarie | 76 | 45 | 213.74 | 235.93 | 47.28 | - | **283.21** | 69.47 | 33% |
| Murray | 95 | 57 | 213.74 | 235.93 | 74.14 | - | **310.08** | 96.33 | 45% |
| Murrumbidgee | 103 | 62 | 213.74 | 235.93 | 83.80 | - | **319.73** | 105.99 | 50% |
| North Coast | 28 | 17 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| Hunter | 49 | 29 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| South Coast | 33 | 20 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| **Unregulated water sources** | | | | | | | | | |
| Border | 70 | 42 | 213.74 | 235.93 | 15.43 | - | **251.36** | 37.62 | 18% |
| Gwydir | 70 | 42 | 213.74 | 235.93 | 15.43 | - | **251.36** | 37.62 | 18% |
| Namoi | 70 | 42 | 213.74 | 235.93 | 15.43 | - | **251.36** | 37.62 | 18% |
| Peel | 70 | 42 | 213.74 | 235.93 | 15.43 | - | **251.36** | 37.62 | 18% |
| Lachlan | 57 | 34 | 213.74 | 235.93 | 10.84 | - | **246.77** | 33.03 | 15% |
| Macquarie | 57 | 34 | 213.74 | 235.93 | 10.84 | - | **246.77** | 33.03 | 15% |
| Far West | 37 | 22 | 213.74 | 235.93 | 36.05 | 58.43 | **330.41** | 116.66 | 55% |
| Murray | 44 | 26 | 213.74 | 235.93 | 13.03 | - | **248.97** | 35.22 | 16% |
| Murrumbidgee | 32 | 19 | 213.74 | 235.93 | 6.91 | - | **242.85** | 29.10 | 14% |
| North Coast | 29 | 17 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| Hunter | 84 | 50 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| South Coast | 80 | 48 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |
| **Groundwater sources** | | | | | | | | | |
| Inland | 47 | 28 | 213.74 | 235.93 | 11.06 | - | **246.99** | 33.24 | 16% |
| Border | 44 | 26 | 213.74 | 235.93 | 11.06 | 16.40 | **263.39** | 49.65 | 23% |
| Murrumbidgee | 52 | 31 | 213.74 | 235.93 | 12.08 | - | **248.01** | 34.26 | 16% |
| Coastal | 57 | 34 | 213.74 | 235.93 | - | - | **235.93** | 22.19 | 10% |

**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 minimum annual charge to either 1-part tariffs or 2-part tariffs.

**B** This column refers to the estimated allocation in 2024-25.

**Note:** The MDBA and BRC bills are calculated using the threshold entitlements and water take volumes.

**Source:** IPART analysis

### 11.1.4 Impact of the new floodplain harvesting (FPH) charges

In Chapter 10, we presented the prices when FPH takes effect over the 2021 determination period. Our analysis below shows that the introduction of FPH will reduce typical bills.

As shown in Table 11.8, a user with a typical annual bill in a water source with floodplain harvesting would be better off by around 24% to 43% over the 2021 determination period.

**Table 11.8 Impact of IPART's decision on WAMC's charges with floodplain harvesting (FPH) on non-FPH typical bills ($2021-22)**

| Water source | Current | No FPH | | With FPH | | Impact of FPH | |
|---|---|---|---|---|---|---|---|
| | 2020-21 | 2021-22 | 2024-25 | 2021-22 | 2024-25 | 2021-22 | 2024-25 |
| **Regulated** | | | | | | | |
| Border | 1,674 | 2,344 | 2,344 | 1,731 | 1,731 | -26% | -26% |
| Gwydir | 1,233 | 1,364 | 1,364 | 922 | 922 | -32% | -32% |
| Namoi | 1,917 | 1,715 | 1,715 | 1,244 | 1,244 | -27% | -27% |
| Macquarie | 1,408 | 1,473 | 1,562 | 918 | 971 | -38% | -38% |
| **Unregulated** | | | | | | | |
| Border | 1,896 | 1,568 | 1,681 | 891 | 954 | -43% | -43% |
| Far West | 3,086 | 3,216 | 3,216 | 2,451 | 2,451 | -24% | -24% |

**Source:** IPART analysis.

### 11.1.5 Impact on Water NSW in the South Coast (unregulated) water source

We have 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. 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 that they were monopoly services and efficient (see Chapters 2 and 9).

In Chapter 10, we discussed how the separate entitlement charge would decrease from $0.91 in 2020-21 to $0.40 to 2021-22 onwards. As a result, Water NSW's combined entitlement charge is decreasing from $2.66 to $2.44 by 2024-25. Overall, we estimate Water NSW's bill would decrease from around $3.5 million to $3.3 million (or 5%) between 2020-21 and 2024-25, as summarised in Table 11.9 below.

**Table 11.9 Estimate of Water NSW's bill ($2020-21)**

| | 2020-21 (Current) | 2021-22 | 2022-23 | 2023-24 | 2024-25 | % change |
|---|---|---|---|---|---|---|
| Entitlement charge – for water planning costs ($/ML) | 0.91 | 0.40 | 0.40 | 0.40 | 0.40 | -56% |
| Entitlement charge ($/ML) | 1.75 | 1.89 | 1.94 | 1.99 | 2.04 | 16% |
| Water take charge ($/ML) | 1.49 | 1.43 | 1.46 | 1.50 | 1.54 | 3% |
| | | | | | | |
| Entitlements ('000, ML) | 987.0 | 987.0 | 987.0 | 987.0 | 987.0 | |
| Water take ('000, ML) | 581.5 | 581.5 | 581.5 | 581.5 | 581.5 | |
| **Total bill ($million)** | 3.5 | 3.1 | 3.2 | 3.2 | 3.3 | -5% |

**Source:** IPART analysis.

## 11.2 We consider our draft prices and bills are reasonable

Stakeholder submissions to our Issues Paper indicated that WAMC's proposed prices and bills are unaffordable for customers, given an extended period of very low water allocations. Stakeholders also identified that:

- COVID-19 has impacted on economic conditionscxxv
- the proposed bill increases are well above CPIcxxvi
- customers are also affected by increases in Water NSW rural bulk water charges.cxxvii

While majority of the bill impacts under our draft prices are lower compared with WAMC's proposal, we recognise stakeholders' concerns about the affordability of the increases.

To address these concerns, we assessed the reasonableness of our draft prices by first considering the total bills water users are paying for in regulated water sources – i.e. the combination of bills from WAMC water management charges and bills from Water NSW's rural bulk water charges.

We also assessed the reasonableness of our combined draft prices by considering:

- the impact on farming businesses' gross value of irrigated agricultural production (GVIAP)
- the market values for allocations and entitlements traded on the water market over the 2019-20 period.

We found out that WAMC bills represent a small proportion of total bills that regulated water users pay.

We then considered the impact of combined Water NSW rural bulk water and WAMC charges on farming businesses. We determined that under our draft prices for WAMC and Water NSW rural, total bills will account for up to 11% of farming businesses' GVIAP, though this varies between different types of farming businesses due to differences in commodity prices and water application rates. For example, we found that for the average cotton farm with high security entitlements, the total bill will represent up to 4% of the business's GVIAP, and for the average cotton farm with general security entitlements, the total bill will represent up to 3% of the business's GVIAP.

In addition, we compared our total draft prices with prices paid for allocations and entitlements in the water market. We found that our total draft usage prices are relatively low compared with the historical average for allocations traded on the water market, which is between $100 and $200 per ML, and the present value of our draft entitlement prices are also lower than prices for entitlements traded on the water market.

Based on these results, we consider that our draft prices for WAMC are reasonable. The following sections present more details on our findings.

### 11.2.1 We found that WAMC contributes a smaller proportion to the combined WAMC and Water NSW rural bills for regulated water users

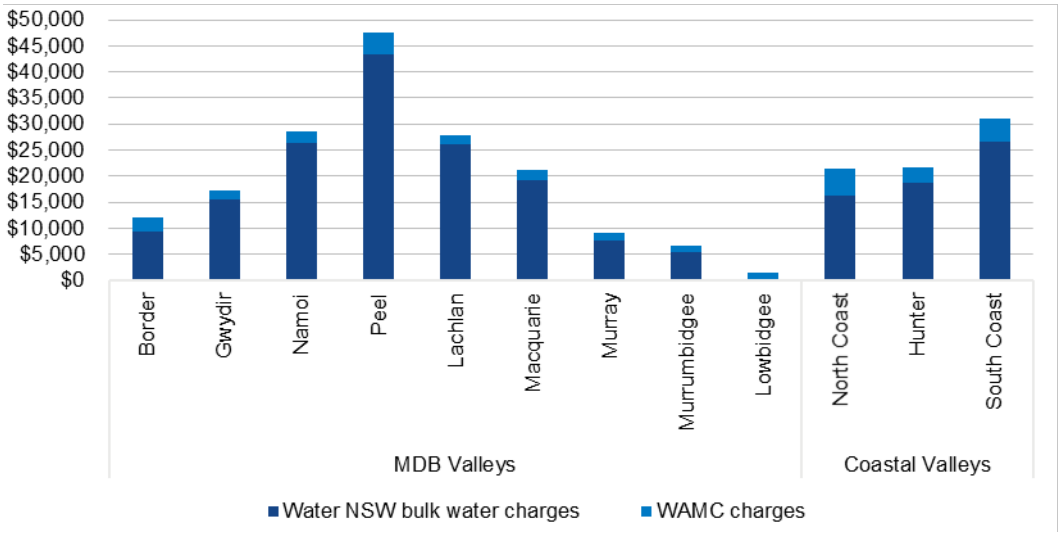
We recognise that all Water NSW rural bulk water customers also pay for water management charges determined by IPART's review of water management prices. These charges are set out in our Draft Report on the Review of Water Management prices from 2021, which is available from IPART's website.

Figure 11.1 and Figure 11.2 present the combined WAMC bill and Water NSW rural bulk water bill for each regulated water source. We have presented them for the typical high security and general security entitlement holders.[32]

Our analysis shows that WAMC water management charges contribute a smaller proportion to the total bill compared with Water NSW's bulk water charges. The WAMC bill component represents around 7-25% of the total bill for high security customers and 12-60% of the total bill for general security customers.

In section 11.1, we discussed that water users in the Border regulated water source will face the biggest WAMC bill increase. From a combined WAMC and Water NSW rural bill perspective, we note that the increase in WAMC bills will represent a relatively small portion of the overall bills for Border regulated water users.

**Figure 11.1 Typical high security bill – WAMC charges and Water NSW rural bulk water charges ($2021-22)**

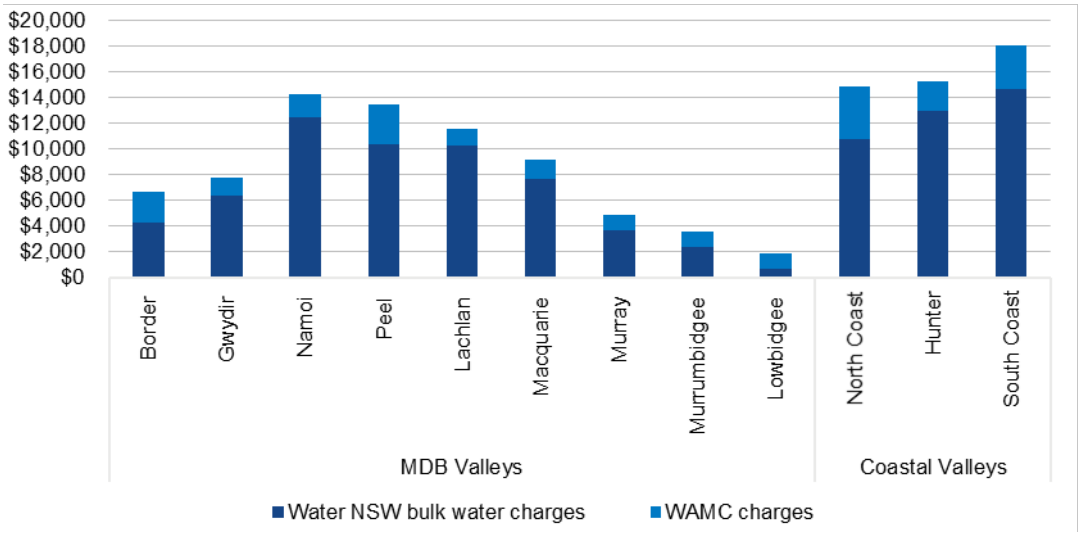



**Note:** Our analysis is based on the typical high security customer with 500ML of entitlements and 100% usage of entitlements.

**Data source:** IPART analysis.

32 In our concurrent review of Water NSW's rural bulk water charges, we identify two types of customers: those who hold a high security water entitlements or general security water entitlements.

**Figure 11.2 Typical general security bill – WAMC charges and Water NSW rural bulk water charges ($2021-22)**




**Note:** Our analysis is based on the typical high security customer with 500ML of entitlements and 60% usage of entitlements.

**Data source:** IPART analysis.

### 11.2.2 We found that our draft prices will not have a significant adverse impact on farming businesses'

To assess the impact of total bills (based on our total draft prices) on farming businesses, we used information published by the ABS to estimate indicative bills as a percentage of GVIAP for different types of farming businesses. We found that:

- For the typical high security entitlement holder with 500ML of entitlements and 100% usage of entitlements, their indicative total bill in 2021-22 would account for up to 9% of GVIAP.[33] However, this varies between the types of farming businesses due to differences in commodity prices and water application rates. For example, for the average cotton farm, the total bill will represent up to 4% of the business' GVIAP.
- For the typical general security entitlement holder with 500ML of entitlements and 60% usage of entitlements, their indicative total bill in 2021-22 would account for up to 11% of GVIAP. Specifically, for the average cotton farm, the total bill will represent up to 3% of the business' GVIAP.

These percentages likely overstate the impact on farming businesses' GVIAP, as the analysis assumes all water used for irrigation is obtained from regulated rivers, whereas in reality, water can also be taken from other sources such as on-farm water infrastructure.

We also considered information published in the 2019 Australian Cotton Comparative Analysis report. Box 11.1 presents the results of our analysis of this report.

33 Includes Water NSW rural bulk water charges and WAMC water management charges.

**Box 11.1 Analysis of cotton-growing valleys**

The following table shows water charges and purchases expenses as a percentage of income, based on 2019 data, for the average farm in different cotton-growing valleys.

| | Gwydir | McIntyre/ Barwon | Macquarie | Namoi | Murrumbidgee | All valleys average figures |
|---|---|---|---|---|---|---|
| Income ($) | 7,502 | 6,774 | 6,803 | 5,774 | 6,042 | 6,369 |
| Water charges ($) | 398 | 94 | 1,320 | 837 | 1,955 | 1,275 |
| Water charges as percentage of income (%) | 5% | 1% | 19% | 14% | 32% | 20% |

**Source:** Cotton Research & Development Corporation and Boyce Chartered Accountants, Australian Cotton Comparative Analysis – 2019 Crop, July 2020, p 28.

We note that the results from our analysis of indicative total bills as a percentage of GVIAP are lower than the results presented in Box 11.1. Based on this, we conclude that some farms were willing to pay more to make additional purchases of water through the water market. This is in line with the 2019 Australian Cotton Comparative Analysis report, which states that when water costs start to exceed $100-$150 per ML, cotton growers are taking on production risk with a reduced profit margin.[cxxviii] This suggests that when the price of water on the water market is lower than this price range, it is in the cotton growers' interests to make additional purchases of water to increase profits.

As a result, we consider our draft prices for WAMC and Water NSW rural bulk water services will not have a significant adverse impact on farming businesses' profitability.

### 11.2.3 We found that our draft prices are relatively low compared to the historical prices paid in the water trading market

As part of our assessment of the reasonableness of our draft prices, we reviewed the prices paid for allocations and entitlements in the water trading market. Water reforms, reductions in transaction costs and increases in water scarcity have all contributed to a steady increase in trade in allocations and entitlements since the 1980s.[cxxix]

For our analysis, we considered trades occurring in the Murray and Murrumbidgee valleys, the two water systems with the highest number of trades by volume in NSW.[34, cxxx] For allocation trades over the 2019-20 period, the weighted average price per ML was $638 in the Murray valley, and $551 in the Murrumbidgee valley. These prices are substantially higher than our draft usage charges of $4.46 per ML and $4.80 per ML for the Murray valley and the Murrumbidgee valley respectively.

34 For our analysis, we used volumes and weighted average prices published on DPIE's Trade dashboard.

For entitlement trades over the 2019-20 period, we observed that:

- In the Murray valley, the weighted average price per ML on the water market was $1,747 for general security entitlements, and $7,600 for high security entitlements. For comparison, we have calculated the present value of all future entitlement charges using our annual entitlement charge (based on our draft pricing decisions),[35] and the pre-tax real WACC of 1.9% for MDB valleys as the discount rate. Under this approach, the present value per ML is $345 for a general security entitlement, and $664 for a high security entitlement. Therefore, the present value of entitlement charges is relatively small (i.e. 19% for general security and 8% for high security) compared with the market prices of the entitlements themselves.[36]
- In the Murrumbidgee valley, the weighted average price per ML on the water market was $1,996 for general security entitlements, and $7,530 for high security entitlements. Similarly, we have also calculated the present value of all future entitlement charges using our draft annual entitlement charge, and the pre-tax real WACC of 1.9%. We determined that the present value per ML is $191 for a general security entitlement, and $389 for a high security entitlement. Therefore, the present value of entitlement charges is relatively small (i.e. 9% for general security and 5% for high security) compared with the market price of the entitlements themselves.

We note that allocation prices on the water market are highly dependent on weather conditions, storage levels, and expectations of future rainfall. As a result, higher weighted average prices in 2019-20 may partly reflect drought conditions in recent years. Allocation prices decreased over the first half of 2020 following successive rainfall outlooks indicating a return to wetter than average conditions, and a turnaround in storage levels. This is reflected in the weighted average price for allocations traded over the year-to-date – which is $199 per ML for the Murray valley, and $120 per ML for the Murrumbidgee valley.[37]

Nevertheless, we note that the prices water users pay to Water NSW for rural bulk water services are relatively low compared to the historical average market price for allocations of between $100 and $200 per ML.[cxxxi]

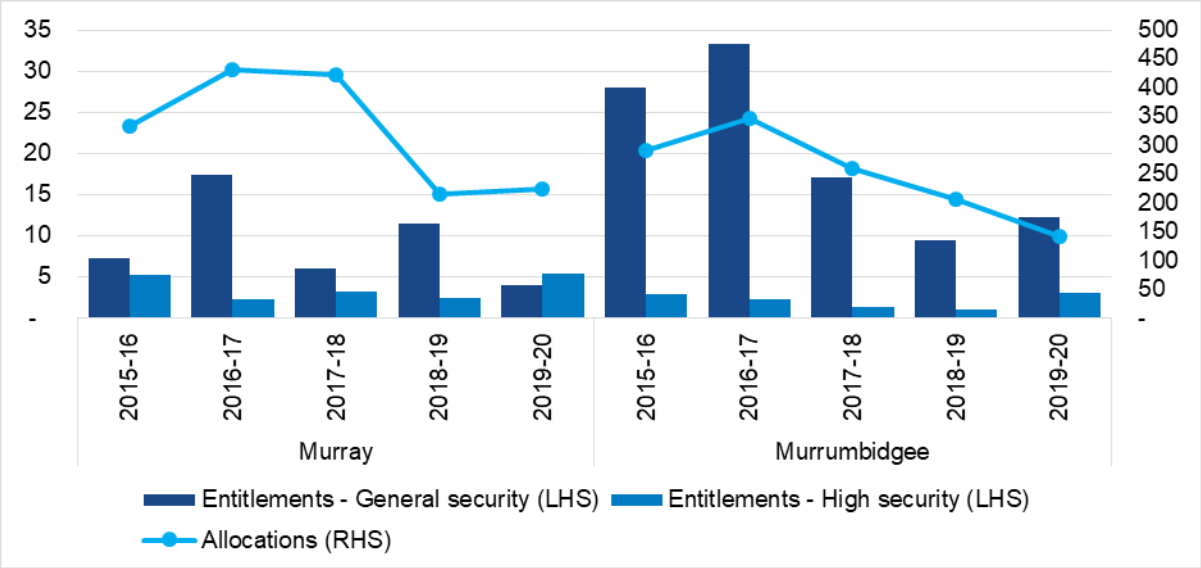
Figure 11.3 shows the volume of entitlements and allocations traded in the Murray and Murrumbidgee valleys, over the period from 2015-16 to 2019-20.

35 Includes Water NSW rural bulk water charges and WAMC water management charges. We have assumed that entitlement charges will remain at the same levels going forward.

36 For example, in making the decision to purchase general security entitlements in the Murray valley on the water market, a water user would consider the cost of the permanent transfer of the entitlement (i.e. $1,747 per ML), as well as the present value of all future entitlement charges (i.e. $345 per ML). Through this comparison, we demonstrate that the present value of all future entitlement charges is small compared with the prices water users are willing to pay for the permanent transfer of entitlements on the water market.

37 Based on data at the time of drafting.

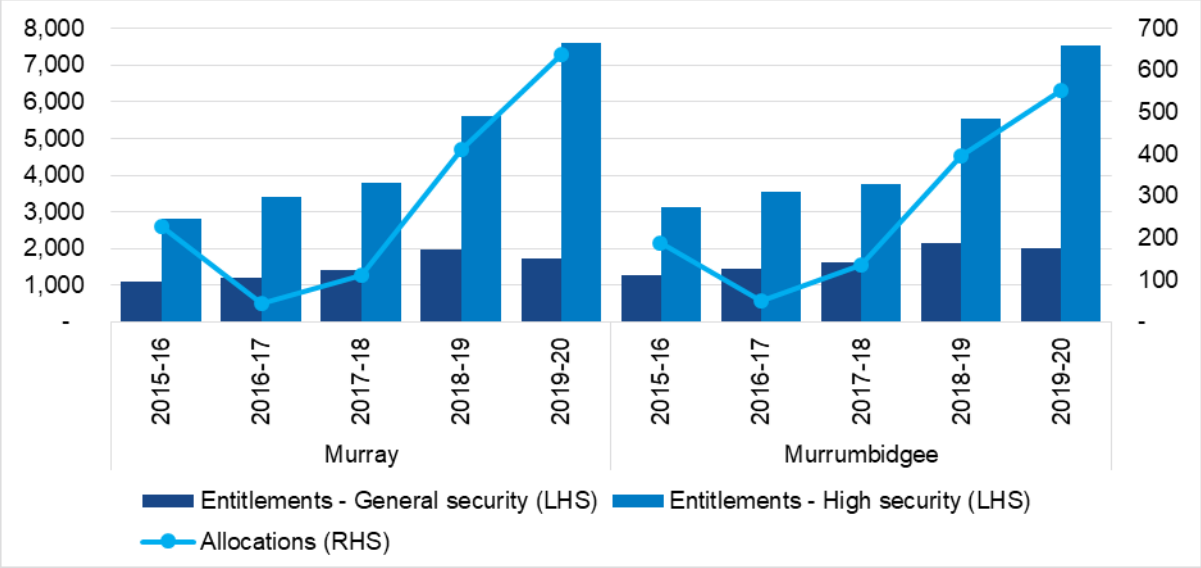
**Figure 11.3 Trade volumes ('000s, ML)**




**Note:** For entitlement trade volumes, refer to the axis on the left-hand side. For allocation trade volumes, refer to the axis on the right-hand side.
**Data source:** DPI.E. Trade dashboard, accessed 24 February 2021.

Figure 11.4 shows the weighted average prices for entitlements and allocations traded in the Murray and Murrumbidgee valleys, over the period from 2015-16 to 2019-20.

**Figure 11.4 Weighted average prices ($ per ML, nominal)**




**Note:** For weighted average prices for entitlements, refer to the axis on the left-hand side. For weighted average prices for allocations, refer to the axis on the right-hand side.
**Data source:** DPIE. Trade dashboard, accessed 24 February 2021.

## 11.3 WAMC will be able to meet its 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* and individual water sharing plans include environmental water management requirements.

In determining WAMC's revenue requirement, we have ensured WAMC can fully recover all efficient costs it incurs in meeting its environmental obligations through prices and 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 have 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. See Chapters 2, 3 and 4 for further details.

## 11.4 WAMC will not have all prices reflecting full of cost recovery levels

In setting our draft prices, we have taken into account the level of cost recovery by WAMC for all water sources. Target revenue as a percentage of the user share of the notional revenue requirement (NRR) is called 'the level of cost recovery'. The shortfall is funded by the NSW Government effectively as a community service obligation (CSO) (discussed in section 11.5).

Table 11.10 summarises the impact of our pricing decisions on the level of cost recovery. This shows that, for those water sources not at full cost recovery, our draft prices will transition towards the full cost recovery, however capped at 2.5% per year from 2021-22 to 2024-25 period. We have done this to achieve a balance between setting prices that recover WAMC's efficient costs and mitigating price impacts on users.

**Table 11.10 Impact of IPART's draft decisions on WAMC's prices on cost recovery levels**

| Water source | Current 2020-21 | IPART 2021-22 | IPART 2024-25 |
|---|---|---|---|
| **Regulated** | | | |
| Border | 100% | 100% | 100% |
| Gwydir | 91% | 100% | 100% |
| Namoi | 100% | 100% | 100% |
| Peel | 78% | 95% | 101%[a] |
| Lachlan | 100% | 77% | 82% |
| Macquarie | 100% | 84% | 89% |
| Murray | 100% | 66% | 71% |
| Murrumbidgee | 99% | 87% | 93% |
| North Coast | 100% | 34% | 36% |
| Hunter | 95% | 89% | 94% |
| South Coast | 100% | 62% | 66% |
| **Unregulated** | | | |
| Border | 100% | 59% | 63% |
| Gwydir | 100% | 59% | 63% |
| Namoi | 100% | 59% | 63% |
| Peel | 100% | 59% | 63% |
| Lachlan | 100% | 100% | 100% |
| Macquarie | 100% | 100% | 100% |
| Far West | 100% | 100% | 100% |
| Murray | 100% | 52% | 56% |
| Murrumbidgee | 100% | 73% | 78% |
| North Coast | 100% | 75% | 80% |
| Hunter | 100% | 72% | 77% |
| South Coast | 100% | 85% | 91% |
| **Groundwater** | | | |
| Inland | 100% | 100% | 100% |
| Murrumbidgee | 68% | 85% | 91% |
| Coastal | 100% | 55% | 59% |

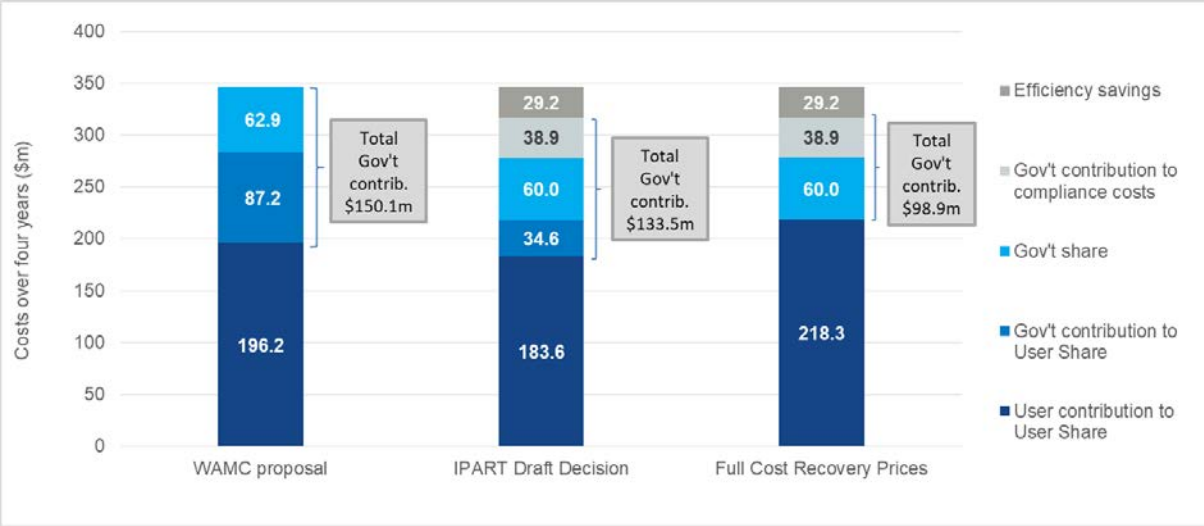
**a** Our draft water management charges for the Regulated Peel water source increase at 2.5% per year over the 2021 determination period. We note that this results in charges for the Regulated Peel water source that are slightly above full cost recovery in year 4 of the determination period (i.e. the increase between year 3 and year 4 should be slightly less than 2.5%). We intend to correct this error in the Final Report.

**Source:** IPART analysis.

## 11.5 NSW Government contributions will be lower

While our draft prices are higher than current levels, we considered that our draft decisions achieve an appropriate balance between the need to transition towards full cost recovery and limiting bill impacts on water users. Under our draft decisions, prices and bills will be lower for most (but not all) water users compared with WAMC's proposal. Further, the NSW Government contributions would be lower compared to WAMC's proposal (see Figure 11.5)

**Figure 11.5 Comparison of NSW Government total contributions under our draft decisions and WAMC's proposal ($ million, $2020-21)**




**Source:** IPART Analysis

# 12 Water consent transaction charges

## Summary of our draft decisions for water consent transaction charges

**WAMC's consent transaction charges are increasing from current 2020-21 charges**

Our draft decision is to set cost-reflective consent transaction charges. This means that for the water users who require these services will pay the full costs of providing these services.

We have accepted WAMC's proposed consent transaction charges subject to a 20% efficiency adjustment. We recognise for most consent transactions, our draft charges are higher than the current 2020-21 charges. This is because the 2016 Determination did not reflect the full costs (and hence charges) required to deliver these services.

We consider WAMC's methodology for developing its consent transaction charges reasonable, however there are considerable efficiencies that can be realised over the 2021 determination period.

While only the users requiring consent transaction services will be impacted by these price increases, we are concerned that none of the WAMC agencies have engaged with customers to test the affordability or willingness to pay for such large increases.

**We have set a new charge for Water Supply (Critical Needs) assessments**

Our draft decision is to accept 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 are known as water consent transactions and they fall into three 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* (NSW)
- **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, and
- **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 draft decisions on WAMC's water consent transactions charges.

## 12.1 WAMC's consent transaction charges are increasing

Our draft decisions are:

43 To maintain our approach of setting cost-reflective consent transaction charges as proposed by WAMC.

44 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 Draft consent transaction charges ($2020-21, per transaction)**

| | 2021-22 to 2024-25 |
|---|---|
| **Type A Consent Transactions** | |
| **New water access licences** | |
| Zero Share | 1,146.10 |
| Controlled allocation | 1,502.46 |
| Specific purpose - Groundwater assessment required | 5,083.85 |
| Specific purpose - No groundwater assessment required | 2,565.75 |
| **Water allocation assignments** | |
| Unregulated rivers and groundwater | 142.24 |
| **Approvals** | |
| Application for a new approval regarding a pump where no advertising is required | 2,390.66 |
| Application for a new approval regarding a pump where advertising is required | 2,924.45 |
| Application for a new approval regarding a dam where no advertising is required | 2,365.58 |
| Application for a new approval regarding a dam where advertising is required - | 2,982.39 |
| Application for a new approval regarding groundwater where neither advertising nor a groundwater assessment is required | 1,931.70 |

| | 2021-22 to 2024-25 |
|---|---|
| Application for a new approval regarding groundwater where advertising is required but a groundwater assessment is not | 2,275.65 |
| Application for a new approval regarding groundwater where a groundwater assessment is required but advertising is not | 4,449.80 |
| Application for a new approval regarding groundwater where both a groundwater assessment and advertising are required | 4,793.74 |
| Amend - Add and change water supply works, add and change water use or changes to conditions - Groundwater assessment not required | 1,481.09 |
| Amend - Add and change water supply works, add and change water use or changes to conditions - Groundwater assessment required | 3,999.18 |
| Amended approval - administrative - Groundwater assessment required | 2,694.04 |
| Amended approval - administrative - Groundwater assessment not required | 175.94 |
| Extension of approval - lodged before expiry date | 350.46 |
| Extension of approval - lodged after expiry date | 647.71 |
| **Type B Consent Transactions** | |
| **New water access licences** | |
| Zero Share | 708.58 |
| Controlled allocation | 689.37 |
| Specific purpose - Groundwater assessment required | 3,237.07 |
| Specific purpose - No groundwater assessment required | 718.98 |
| **Water access licence dealings** | |
| Dealings - regulated rivers | 749.93 |
| Dealings - unregulated rivers and groundwater (All applications except those considered by the processing agency to be low risk or administrative) - Groundwater assessment required | 4,914.18 |
| Dealings - unregulated rivers and groundwater (All applications except those considered by the processing agency to be low risk or administrative) - Groundwater assessment not required | 2,396.09 |
| Dealings - unregulated rivers and groundwater with low risk | 1,085.77 |
| Dealings - unregulated rivers and groundwater - administrative | 479.60 |
| **Water allocation assignments** | |
| Unregulated rivers and groundwater | 50.00 |
| **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) | 6,967.83 |
| 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) | 4,449.73 |
| New or amended works and/or use approval - low risk - Groundwater assessment required | 4,929.09 |
| New or amended works and/or use approval - low risk - Groundwater assessment not required | 2,411.00 |
| New basic rights bore approval - Groundwater assessment required | 1,025.95 |
| New basic rights bore approval - Groundwater assessment not required | 883.55 |
| Amended approval - administrative - Groundwater assessment required | 3,048.70 |
| Amended approval - administrative - Groundwater assessment not required | 530.60 |
| Extension of approval - lodged before expiry date | 510.36 |

| | 2021-22 to 2024-25 |
|---|---|
| Extension of approval - lodged after expiry date | 943.24 |

**Note:** Customers that are currently regulated by NRAR will pay Type A consent transaction charges. All other customers will pay Type B consent transaction charges.
**Source:** Cardno, WAMC *Expenditure Review - Final Report for IPART*, March 2021, Table 9-12, pp 172-173.

For the 2021 determination period, NRAR and Water NSW, on behalf of WAMC, proposed to continue having cost-reflective fee-for-service consent transaction charges.[cxxxii] Our draft decision is to maintain our approach of setting cost reflective consent transaction charges as proposed by WAMC. We have also decided to accept Cardno's recommended consent transaction charges for the 2021 determination period as set out in Table 12.1.

Overall, we made draft decisions to apply a 20% efficiency reduction to WAMC's proposed consent transaction charges. We recognise the majority of our draft consent transaction charges are still higher than 2020-21 charges. This is because the 2016 Determination did not reflect the full costs and charges required to perform consent transaction activities.

Cardno found the methodologies used reasonable, however it was concerned that some key assumptions used to estimate the costs and derive the charges have not been validated. Cardno applied a 20% efficiency adjustment to WAMC's proposed charges. This is to recognise that WAMC's approach to estimating costs is relatively immature.[cxxxiii]

Cardno has identified multiple areas where Water NSW and NRAR could make material improvements to its processes and move towards the efficiency frontier over time. This includes:

- 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.[cxxxiv]

We consider Cardno's recommendation represents the efficient level of expenditure that would be required deliver WAMC's consent transaction services. This is derived from Cardno's review of Water NSW and NRAR's costing approaches used to estimate the costs required to deliver each transaction charge category, the materiality of each charge category, and the forecast annual number of consent transactions for the 2021 determination period. Cardno also conducted some benchmarking of the charges against other jurisdictions.

We recognise our draft decisions on the consent transaction charges will result in significant increases in fees to be paid by customers for these services. We are concerned that 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/balance between cost and service.[cxxxv]

### 12.1.1 We have set a consistent schedule of charges for different customer types

WAMC proposed having separate schedules of consent transaction charges because currently NRAR and Water NSW have different types of customers and different works/ activities (see 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) and 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 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 considers that except for new or amended works approvals where there are material and significantly different costs associated with applications for different water sources, NRAR's proposed changes to the structure of other charge categories adds unnecessary complexity. However, Cardno notes that a different charge should be levied on customers where a groundwater assessment is required.[cxxxvi]

Cardno has adjusted the transaction charge categories to align the transactions undertaken by both WAMC agencies. It has recommended a consistent schedule of charge categories to be applied to all customers.

We accept Cardno's recommended consent transaction charges. Customers that are currently regulated by NRAR will pay Type A consent transaction charges. All other customers will pay Type B consent transaction charges.

## 12.2 We accepted WAMC's proposed Water Supply (Critical Needs) assessment charges subject to a 10% efficiency adjustment

Our draft decision is:

45 To accept WAMC's proposed Water Supply (Critical Needs) Assessment charges subject to a 10% efficiency adjustment. This is set out in Table 12.2.

**Table 12.2 Draft Water Supply (Critical Needs) Assessment charges ($2020-21)**

| Water supply (Critical Needs) assessment | Charge per transaction |
|---|---|
| Stage 1 assessment | 42,305 |
| Stage 2 assessment | 72,828 |

**Source:** Cardno, WAMC *Expenditure Review - Final Report for IPART*, March 2021, Table 9-13, p 174.

In 2019, the *Water Supply (Critical Needs) Act* was passed. This Act allows the Minister to approve critical infrastructure that is urgently needed to prevent a town or locality from running out of water.[cxxxvii] DPIE is required to undertake assessment and approval of applications for infrastructure under this Act. This Act created a new approval process for a small number of water users. WAMC has proposed a new consent transaction charge recoup its efficient costs for providing this service in the 2021 determination period.

Our draft decision is to accept WAMC's proposal to have a new consent transaction charge for Water Supply (Critical Needs) authorisation assessments. Our draft Water Supply (Critical Needs) Assessment charges are presented in Table 12.2. This is based on Cardno's recommendation to accept WAMC's proposed charges subject to a 10% efficiency adjustment.

Cardno reviewed DPIE's costing approach and considers using bottom-up forecasts based on actual costs of existing applications reasonable. However, as this is a new activity and there are only two assessments completed, Cardno considers there is scope for considerable efficiencies that could be realised in future assessments.[cxxxviii] It has recommended an efficiency challenge of 10% be applied to the charges proposed by DPIE.

## 12.3 WAMC will continue reporting its output measures

Consistent with our draft 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 five days to process its transactions and loosening the standards for its consents transactions due to the additional complexity to process its applications and to align with its current processing times. Cardno considers this NRAR's proposal reasonable.[cxxxix] These output measures are discussed in Appendix D.

# 13 Metering charges

## Summary of our draft decisions for metering charges

**We made draft decisions on metering charges based on WAMC's June pricing proposal**

Our draft decision is to set cost-reflective metering charges based on WAMC's June 2020 pricing proposal. In November 2020, WAMC submitted a supplementary pricing proposal to include additional costs of implementing metering reform.

We are still reviewing WAMC's supplementary pricing proposal. Our draft decisions do not include any additional cost or prices from WAMC's November pricing proposal.

**Except for ancillary charges, WAMC's metering charges are remaining constant in real terms**

- Under our draft decisions, meter service and water take assessment charges are remaining constant 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 or 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 cost 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 catergories 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 are reviewing these costs separately and discuss Water NSW's November proposal 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 is also separately reviewing WAMC's November pricing proposal on 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. Our draft charges are presented in real dollars – i.e., prices exclude forecast inflation. We have applied an inflation rate of 2.5% for the first year of the determination period (i.e., 2021-22). IPART's determination sets prices in $2021-22 for four years, from 1 July 2021, and then allows WAMC to adjust these prices by changes in the consumer price index (CPI) from 2022-23 onwards.

Our draft decisions do not include any additional cost or prices from Water NSW's November 2020 pricing proposal.

## 13.1 WAMC's meter service charges will remain constant in real terms

### Our draft decision is

46 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 Draft annual meter service charges ($2020-21)**

| Meter size | Current 2020-21 | Draft decision 2021-22 to 2024-25 | Change from current to draft decision |
|---|---|---|---|
| **Telemetered** | | | |
| 50-300 | $514.31 | $514.31 | 0% |
| 350-700 | $534.41 | $534.41 | 0% |
| 750-1,000 | $580.97 | $580.97 | 0% |
| **Non-telemetered** | | | |
| 50-300 | $403.47 | $403.47 | 0% |
| 350-700 | $419.24 | $419.24 | 0% |
| 750-1,000 | $455.77 | $455.77 | 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.[cxl] Our draft decision is to accept WAMC's proposed meter service charges and structure of these charges.

We consider these charges reflect the relationship between meter charges and meter size (i.e. costs of servicing larger meters are higher compared to smaller meters). It also shows that 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 draft decision is

47 To set WAMC's annual water take assessment charges for the 2021 determination period as shown in Table 13.2.

**Table 13.2 Draft annual water take assessment charges ($2020-21)**

| Charge type | Current 2020-21 | Proposed 2021-22 to 2024-25 | Draft decision 2021-22 to 2024-25 | Change from current to draft decision |
|---|---|---|---|---|
| Water take charge | $207.08 | $416.00 | $207.08 | 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.[cxli] We agree with Cardno's recommendation to not 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 draft decision is

48 To set WAMC's annual ancillary charges for the 2021 determination period as shown in Table 3.4.

**Table 13.3 Draft ancillary charges ($2020-21)**

| Charge type | Current 2020-21 | Draft decision 2021-22 to 2024-25 | Change from current to draft decision |
|---|---|---|---|
| Refundable meter accuracy deposit | $1,871.75 | $1,750.00 | -7% |
| Verification and testing in situ[a] | $256.49 | $4,626.39 + $1,750 deposit | 2,386% |
| Lab verification and testing[a] | $1,871.75 | $6,922.88 + $1,750 deposit | 363% |
| Meter reset fee after suspension of maintenance for a year or more, at customer request[b] | $256.49 + cost of parts | $256.49 + cost of parts | 0% |

**a** This is Water NSW's proposed total charge if meter is found to be within accuracy standards.

**b** WaterNSW 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 does not reflect the full costs of these activities.[cxlii] Our draft decision is to accept WAMC's proposed ancillary charges.

# 14 Non-urban metering reforms

## Summary of our preliminary position on Water NSW's non-urban metering reform proposal

**Water NSW has proposed new prices to implement the NSW's Government non-urban metering reforms.**

In response to the Matthews Report on improving water resource management, the NSW Government has developed new non-urban metering regulations. Water NSW is responsible for implementing components of these reforms.

On 30 November 2020, Water NSW proposed additional costs, prices and bill impacts associated with its plan to implement these reforms. Water NSW is proposing that water users pay the full cost of implementing the metering reforms. Due to the costs involved, this would result in significant bill increases for typical customers in most valleys, particularly those with Government owned meters.

We are seeking stakeholder feedback on Water NSW's proposal, the key issues identified in this chapter as well as any other issues that stakeholders wish to raise.

**We support the NSW Government's comprehensive reforms on metering but Water NSW's proposed implementation program is still at a preliminary stage of development.**

There are clear benefits of metering to improve compliance, monitoring of water use and water resource management. Based on the information provided, we have concerns about whether the proposed costs are efficient. We have significant concerns about the potential impacts of Water NSW's proposal on the water sector, affected communities and the broader economy.

Our preliminary view is that we do not yet have sufficient information to set prices to include Water NSW's proposed metering costs in regulated prices over the upcoming determination period. While we are not yet in a position to determine efficient costs for the new metering policy at this stage, this does not mean we consider Water NSW's efficient costs of implementing the reforms to be zero or that it should not be efficiently implementing the NSW Government's non-urban metering reform policy.

We consider Water NSW should bear the risks and costs associated with its implementation program until it has demonstrated its proposed costs are efficient so they can be included in regulated prices. Water users should not be paying for meter implementation costs that have not been demonstrated to be efficient.

In November, Water NSW submitted a supplementary proposal to include additional metering costs and introduce a new suite of metering charges to implement the NSW Government's non-urban metering reform policy. These proposed costs are in addition to WAMC's and Water NSW's existing metering costs and charges presented in its June pricing proposals.

Our assessment of WAMC's metering charges from its June pricing proposal is presented in Chapter 13. We are reviewing Water NSW's November supplementary pricing proposal separately and have engaged Cardno to review the proposed additional costs and charges.

This chapter sets out and seeks stakeholder feedback on Water NSW's supplementary pricing proposal on additional costs of implementing metering reform, the key issues we have identified with Water NSW's proposal and our preliminary position. We are also seeking stakeholder feedback on several issues we have identified in our preliminary analysis of Water NSW's updated pricing proposal, as well as any other issues related to the price review stakeholders wish to raise.

## 14.1 NSW Government has introduced non-urban metering reforms

In 2017, several independent investigations raised concerns about NSW's water resource management and compliance. The Murray-Darling Basin Water Compliance Review recommended a 'no meter, no pump' policy, with urgent action in high-risk areas to prevent illegal water take.[cxliii] Similarly, the Matthews Report recommended universal metering of water extraction, along with several measures to promote transparency and public access to metering information (e.g. reporting of metered extractions).[cxliv]

In response to these reviews, the NSW Government developed a Water Reform Action Plan, which included a commitment to implementing a robust metering framework.[cxlv] The framework's objectives are to ensure that:

- the vast majority of licensed water take is accurately metered
- meters are accurate, tamper proof and auditable
- undue costs on smaller water users are minimised
- metering requirements are practical and can be implemented effectively.[cxlvi]

The NSW Government's Non-Urban Water Metering Policy specifies several requirements for the metering framework, including:

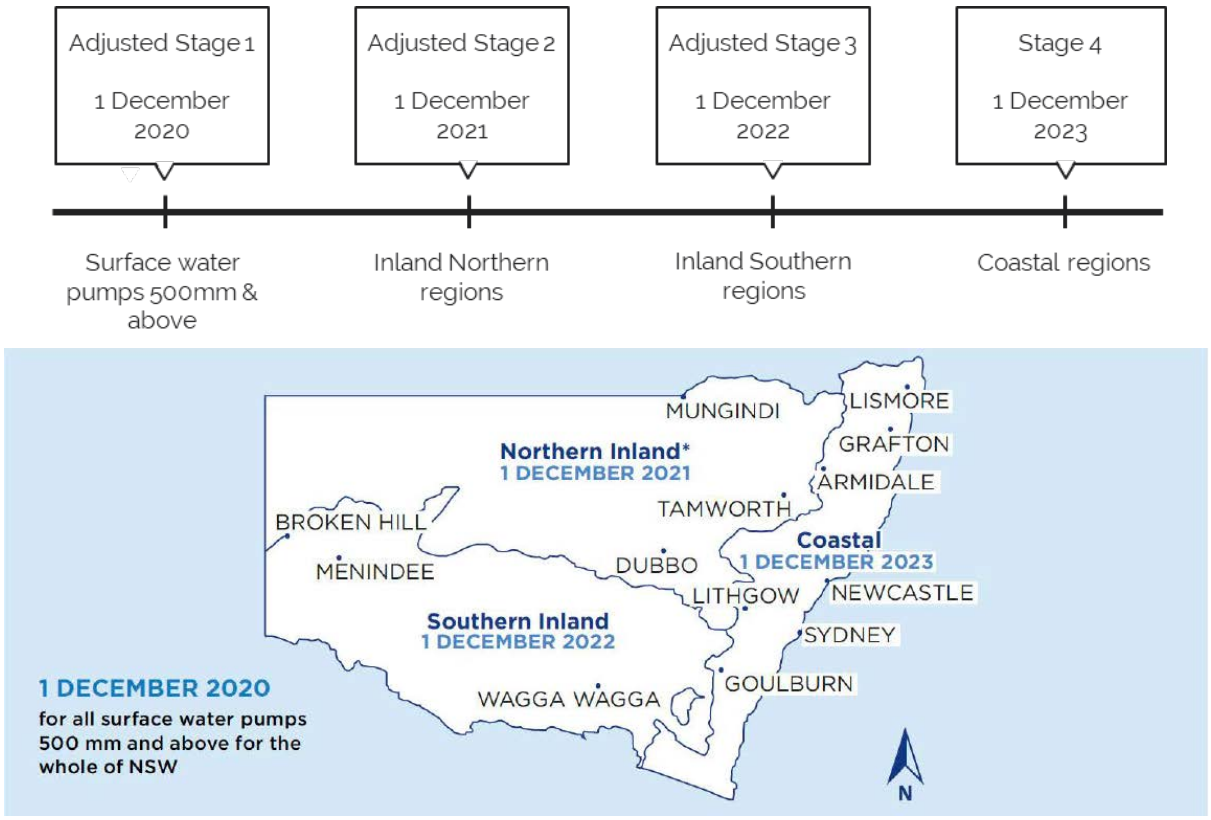
- which works need to have a meter[38]
- the standards metering equipment will need to meet (eg telemetry)
- requirements for record-keeping and reporting.cxlvii

This framework is underpinned by the metering-related provisions in the *Water Management Act 2000* and the *Water Management (General) Regulation 2018.*

38 Works need to have a meter if they are already required to meter or measure; have a pump greater than 100mm (surface water) or bore greater than 200mm (groundwater); have multiple pumps or bores on the same licence, approval or landholding (except pumps or bores below the capacity threshold); or are at risk-ground water sources. See NSW Government, *NSW non-urban water metering policy*, November 2020, p 2.

As shown in Figure 14.1, these reforms are being rolled out in a staged manner over 5 years. Different rollout dates apply to water users depending on their pump size or the area of NSW in which they are located.

**Figure 14.1 Overview of the non-urban metering rollout**




**Source:** NSW Government, Overview of the non-urban water metering framework (accessed March 2021); NSW Government, *Non-urban metering in NSW – what water users need to know*, August 2020, p 4.

In the sections below we discuss Water NSW's proposed new prices to implement these reforms, as well as our preliminary position on Water NSW's proposal.

## 14.2 Water NSW has proposed new prices to implement these reforms

Water NSW is responsible for implementing key parts of the non-urban water metering reforms. Its role spans overseeing meter installations and upgrades across NSW, meter reading and data management for both telemetry and non-telemetry sites,[39] as well as customer education and enquiries (see Box 14.1).[cxlviii]

39 Telemetry meters are those with data recording and remote transmitting of meter data reads to Water NSW's centralised data systems. Non-telemetry meters are those without remote transmitting systems that store meter data on site and require periodic manual data logger downloads. Surface water meters greater than 200mm are required to have telemetry. Water NSW, *Supplementary pricing proposal to IPART*, December 2020, p 10.

### Box 14.1 Water NSW's proposed metering activities

Water NSW anticipates it will perform several key activities as it administers the metering scheme.

- **Meter installation and upgrade** – The metering reforms will require many water users to purchase and install meters. Water NSW will not install or maintain these meters.[cxlix] However, it will need to upgrade its existing government-owned meters (about 12% of the total).
- **Meter certification and compliance** – Water NSW will manage the initial process where meters are certified, as well as the subsequent inspections by Duly Qualified Persons (DQPs)[40] to test meters every 5 years. It will set up a DQP Portal for DQPs to submit the certificates of compliance.[cl]
- **Recording and reporting** – Water NSW will establish a cloud-based Data Acquisition System (DAS) to collect and store data received from telemetry devices on meters.[cli] Where meters do not use telemetry, water users will need to self-report their water extractions to Water NSW. In addition, Water NSW will need to download data from the Local Intelligence Devices (LID) for these meters onsite once per year.[clii]
- **Education and support** – Water NSW plans to develop communication materials to help explain to water users their obligations under the metering reforms. It will also provide support to water users (e.g. dealing with enquiries, site visits).[cliii]

Water NSW has proposed two different charging regimes to cover the costs of undertaking these activities, depending on whether water users have a privately owned or government owned meter:

- **Privately owned meter –** water users own their meter, and will be responsible for the costs of its purchase, installation and upkeep.
- **Government owned meter –** Water NSW owns and maintains the meter, and recovers the costs from water users/customers. Government owned meters are located in the Southern Basin, Hawkesbury-Nepean and Bega regions.[cliv] [41]

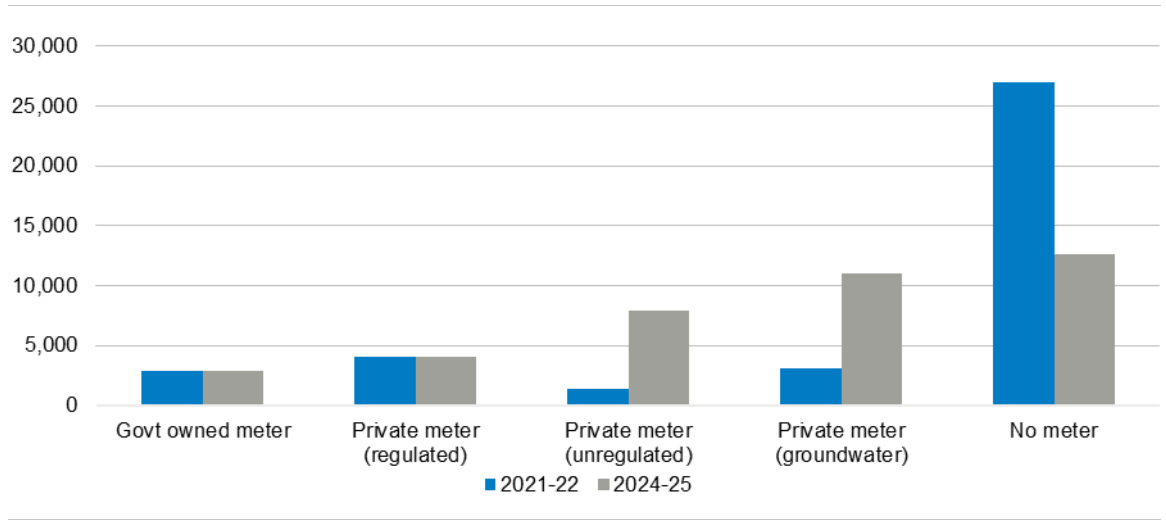
Under both scenarios, all meters subject to the new requirements will still need to meet the same technology, performance and accuracy standards. However, for government owned meters, Water NSW proposes additional charges to recover the capital and operating costs it incurs. Water NSW has stated that Government-owned meters will be limited to those already in place, and will not be extended to any other customers who wish to have a government owned meter.

Figure 14.2 presents the expected number of meters that will be rolled out or made compliant by Water NSW to implement the non-urban metering reform policy.

40 The DQP is a newly created role as part of the metering scheme management program, being a person with the qualifications, skills and experience to carry out work on metering equipment. Water NSW *Supplementary pricing proposal to IPART*, December 2020, p 11.

41 Water NSW states that only water users who have a government owned meter will be eligible to have one under the new framework.

**Figure 14.2 Expected number of meters rolled out to implement metering reforms**




**Source:** IPART analysis, Water NSW, *Supplementary pricing proposal to IPART*, December 2020, pp 10-28 and Cardno, *Review of Water NSW's Metering Reform Costs - Draft Report for IPART*, March 2021, pp 6-9, 13-14.

In relation to the privately owned meters, Water NSW expects around:

- 8,000 existing meters will be maintained. These are mainly located on regulated water sources, largely in the Southern Region.
- 14,700 meters will need to be installed or replaced. These are located on unregulated and groundwater sources, predominantly in the Northern and Coastal Regions.[clv]

Further, Water NSW considers it will need to undertake work on the 2,800 existing government owned meters to make them compliant with the metering reforms.[clvi] These meters are on a mix of regulated, unregulated and groundwater sources.

Table 14.1 provides an overview of Water NSW's proposed charges, and which charges are paid by water users with privately owned or government owned meters.[42]

**Table 14.1 Summary of Water NSW's proposed metering charges ($/year)**

| | Charge ($/year) | Privately owned meter | Government owned meter |
|---|---|---|---|
| Telemetry/non-telemetry charge | 345 | ✓ | ✓ |
| Scheme management charge | 77 | ✓ | ✓ |
| Meter service charge – operating costs | 1,269 | ✗ | ✓ |
| Meter service charge – capital costs | 601 | ✗ | ✓ |
| **Total ($/year)** | | **422** | **2,292** |

**Source:** Water NSW, *Supplementary pricing proposal to IPART*, December 2020, pp 27, 29, 37. Water NSW did not specify in its December 2020 proposal what year dollars the proposed charges are in.

42 For meters subject to the new metering framework. We note that except for meters on sensitive groundwater areas, all meters below 100mm in diameter are exempt from the new requirements and hence these proposed charges.

- **All water users** would pay an annual $77 scheme management charge.[43] Currently meter charges only apply to water users with meters (whether privately owned or government owned), rather than all licence holders.
- **Water users with privately owned meters** would pay the $77 scheme management charge, as well a $345 telemetry/non-telemetry charge.
- **Water users with Government owned meters** would pay the $77 scheme management charge, $345 telemetry/non-telemetry charge and an additional annual meter service charge of $1,870 made up of:
  - Operating costs of maintaining the meters and support systems - $1,269
  - Annualised capital costs of meter and metering equipment - $601.

WAMC already charges a meter service charge (see Chapter 13). Table 14.2 compares the meter charges in Water NSW's June 2020 proposal with IPART's draft decision on these charges, as well as the revised charges in its December 2020 proposal.[44]

**Table 14.2 Meter charges proposed by Water NSW in June 2020 & December 2020 ($/year)**

| Licence holders | Meter charge (proposed by Water NSW in June 2020) | | Meter charges (proposed by Water NSW in December 2020) | | | | |
|---|---|---|---|---|---|---|---|
| | **Water NSW's proposal** | **IPART's draft decision** | **Telemetry /non telemetry** | **Scheme mngt.** | **Meter service – opex** | **Meter service capex** | **Total** |
| | Per meter | Per meter | Per meter | Per licence | Per meter | Per meter | |
| Govt. owned meter | | | | | | | |
| R | 487.82 to 690.03 | Accepted proposal | 345 | 77 | 1,269 | 601 | **2,292** |
| U/G (tel) | 514.31 to 580.97 | Accepted proposal | 345 | 77 | 1,269 | 601 | **2,292** |
| U/G (non-tel) | 403.47 to 455.77 | Accepted proposal | 345 | 77 | 1,269 | 601 | **2,292** |
| Privately owned meter (R/U/G) | 416 | 207.08 | 345 | 77 | 0 | 0 | **422** |
| No meter | 0 | 0 | 0 | 77 | 0 | 0 | **77** |

**Notes:** Under Water NSW's June 2020 proposal, metering charges vary depending on meter size. R = Regulated, U = Unregulated and G = Groundwater. Water NSW did not specify in its December 2020 proposal what year dollars the proposed charges are in.

The meter charges from the June 2020 proposal will be in place until they are replaced by the revised meter charges as the new metering program is phased in.

**Source:** IPART calculations and Cardno, *Review of Water NSW's Metering Reform Costs - Draft Report for IPART*, March 2021, pp 9, 13; Water NSW, *WAMC pricing proposal to IPART*, June 2020, Tables 72 to 74 pp 134-135, and Cardno, *WAMC Expenditure Review* - Final Report to IPART, pp 183-184.

43 This charge is intended to recover a range of scheme costs (e.g. recording and reporting, DAS and DQP portal, general enquiries and education).

44 We have asked for clarification in section 14.4.3 below whether the new metering service charges replace the existing ones, or are in addition to it.

### 14.2.1 Unders and overs mechanism

Water NSW considers there is uncertainty and "an element of stepping into the unknown" with the metering reforms. Therefore, it has proposed we introduce an 'unders and overs' mechanism for the WAMC and Water NSW rural bulk water determinations.[clvii] It considers this will protect customers and Water NSW from any unintended windfall gains or losses associated with forecasting the costs of implementing the reform program.[clviii]

## 14.3 Impacts on water users and Water NSW

The benefits of improved compliance and monitoring of water use are clear. The NSW Government's reforms are comprehensive, and will significantly improve the monitoring and compliance of bulk water usage and water resource management in NSW.

Nonetheless, the overall impacts of Water NSW's metering implementation proposal are potentially far-reaching. Customers and water users who are required to install or upgrade their meter will face higher bills, significantly higher in some cases. Many water users who have not previously required meters will for the first time need to pay for one to be installed, maintained and operated. This adds significantly to the average cost of holding a licence, particularly for holders of smaller entitlements who need to meet the new metering requirements.

At the same time, Water NSW faces significantly higher overall costs in implementing and administering the reforms, with potential risks and uncertainties around costs, timing and technology.

We consider that there are also potentially wider implications of Water NSW's proposed metering charges. Given the relative increase in costs that smaller water users in particular would face, we are interested in whether the costs of metering might lead to broader changes in customer behaviour such as:

- any consolidation of entitlements, as smaller licence holders sell or relinquish their entitlements
- water users down-sizing meters to below 100mm, to avoid meeting the new requirements and costs
- the trade of water out of NSW, as the higher average costs of holding entitlements in NSW makes interstate trades relatively more attractive.

If there were changes such as these, it may impact the scope and scale of Water NSW's metering program and hence its efficient costs.

We discuss the impacts of Water NSW's metering proposal on different stakeholders in the following sections. We are also seeking feedback from stakeholders on some of the key issues the proposal raises.

We consider that the additional costs faced by customers/water users will be significant relative to their existing bills, particularly those with government owned meters. The analysis below considers the bill impacts of metering compared to customers and water users' total bills in 2020-21.

In addition to the costs that Water NSW is proposing, customers and water users who don't have a government owned meter will also be required to purchase a new or replacement meter at their own expense. These costs would be borne by the customer and are not part of Water NSW's proposal.

### 14.3.1 Impacts on customers and water users in regulated rivers

The overall bill impacts arising from Water NSW's proposal on Water NSW rural bulk water customers and WAMC water management charges are significant.

#### Government owned meters

Table 14.3 sets out the overall impact on Water NSW bulk water bills for typical regulated river General Security licence holders with a government owned meter.[45] We note that not all customers in these valleys have a government owned meter.

**Table 14.3 Indicative impact of metering proposal on bills on regulated rivers with government owned meters (nominal, $/year)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Murray | 75 | 1,085 | 1,814 | 157.7% |
| Murrumbidgee | 150 | 1,257 | 1,814 | 144.3% |
| South Coast | 90 | 2,884 | 1,814 | 62.9% |

**a** Includes Water NSW bulk water charges, WAMC charges, MDBA and BRC charges and MSCs.
**b** Net of existing MSC charges.
**Note:** Assumes a 100mm meter.
**Source:** IPART analysis.

These figures show that the impact on a typical customer with a government owned meter is significant. In the Murray and Murrumbidgee valleys, a customer's total bill will more than double. In the South Coast valley, the total impact of the metering reforms is over a 60% increase in indicative bills.

We note that the percentage impacts increase with smaller licence entitlement volumes and usage. 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.

#### Customer owned meters

Table 14.4 sets out the overall impact on Water NSW bulk water bills on typical General Security licence holders in regulated rivers with a government owned meter in each valley.

45 Water NSW states that government-owned meters are present on regulated rivers in the Murray, Murrumbidgee and South Coast valleys.

**Table 14.4 Indicative impact of metering proposal on bills on regulated rivers with customer owned meters ($/year, $2020-21)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Border | 100 | 1,528 | 422 | 40.2% |
| Gwydir | 1,000 | 10,111 | 422 | 4.4% |
| Namoi | 500 | 11,973 | 422 | 3.7% |
| Peel | 100 | 1,914 | 422 | 29.4% |
| Lachlan | 200 | 2,699 | 422 | 19.0% |
| Macquarie | 100 | 1,457 | 422 | 43.1% |
| Murray | 75 | 1,085 | 422 | 69.6% |
| Murrumbidgee | 150 | 1,257 | 422 | 54.2% |
| North Coast | 100 | 2,107 | 422 | 25.9% |
| Hunter | 80 | 2,236 | 422 | 24.0% |
| South Coast | 90 | 2,884 | 422 | 17.5% |

**a** Includes Water NSW bulk water charges, WAMC charges and MDBA and BRC charges.

**b** Net of existing MSC charges.

**Note:** Assumes a 100mm meter.

**Source:** IPART analysis.

These figures show that the impact on a typical customer with a customer owned meter in most valleys is less severe than for government owned meters, but still significant in most cases. However, we note that this is the impact of Water NSW charges only, and as such excludes the customers' own cost of installing, upgrading and maintaining their own meter. So while the figures in this table give an indication of the impacts of water NSW's metering proposal, they do not include the impacts of the customer meeting their obligations under the new metering regulations.

### 14.3.2 Impacts on customers and water users in unregulated rivers

As with regulated rivers, water users on unregulated rivers also face significant increases in WAMC bills.

We note that bill impacts presented here are for a medium user with a 500ML entitlement and 60% water usage.[46] Actual bill impacts for each water user depend on a number of factors including entitlement volumes, usage and whether they currently pay meter charges.

#### Government owned meters

Table 14.5 sets out the overall impact on WAMC bulk water bills on General Security licence holders in unregulated rivers with a Government owned meter.

46 Water users with smaller entitlements on unregulated rivers face a minimum annual charge (MAC) of $213.74. Any water user paying the MAC who has a 100mm government owned meter and is required to comply with the new metering policy would face a bill increase of around 305%.

**Table 14.5 Indicative impact of metering proposal on bills on unregulated rivers with government owned meters ($/year, $2020-21)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Murray | 500 | $2,582 | $1,888 | 63.3% |
| Murrumbidgee | 500 | $3,379 | $1,888 | 49.9% |
| South Coast | 500 | $1,322 | $1,888 | 109.4% |

**a** Includes WAMC charges, MDBA and BRC charges and MSCs.
**b** Net of existing MSC charges.
**Note:** Assumes a 100mm meter.
**Source:** IPART analysis

The impacts on indicative bills for water users with government owned meters in unregulated rivers are significant in all valleys. We also note that we have used a standard entitlement of 500 ML for comparative purposes. Many water users on unregulated rivers hold significantly smaller entitlements and would face higher percentage increases under the new framework.

### Customer owned meters

Table 14.6 sets out the overall impact on WAMC bulk water bills on General Security licence holders in unregulated rivers with a customer owned meter.

**Table 14.6 Indicative impact of metering proposal on bills on unregulated rivers with customer-owned meters ($/year, $2020-21)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Border | 500 | $1,896 | $422 | 22.3% |
| Gwydir | 500 | $1,896 | $422 | 22.3% |
| Namoi | 500 | $1,896 | $422 | 22.3% |
| Peel | 500 | $1,896 | $422 | 22.3% |
| Lachlan | 500 | $2,219 | $422 | 19.0% |
| Macquarie | 500 | $2,219 | $422 | 19.0% |
| Far West | 500 | $2,822 | $422 | 15.0% |
| Murray | 500 | $2,582 | $422 | 16.3% |
| Murrumbidgee | 500 | $3,379 | $422 | 12.5% |
| North Coast | 500 | $3,773 | $422 | 11.2% |
| Hunter | 500 | $1,288 | $422 | 32.8% |
| South Coast | 500 | $1,322 | $422 | 31.9% |

**a** Includes WAMC charges and MDBA and BRC charges.
**b** Net of existing MSC charges.
**Note:** Assumes a 100mm meter.
**Source:** IPART analysis

As with regulated rivers, the impacts of Water NSW's proposed metering charges are significantly lower in unregulated rivers for water users with a customer owned meter. However, this excludes the additional costs incurred by the customer directly in complying with the policy, including the purchase, upgrade and maintenance of the meter.

### 14.3.3 Impacts on customers and water users in groundwater

The impact on groundwater users of the metering reforms are shown below.

#### Government owned meters

Table 14.7 sets out the overall impact on WAMC bulk water bills on groundwater licence holders with a government owned meter.

**Table 14.7 Indicative impact of metering proposal on bills on groundwater with government owned meters ($/year, $2020-21)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Inland | 500 | $3,274 | $1,888 | 57.7% |
| Murrumbidgee | 500 | $2,309 | $1,888 | 81.8% |
| Coastal | 500 | $2,272 | $1,888 | 83.1% |

**a** Includes WAMC charges, MDBA and BRC charges and MSCs.
**b** Net of existing MSC charges.
**Note:** Assumes a 100mm meter.
**Source:** IPART analysis.

As with surface water the impacts are significant for water users with government owned meters on groundwater. The impacts range from 58% in inland sources to 83% in the coastal groundwater region.

#### Customer owned meters

Table 14.8 sets out the overall impact on WAMC bulk water bills on groundwater licence holders with a customer owned meter.

**Table 14.8 Indicative impact of metering proposal on bills on groundwater with customer owned meters ($/year, $2020-21)**

| Valley | ML entitlement | 2021 bill[a] | Additional metering charges[b] | % increase caused by metering |
|---|---|---|---|---|
| Inland | 500 | $2,871 | $422 | 14.7% |
| Murrumbidgee | 500 | $1,905 | $422 | 22.1% |
| Coastal | 500 | $1,868 | $422 | 22.6% |

**a** Includes WAMC charges and MDBA and BRC charges.
**b** Net of existing MSC charges.
**Source:** IPART analysis.

Water users with a customer owned meter will face a less significant increase in Water NSW's proposed charges than those with a government owned meter. However, this excludes the additional costs incurred by the customer directly in complying with the policy, including the purchase, upgrade and maintenance of the meter.

Most groundwater customers will require a meter for the first time. This is particularly the case in coastal regions where Water NSW estimates the existing number of groundwater meters will need to increase from 56 to 2,657.[clix]

### 14.3.4 We are seeking stakeholder feedback on bill impacts

As set out above, the potential impacts on typical customer bills are significant. We are interested in stakeholder feedback on the affordability of the proposed charges and how they will affect licence holders, particularly for smaller volume entitlements.

We seek stakeholder comment on:

2 Do you consider the indicative scheme proposed costs are affordable and what are the impact of proposed bill increases on licence holders?

**Will the metering proposal lead to some consolidation of entitlements?**

Whether on government owned or customer owned meters, water users face significant costs in complying with the new policy. Given the relative scale of the proposed increases in costs for water users, we are interested in any potential flow on effects the metering proposal may have in the bulk water and irrigation sector more generally.

Small volume licence holders who are required to pay the costs proposed by Water NSW will face higher percentage increases in their total bills than those with larger entitlements. The fixed per-meter charges in Water NSW's proposal means the average cost per megalitre of holding and using water will be higher for smaller licence holders.

We are interested in whether this may lead to some consolidation of entitlements in NSW. If small volume water users can obtain greater value by permanently trading their entitlement than paying the ongoing total costs of holding it, it may lead to fewer water users, holding larger entitlements where trading is possible.

We seek stakeholder comment on:

3 Will Water NSW's proposal result in a consolidation of entitlements and fewer licence holders?

### Will the metering proposal lead to water users downsizing their meters?

The metering policy requires all meters of 100mm or greater to comply with the new metering standards and requirements, and as such face the proposed charges and other associated costs.

Water NSW's information shows that the most common size of meters for water users on regulated and unregulated rivers is between 100mm and 149mm.[clx] We are interested in whether there is scope for, or analysis that suggests, downsizing a pump to below 100mm (say) would be a potential outcome of the policy.

While we consider that downsizing works in this manner would incur additional costs on a water user, if the avoided upfront and ongoing costs are significant enough, it may make financial sense to do this if the required flow rates could still be delivered.

If this were the case, it may affect the scale and scope of Water NSW's proposed metering program and hence its overall costs and timing.

We seek stakeholder comment on:

4 Will the metering policy result in some water users downsizing their works to avoid the 100mm meter threshold for the new policy?

### Customers and water users with government owned meters can opt out

Water NSW's MSC for customers and water users with government owned meters means that such customers face significantly higher charges than those with customer owned meters. However, this excludes the private costs of purchase, installation and maintenance associated with customer owned meters, which may be significant.

Water NSW has stated that government-owned meters will be limited to those already in place, and will not be extended to any other customers who wish to have a government owned meter.

Customers and water users who currently have a government owned meter can opt out of the scheme, and switch to a customer owned meter.[clxi] The MSC is based on the total *average* operating and capital costs of making all current government owned meters compliant with the new policy. As customers can opt out, it could lead to a situation where:

- some customers whose cost of meeting the new policy would be significantly lower than the average MSC of $1,870 opt out of the scheme and pay lower costs with a customer owned meter
- Water NSW faces a significant increase in the average costs (and hence the MSC) of administering the government owned meter scheme, as lower-cost customers opt out.

Further, the ability to opt out suggests that customers have a choice about who provides their meter and support services. If this service is contestable, there may be an economic case to not set a maximum charge if customers have a choice of who can provide the metering service.

We seek stakeholder comment on:

5 What are the impacts, if any, on customers and Water NSW if customers with government owned meters choose the opt-out option?

6 If there are other providers who can provide the service, would there be an economic case to not set a regulated price for the MSC?

7 If you have decided or are deciding to opt out of the government owned scheme and own your own meter, please tell us the reasons why you switched or are considering switching.

8 If we do set a regulated maximum price for metering where there are alternative providers, what should we consider to ensure we support efficient outcomes in these situations?

9 What would be the implication for customers, water users and Water NSW if we don't set a regulated price for the MSC for government owned meters?

## 14.4 Water NSW has proposed significant costs to implement metering reforms

Water NSW has proposed significant costs to implement the NSW Government's metering reforms. In this section we discuss Water NSW's proposed costing approach and findings from Cardno's initial review of Water NSW's November supplementary pricing proposal. Water NSW has used a bottom-up approach to derive its metering reform cost estimates. Cardno's initial assessment found that:

- Some key assumptions used to forecast the costs of implementing the metering policy have not been validated by supporting evidence, appear to be overly conservative or inaccurate or are still uncertain.
- Water NSW has not performed sensitivity testing of its assumptions against the proposed expenditure. Cardno performed some sensitivity analysis of Water NSW's cost model and noted that small changes in the assumptions used can have a material impact on the overall costs.
- Water NSW has not assessed the risk and opportunities for its proposed implementation program. Cardno considers a robust implementation program should have good practice risk management. That is, to develop a comprehensive register of risk aligned with its work program and financial assumptions, conduct regular review and identify how these risks can be mitigated. This will ensure its business processes are delivering efficient outcomes.

Detailed analysis of Water NSW's proposed metering scheme management and government owned meter expenditure is summarised below.

### 14.4.1 Metering scheme management costs

Water NSW proposed $35.8 million in operating expenditure for its meter scheme management costs.[clxii] These costs are relevant to the charges to water users with privately owned meters. As shown in Table 14.9, the main drivers are labour costs (e.g. Water NSW staff undertaking field work to download LIDs) and IT licensing fees (e.g. DAS and DQP portal). In addition, Water NSW proposed $2.9 million in capital expenditure for motor vehicles to carry out field work and corporate system to manage meter data.[clxiii]

**Table 14.9 Water NSW's proposed operating expenditure for meter scheme management ($millions, $2020-21)**

| Service | Overview |
|---|---|
| Downloading LID data | 17.9 |
| Operating and maintaining DAS and DQP Portal | 6.2 |
| Managing DQP certificates | 0.7 |
| Customer self-reporting | 6.9 |
| General enquiries and education | 2.8 |
| Other activities (e.g. processing inactive works and faulty meters) | 1.0 |
| **Total** | **35.5** |

**Note:** Water NSW included $35.5 million of operating expenditure in its submission to IPART in December 2020. In subsequent discussions with our consultant, Cardno, Water NSW has revised this operating expenditure to $35.8 million.
**Source:** Water NSW, *Supplementary pricing proposal to IPART*, December 2020, p 22.

Cardno's initial analysis of Water NSW's proposed operating expenditure found that:

- A significant portion of the assumed costs for initial site inspection (18% of total costs) and downloading LID data (31% of total costs) is for staff travel. Water NSW assumes that the costs for travel to the relevant inspection site is greater than the costs required to complete field tasks at the site. Water NSW's assumptions also includes cost estimates for passive tasks such as upload time to enter data into systems. Cardno considers Water NSW's assumptions and cost estimates are likely to be overstated.[clxiv]
- Cardno also raised concerns about a number of Water NSW's assumptions. In particular, Cardno notes Water NSW has not completed any cost benefit analysis of potential alternative approaches or options for delivering its field activities. This may include outsourcing of some tasks to reduce the time and costs required to perform its field activities at remote sites, or consider the likelihood of a larger customer base/ recommending more customers voluntarily installing telemetered meters to avoid the need for regular manual reading and downloading of LID data to lower ongoing meter reading costs.
- The operation and maintenance of DAS data portals (17% of total costs) includes a number of uncertain assumptions. Water NSW's proposal estimates a fixed number of FTE roles will be required to operate and manage these portals. Water NSW expects that it is likely that greater technical support will be required to operate these new systems. However, the required commitments for these roles are still largely unknown, Water NSW is also unclear whether it will source these roles internally or externally.

- While the tasks and inputs required for processing data (21% of total costs) are generally straightforward, Cardno found the outputs are heavily dependent on unsubstantiated assumptions. Cardno is concerned that small changes to the assumptions used for any of the key tasks can potentially have a large impact on the total time required to complete the activity and the corresponding FTEs and salary costs required.

Water NSW's proposed capital expenditure is made up of vehicle costs and costs of its corporate systems. Cardno's initial review of Water NSW's proposed capital expenditure is that these costs are significantly dependent on the accuracy and reliability of its assumptions on the time taken and staff required to conduct site inspections and download LID data. We are concerned that if these assumptions are overstated, the required level of capital expenditure is also likely to be overstated. Cardno also notes that Water NSW has not performed any sensitivity analysis of the proposed expenditure against its key assumptions.

### 14.4.2 Government owned meters

Water NSW proposed costs of $27.0 million to manage government owned meters. This would recover $12.4 million in operating expenditure which Water NSW forecasts it will incur over the 2021 determination period to maintain the government owned meters to a standard that complies with the new metering requirements.[clxv] Water NSW estimates it will cost $14.6 million in capital expenditure to upgrade the existing government meters to the new metering requirements. It proposed the capital charges discussed above to cover these costs.[clxvi]

Water NSW has used a bottom up cost estimate to apply an assumed per meter unit rate for a number of activities multiplied by the number of meters that are required to be made compliant. As discussed above, it appears that Water NSW's proposed costs are only to make existing government meters compliant and does not include the replacement of or installation of new government owned meters.

Cardno's initial analysis of Water NSW's proposed operating expenditure found that:

- It is unclear what is included in the proposed on site-telemetry costs as there is no granular cost build up available (27% of total costs).
- Water NSW has proposed generous allowances for consumables per year per compliant meter (6% of total costs) and these appear to be overstated.
- Water NSW's proposed approach to accuracy testing does not appear to conform to the NSW policy (2% of total costs).
- It is likely that Water NSW has overestimated the forecast costs for resealing meters/LIDs (6% of total costs), cutting back vegetation (3% of total costs), inspecting and diagnosing faulty meters (6% of total costs). [clxvii]

Water NSW's proposed capital expenditure includes a number of activities such as installation of LIDs on existing government meters, validation, excavation and removing of above ground meters, non-patent approved meter replacement, accuracy testing, rectifying damaged meters and scheme administration.

Cardno's initial analysis of Water NSW's proposed capital expenditure found that:

- Installation of LID costs are based on initial quotes from a new vendor which is reasonable, however as this is a new vendor there is a risk that this vendor may not meet the requisite requirements to perform this activity.
- It is unclear what is included in the proposed validation costs as there is no granular cost build up available (22% of total costs)
- The rationale for its assumptions on the number of meters requiring excavation, removal and replacement is unclear (15% of total costs)
- The work activities proposed to be completed to administer the government owned meter program is reasonable and appropriate, however there is no granular cost build up available to support its proposed costs (16% of total costs). Cardno considers these costs appear to be overstated.
- Water NSW's proposed approach to accuracy testing does not appear to conform to the NSW policy (18% of total costs). Cardno notes that it appears that some of the proposed costs are likely to be overstated.
- The basis for Water NSW's formula for estimating the number of damaged meters that need to be rectified (13% of total costs) is unclear. [clxviii]

### 14.4.3 We are seeking stakeholder feedback on Water NSW's proposed costs

Based on the information available and the significant uncertainty associated with Water NSW's assumptions as presented in Cardno's initial analysis, we consider it is difficult to determine the efficient base expenditure to be included in prices.

We are concerned that Water NSW's supplementary pricing proposal does not meet the threshold of being efficient costs. We are mindful of the potentially adverse impact on customers if we allow significant proposed costs that are, or likely to be inefficient, to be passed through regulated prices over the determination period. We consider customers should only be paying for costs which are efficient.

We seek stakeholder comment on:

10 What are your views on Water NSW's proposed costs and our initial assessment of these costs?

## 14.5 Water NSW's proposed pricing structure and who should pay for the revised metering policy

In this section we discuss Water NSW's proposed pricing structure and our preliminary views on who should pay for:

- upgrading government owned meters
- upgrading privately owned meters
- ongoing costs, including metering compliance, recording and reporting.

We consider costs to upgrade and ensure compliance with a new legislative requirement fall under the *Metering and Compliance* activity code which has a 100% user share.

In its November supplementary pricing proposal, Water NSW outlined options it considered before reaching its preferred position to apply a fee based equivalent charge to recover costs from customers.

Water NSW's preferred option is for a separate charge to apply to all customers directly impacted by the metering reform program, represented by:

- a 'telemetry' or a 'non-telemetry charge, based on the meter technology applied to the customer. This charge is applied as an annual fee per metering installation. Water NSW has indicated that this charge would be $345 per meter for both telemetry and non-telemetry meters.
- a 'scheme management' charge, on a per licence basis (licence volume as $/licence). Water NSW have indicated that this charge would be $77 per licence.

Table 14.10 outlines Water NSW's meter reform service charges options summary and its preferred position (Option 3).

**Table 14.10 Water NSW's meter reform service charges option summary**

| Option | Description |
|---|---|
| Option 1 – Fully bundled and socialised | A single 'fully bundled' charge which captures all charging components of the meter reform services.<br>Costs are pro-rated and fully socialised across the Water NSW customer on either a:<br>▼ per entitlement basis (entitlement volume as $/ML), or<br>▼ per licence basis (licence volume as $/licence). |
| Option 2 – Fee based | Two separate charges applied to all customers directly impacted by the metering reform program (i.e. not socialised across the Water NSW customer base), represented by:<br>▼ A 'telemetry' or a 'non-telemetry' charge, based on the meter technology applied to the customer. This charge is applied as an annual $ fee per metering installation.<br>▼ A 'scheme management' charge, on a:<br>– Per entitlement basis (entitlement volume as $/ML), or<br>– Per licence basis (licence volume as $/licence). |
| Option 3 – Fee based (equivalent charge)<br><br>(Water NSW proposed position) | Similar to option 2, a separate charge is applied to all customers directly impacted by the metering reform program, represented by:<br>▼ A 'telemetry' or a 'non-telemetry' charge, based on the meter technology applied to the customer. This charge is applied as an annual $ fee per metering installation.<br>Although separate charges for telemetry and non-telemetry would be established, the annual fees would be the same for the 2021 determination period.<br>▼ A 'scheme management' charge, on a per licence basis (licence volume as $/licence). |
| Option 4 – Socialised (by meter type) | A single 'fully bundled' charge which captures all charging components of the meter reform services.<br>The charge is represented as either a 'telemetry' or a 'non-telemetry' charge, based on the metered technology applied to the customer. |

**Source:** Water NSW, *Supplementary pricing proposal to IPART*, November 2020.

Water NSW's proposal includes two charges it proposes to levy under its equivalent charge methodology:

- **Telemetry or a non-telemetry charge** – Water NSW's preliminary analysis indicated that setting cost-reflective fees would result in a higher telemetry fee compared with the non-telemetry fee. However, it has proposed these fees be set at the same rate. It considers that while the costs of telemetry are higher than non-telemetry in the short term, those costs are likely to come down as more customers have telemetry installed and the costs of technology reduce. As such, it considers having a higher fee would not provide an efficient price signal to water users to adopt telemetry.
- **Scheme management charge** – Water NSW's proposed scheme management charge is intended to recover the wider scheme costs associated with recording and reporting, DAS and DQP portal, general enquiries and education. Water NSW has proposed applying the scheme management charge to all licence holders, rather than to only water users with meters (i.e. it is a per licence, rather than per meter charge). It considers all water users will benefit to some extent from metering reforms, so the total costs should be recovered from licence holders.

The existing charges for government owned meters vary depending on the water source (regulated rivers, un-regulated rivers and groundwater) as well as the meter size. The approach proposed by Water NSW will shift away from this approach in favour of flat fees for government owned meters across water sources and meter sizes.

### 14.5.1 Who should pay for the revised metering policy

As with other costs proposed by Water NSW we will apply our impactor pays framework to assess who should pay for metering policy reforms. This section outlines our preliminary views on who should pay for metering reform.

Our preliminary views are:

- A 'fee-for-service' approach to charge customers directly impacted by works to make their government owned meter compliant may be reasonable. This is consistent with our impactor pays principle because customers who rely on a government owned meter are driving the need for upgrades to make them compliant with the new legislation.
- Ongoing servicing charges for telemetry and non-telemetry meters should reflect the underlying costs of servicing each type of meter, if it is practical to do so. Our preliminary view is also that there are benefits in charging customers variable fees depending on the underlying water source and meter size, if these variables are significant drivers of the underlying costs of installing and servicing each meter type.
- The cost of upgrading privately owned meters should be borne by each individual meter-owner, net of any subsidies offered by the government. This approach would reduce cross-subsidisation by licence-holders that have already installed and maintained a compliant meter.

- Scheme management charges could apply to either individual meter owners or all licence holders. To some extent, all water users are driving the need to improve water resource management – not just those that need to comply with the new policy. However, the primary impactor, i.e., those that are predominantly causing the costs to be incurred are each individual meter owner. We seek stakeholder views on who should pay for scheme management charges.

We seek stakeholder feedback on our preliminary positions. In particular, who should pay for government owned meters and how the costs of the reforms should be shared between water users.

We seek stakeholder comment on:

11 Should scheme management charges for non-urban metering reform apply on a per licence basis (as proposed by Water NSW)?

12 Should the costs associated with installing telemetry and non-telemetry meters be the same?

### 14.5.2 We are uncertain about how Water NSW intends to include these metering charges

As outlined in this chapter, we consider the costs proposed by Water NSW do not meet the threshold of being efficient costs. Our preliminary view is to maintain existing metering charges for Water NSW and WAMC customers over the determination period.

We understand Water NSW proposes to replace the existing metering charges with the revised metering charges based on its updated pricing proposal. If we have sufficient information to establish the efficient costs of the proposed metering reforms, we will consider whether we should transition the existing metering charges to revised charges over the determination period or set prices to apply from 1 July 2021.

We seek your comments on:

13 If we were to set new metering charges, how should we transition between the existing charges to the new charges?

## 14.6 We are seeking stakeholder feedback on other key issues

For this review, we need to decide the efficient level of costs Water NSW will incur in implementing the non-urban metering reforms over the 2021 determination period, who should pay for these costs and in turn, the amount it can recover via prices to customers. We are seeking stakeholder feedback on other key issues we have identified from our review of Water NSW's pricing proposal.

### 14.6.1 We are concerned about whether Water NSW's proposal will effectively achieve the government's metering policy objectives

The Matthews Report identified that a key challenge with implementing reform is translating the government's desired high level reform outcomes into specific and practical measures.[clxix]

As discussed above, we are concerned Water NSW's proposed expenditure may not meet the threshold of efficient costs. The uncertainty of Water NSW's proposed assumptions and costs may create risks to the successful implementation of metering reforms.

We are concerned Water NSW's proposal lacks proper cost-benefit analysis to ensure the implementation program will realise the expected benefits of the policy objectives. It is not clear to us whether the costs of the program, and the proposed charges to water users, have been tested against the NSW Government's technology, accuracy standards and scope of the policy.

We understand that Water NSW has obligations to implement the policy in the timeframes determined by the NSW Government. However, we consider Water NSW has a role to influence efficient outcomes. It should take an active role when putting together its implementation program to reduce uncertainty and provide good value to the NSW Government and water users. Since the metering program is imposing significant costs on water users and customers, we consider Water NSW should have:

- Undertaken appropriate cost-benefit analysis of its proposed implementation program
- Developed a more robust pricing proposal to provide greater assurance of its assumptions
- Assessed the risks and opportunities with its implementation program and identify any mitigation measures required
- Consulted with water users and customers on the proposed costs and impacts including affordability and the balance of how these costs should be recovered
- Provide clarity to water users and customers on what prices they will be required to pay under its proposed implementation program. If customers have a choice about who provides their meter and support services, this should be clearly identified.

We seek stakeholder comment on:

14 Do you consider Water NSW's proposal will effectively achieve the Government's policy objectives for metering reform?

### 14.6.2 We are concerned about whether Water NSW will be able to deliver its proposed implementation program

Generally, if a proposed implementation program does not meet the threshold of efficient costs or ensure the effective delivery of the policy objectives, we would consider there is sufficient grounds to warrant a reassessment of the implementation program against the policy objectives to ensure the expected benefits will be realised. We consider that an effective implementation program should appropriately consider and balance the costs, benefits and risks associated with the program.

We acknowledge the NSW Government has enacted regulations to implement metering in NSW and stage its roll-out over five years. We do not want to further delay the adoption of the new non-urban water metering framework. However, given the amount of uncertainty identified in our initial review of Water NSW's pricing proposal, we are concerned about whether Water NSW will be able to achieve and deliver the metering program to the standard and requirements set out in the metering framework. We also consider there is an opportunity for the NSW Government to provide feedback and scrutinise Water NSW's proposed costs against its policy objectives.

We seek stakeholder comment on:

15 What are potential impacts on the implementation of metering reform if Water NSW's proposal does not meet the metering policy objectives?

## 14.7 Our preliminary position

Since Water NSW has not consulted on the proposed metering reform costs and stakeholders have not had an opportunity to comment on Water NSW's supplementary pricing submission, we do not consider it is appropriate to provide draft decisions and draft prices on Water NSW's proposed additional metering reform costs.

We recognise this means there will not be a formal submission process for stakeholders to provide feedback on our draft prices on the additional costs of metering reforms. However, we are seeking stakeholder feedback on our preliminary position. Stakeholders will also have an opportunity to comprehensively engage with Water NSW on its pricing proposal and our preliminary position at our second public hearing.

We support the NSW Government's comprehensive reforms on metering. However, we consider Water NSW's proposed implementation program is still at a preliminary stage of development. Based on the information provided to date, we are still considering the efficiency of Water NSW's proposed additional metering costs. If we are unable to obtain sufficient information to forecast efficient costs with confidence, we may not set any additional metering charges for this pricing period (in addition to its existing metering charges discussed in Chapter 13) to be included in WAMC and Water NSW's rural bulk water metering charges. This is because:

- It appears the proposed costs have not been developed with sufficient rigour to be considered efficient costs. We found a number of key assumptions used to form the cost estimates are uncertain, potentially overstated and/or have not been tested or validated.
- More work is needed to ensure Water NSW's implementation of these reforms is both effective and efficient. We found Water NSW has not performed sensitivity testing of its assumptions against the proposed expenditure. This means that small changes to some of its key assumptions may potentially have a material impact on the costs required to deliver its metering activities.

- Water NSW does not have a risk register or any mitigation measures to manage its implementation program. Due to the uncertainty over Water NSW's proposed cost assumptions there is a high level of risk that the proposed implementation program will not effectively meet the policy objectives. We consider more work is needed to identify, assess and consult on the potential impacts of Water NSW's proposal on the water sector, affected communities and the broader economy.

We also consider that it is not appropriate for Water NSW to have an 'unders and overs' mechanism to mitigate its financial risks. Water NSW should be completing a robust business case to provide assurance that its proposed costs and prices are efficient, as opposed to retrospectively seeking cost recovery for its actual costs which may potentially be inefficient.

As discussed above, we do not want to further delay the adoption of the Government's non-urban metering framework. Further, not setting draft prices does not mean Water NSW should not implement the NSW Government's non-urban metering reform policy.

We consider Water NSW should bear the risks and costs associated with the implementation of this policy until it has provided sufficient information for us to make decision on efficient costs, so they can be included in regulated prices. Water NSW should be incentivised to prepare robust pricing proposals, develop effective and coordinated long-term water resource planning and conduct effective stakeholder engagement.

We are mindful of the potentially adverse impact on customers if we allow significant proposed costs that are or are likely to be inefficient, to be passed through regulated prices over the determination period. We consider customers should only be paying for costs which are efficient.

We set Water NSW's infrastructure charges in the Murray Darling Basin in line with the WCR. Under the WCR, we are required to set charges so that that the revenue generated from all sources recovers Water NSW's efficient costs of providing infrastructure services over the determination period. While we are not yet in a position to determine efficient costs for the new metering policy at this stage, this does not mean we consider Water NSW's efficient costs of implementing the reforms to be zero.

At this stage, we are still seeking further information on the efficient costs, as well as feedback from customers, water users and other stakeholders. We will ensure that the requirements under the WCR are met when setting prices in our final determination in June 2021, including any charges we set to recover the efficient metering costs.

# Appendix

# A Matters to be considered by IPART

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 of the IPART Act

IPART is required under section 15 of the IPART Act to have regard to the following matters:

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.

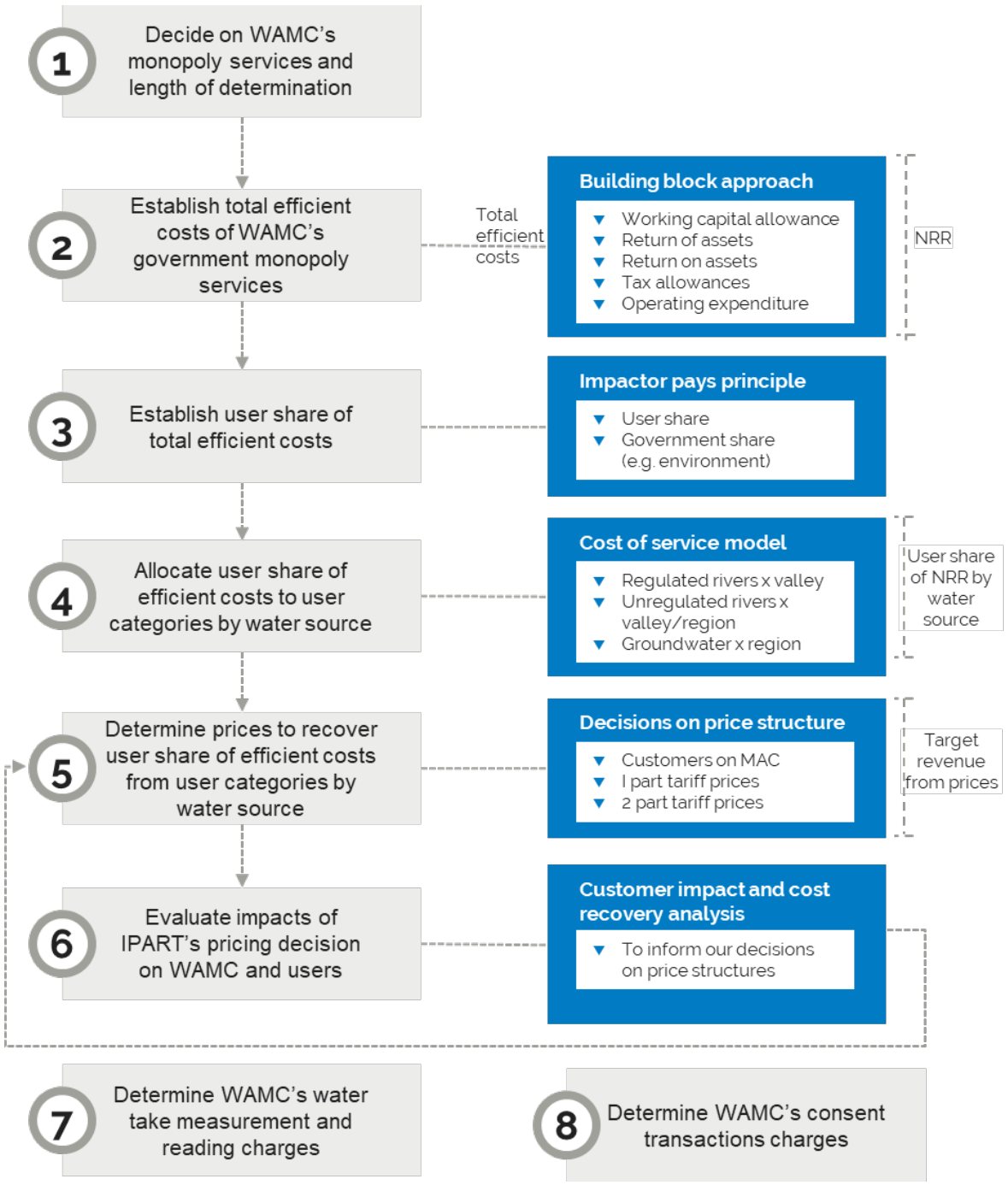
## Table A.1 Consideration of section 15(1) matters by IPART

| Section 15(1) | Report reference |
|---|---|
| a) 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.<br>Chapter 5 sets out MDBA and BRC's total efficient costs allocated to WAMC and its water users. |
| b) Protection of consumers from abuses of monopoly power | We consider our decisions would protect water users from abuses of monopoly power, as they reflect the efficient costs WAMC requires to deliver its monopoly services.<br>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). |
| c) Appropriate rate of return and dividends | Chapter 6 outlines that we have allowed a market-based rate of return on debt and equity which would enable a benchmark business to return an efficient level of dividends. |
| d) 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).<br>While prices and bills for most water users are increasing, we note that 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). |
| e) Need for greater efficiency in the supply of services | Chapters 3, 5 and 11 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. |
| f) 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. |
| g) 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. |
| h) 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 which WAMC has entered into and costs associated with these over the next period. |
| i) 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 Water NSW as set out in Chapter 6). |
| j) 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. Chapter 9 and 10 outline how we have set prices to reflect efficient costs. |
| k) 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). |
| l) Standards of quality, reliability and safety | Chapters 3 to 5 detail our consideration of WAMC's efficient historical and forecast expenditure so that it can meet the required standards of quality, reliability and safety in delivering its services. |

# B Our approach when setting prices for WAMC

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 (see Appendix D).

### 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 DPIE, Water NSW and NRAR, under the *Water Services Order 2004.*

We also decide on the length of the determination period (see Chapter 2).

### Step 2 – establish total efficient costs, or notional revenue requirement (NRR)

Using the **building block approach**, we establish the notional revenue requirement (NRR), or total efficient costs, 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 this chapter. Our evaluation of the building block components is presented in Chapters 5 and 6, with total efficient costs presented in Chapters 3-6.

### Step 3 – establish user share of efficient costs

Total efficient costs are then shared between water entitlement holders ('users') and the Government (on behalf of the broader community), based on the 'impactor pays' principle (see 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 notional revenue requirement).

### Step 4 – allocate user share of efficient costs across water sources

The user share of total efficient costs 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 (see Chapter 7).

### Step 5 – determine water management prices to recover the user share of efficient costs

We set WAMC's water management prices for each water source, to recover the user share of notional revenue requirement allocated to that water source.

We make a series of decisions on the **structure** of water management prices. This includes decisions such as (see Chapter 9):

- geographic differentiation (i.e. defining the geographic boundaries for a common price level to apply)
- tariff structure (1- and 2-part tariffs, including a decision on the relative shares of fixed and variable charges in 2-part tariff revenue), and
- the level of the minimum annual charge (MAC).

To set prices for 1- 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 that revenue raised through water management charges from a water source covers the user share of notional revenue requirement for that water source. Water management charges can be set so that revenue matches the user share of notional revenue requirement in each year of the determination period, or they can be set so that revenue matches the user share of revenue requirements 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 relates to the trajectory of prices over a period, or the 'glide path' of prices (see 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 water management charges is called 'target revenue'.

The share of target revenue as a percentage of the user share of notional revenue requirement 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 (see Chapter 11).

### Step 7 – 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 (see Chapters 13 and 14).

### Step 8 – 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 (see Chapter 12).

# 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 RAB 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 draft decisions on the WACC for WAMC are set out in Chapter 6.

## C.1 We use our standard approach to calculate the WACC

We use 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 that were used to derive the 2.8% 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 | 0.90% | 2.60% | | | |
| Inflation | 2.10% | 2.10% | | | |
| Implied Debt Margin | 1.50% | 2.60% | | | |
| | | | | | |
| Market Risk premium | 8.4% | 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) | 6.8% | 6.8% | | | |
| Cost of equity (real-post tax) | 4.6% | 4.6% | | | |
| | | | | | |
| Cost of debt (nominal pre-tax) | 2.4% | 5.2% | | | |
| Cost of debt (real pre-tax) | 0.3% | 3.0% | | | |
| | | | | | |
| Nominal Vanilla (post-tax nominal) WACC | 4.2% | 5.8% | 4.2% | 5.0% | 5.8% |
| **Post-tax real WACC** | **2.0%** | **3.7%** | **2.0%** | **2.8%** | **3.7%** |
| Pre-tax nominal WACC | 4.9% | 6.6% | 4.9% | 5.8% | 6.6% |
| Pre-tax real WACC point estimate | 2.8% | 4.4% | 2.8% | 3.6% | 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, then we would consider which other industries exhibit returns that are comparably sensitive to market returns.

We propose to adopt 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 December 2020, which at the time of finalising our decision was the latest available whole month of data.[47]. 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 is produced using IPART's standard approach, with the RBA 1-year ahead forecast sourced from the November 2020 Statement of Monetary Policy.[clxx]

### C.2.3 Tax rate

We assume that the Benchmark Equivalent Entity is a large public water utility. The scale economies that are important to firms of this type suggest that the Benchmark Equivalent Entity would be likely to be well above the turnover threshold at which a firm becomes eligible for a reduced corporate income tax rate. Therefore, we use a tax rate of 30%.

### C.2.4 Regulatory period

We adopt a standard 4-year regulatory period for WAMC.

### C.2.5 Application of trailing average method

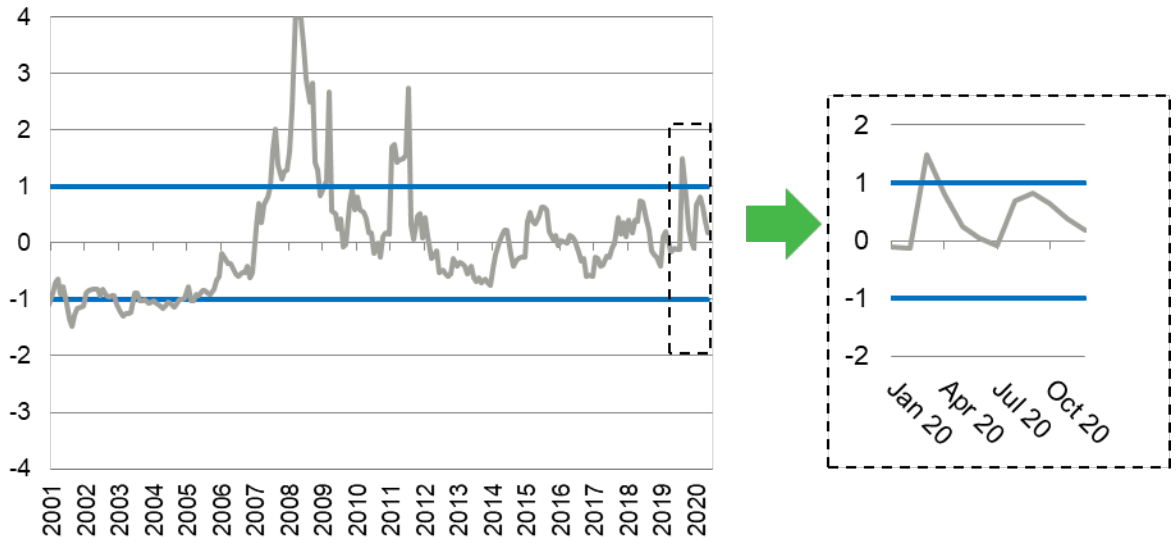
Our 2017 WACC method introduced a decision to estimate both the long-term and current cost of debt using a trailing average approach, which updates the cost of debt annually over the regulatory period. As foreshadowed in our 2017 review of the WACC method, we employ a transition to trailing average in the calculations presented above.

### C.2.6 Uncertainty index

We tested the uncertainty index for market observations to the end of December 2020. It was within the bounds of plus and minus one standard deviation of the long-term mean value of zero. Therefore we maintain the default 50% – 50% weighting between current and historic market estimates of the cost of debt and the cost of equity

47 We intend to update our calculation of the WACC using the latest available data for our Final Report.

**Figure C.1 IPART's uncertainty index**




**Data source:** Refinitiv, Bloomberg and IPART calculations.

# D Output measures

Table D.1 outlines the output measures we have set for WAMC for the 2021 determination period. They were recommended by Cardno, following extensive consultation with DPIE, NRAR and Water NSW.

WAMC should report annually on these output measures. When reporting on its output measures, WAMC should:

- explain how output measures relate to proposed outcomes in the final column of the table below, and its progress in achieving these outcomes, and
- provide its annual report on its output measures to IPART in a form that can be made publicly available on IPART's website.

Further, WAMC should report annually to IPART (in a template to be approved by IPART) on its external funding, by activity. Where timeframes for achievement of output measures or forecasts have not been listed, the forecasts relate to the last year of the 2021 Determination, 2024-25.

## Table D.1 Output measures

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W01-01 - Surface water quantity monitoring | The provision of a surface water quantity monitoring system; including design, station calibration, data collection, processing, encoding, quality assurance and archiving from the networks of water monitoring stations; the delivery of near real time height and/or flow data from all telemetered sites to the corporate database; and the maintenance and operation of surface water monitoring stations. | **Output measure (OM1)**<br>Number of water monitoring sites:<br>Forecast = 437<br>**Performance indicators**<br>Sites in acceptable condition<br>% of replacement cost of monitoring sites in condition grade two or better = 95%<br><br>% of level data with a quality code better than 40 = 95% | Based on long-term water stewardship / Ministerial corporation sites.<br><br>Reporting a condition profile aligns with the management approach for the network. Condition grading based on Water NSW Asset Management systems<br><br>The quality code reflects Water NSW's own quality control processes. Level data is used as a surrogate for overall data performance as it is the key data collected at surface water quantity monitoring site. | A monitoring network in sufficiently good condition to help ensure that its performance meets requirements. |
| W01-02 - Surface water data management and reporting | The data management and reporting of surface water quantity, quality and biological information; including compilation, secure storage, management and publishing of data to customers, stakeholders and the general public. | **Output measure (OM2)**<br>Number of sites subject to data management:<br>Forecast = 437<br>**Performance indicator**<br>% of sites where data is available within three hours = 90% | Based on Long-term water stewardship / Ministerial corporation sites.<br><br>This reflects the current level of service within the network. | Timely provision of data enables faster and improved decision making. |
| W01-03 - Surface water quality monitoring | The provision of a surface water quality monitoring program; including design, sample collection, laboratory testing and analysis, test result quality assurance to accepted standards, and test result encoding to make it available for data management and reporting. | **Output measure (OM3)**<br>Number of sites visited per year to collect water quality samples:<br>Forecast = 125<br>**Output measure (OM4)**<br>Number of tests undertaken per year:<br>Forecast = 26,750<br>**Performance indicator**<br>% compliance against monitoring program requirements = 98% | This quantity is calculated from 125 sites, sampled a minimum of 10 times per year, with 6 field measured analytes plus 17 laboratory measured analytes at coastal sites, or 15 laboratory measured analytes at non-coastal sites.<br><br>It is more meaningful to measure against implementation of the monitoring program rather than test results as the monitoring program is within Water NSW's control. | Assurance that the quality of water is known. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W01-04 - Surface water algal monitoring | The provision of a surface water algal monitoring program; including design, sample collection, laboratory analysis, algal identification and enumeration to accepted standards, and result encoding for provision to regional coordinating committees. | **Output measure (OM5)**<br>Number of tests undertaken per year: Forecast = 10,080<br><br>**Performance indicator**<br>% samples collected and analysed according to current standards and within agreed timeframe = 95% | This quantity is calculated from 70 sites, sampled a minimum of 12 times per year, with 12 analytes reported for each sample. Number of algal tests scalable in response to events.<br>This indicator measures the effectiveness of algal monitoring. | Confidence that the algal monitoring program is providing reliable results. |
| W01-05 Surface water ecological condition monitoring | The provision of a surface water ecological condition monitoring system to assess the health of water sources; including design and application based on the River Condition Index for rivers, flood plains and wetlands. | **Output measure (OM6)**<br>Update of River Styles database undertaken to support WSP development. Measure by number of plans:<br>Output = 50%<br>**Performance indicator**<br>Update of River Styles completed in time for WSP evaluation = 100%<br>**Output measure (OM7)**<br>Update of RCI undertaken to support WSP development. Measure by number of plans:<br>Output = 50%<br>**Performance indicator**<br>Update of RCI completed in time for WSP evaluation = 100%<br><br>**Output measure (OM8)**<br>Update of WaQI undertaken to support WSP development. Measure by number of plans:<br>Output = 50%<br>**Performance indicator**<br>Update of WaQI completed in time for WSP evaluation = 100% | This activity creates spatially enabled products that gradually increase in coverage from one year to the next. Updates and additions to the products are also incremental.<br>It is reasonable to expect that models are maintained annually. The number of scenario tests is not a reliable performance measure and has been dropped.<br>DPIE has provided IPART with a schedule for calculation of output measure percentage and timing of performance indicator. | Regularly updated river condition information that is available online. Information that is available at the same spatial scale as stakeholder interests (i.e. the same scale as water sharing plan management units and landholder properties).<br>Accountability for and stakeholder confidence in evidence-based decision making for optimal resource allocation/sharing. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | **Output measure (OM9)**<br>Coverage of river and groundwater HEVAE extended to coastal WSP areas<br>**Performance indicator**<br>River and groundwater HEVAE extended to cover coastal WSP areas in time for plan evaluation = 100%<br><br>**Output measure (OM10)**<br>Coverage of river and groundwater HEVAE extended to coastal WSP areas<br>**Performance indicator**<br>River and groundwater HEVAE extended to cover coastal WSP areas in time for plan evaluation = 100%<br><br>**Output measure (OM11)**<br>WaQI extended to coastal WSP areas<br>**Performance indicator**<br>WaQI extended to cover coastal WSP areas in time for plan evaluation = 100%<br><br>**Output measure (OM12)**<br>WaQI incorporated into the RCI<br><br>**Output measure (OM13)**<br>River Styles, WaQI, RCI and HEVAE available on DPIE website<br><br>**Output measure (OM14)**<br>Technical reports for HEVAE and WaQI peer reviewed and published on DPIE website. | | |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | **Performance indicator**<br>Technical reports for HEVAE and WaQI updates peer reviewed and published on DPIE website within 3 months of completion = 100% | | |
| W02-01 - Groundwater quantity monitoring | The provision of a groundwater level, pressure and flow monitoring system; including design, site calibration, data collection, entry, audit, quality assurance, archiving, and information provision; and the maintenance and operation of groundwater monitoring bores. | **Output measure (OM15)**<br>Number of water monitoring sites:<br>Forecast = 4,384 (excludes coal seam gas monitoring sites)<br>**Performance indicators**<br>Sites in acceptable condition<br>% of replacement cost of monitoring sites in condition grade two or better = 95%<br>% of level or pressure data with a quality code better than 40 = 95% | Reporting a condition profile aligns with the management approach for the network.<br><br>The quality code reflects Water NSW's own quality control processes. Level or pressure data is used as a surrogate for overall data performance as it is the key data collected. | A monitoring network in sufficiently good condition to help ensure that its performance meets requirements. |
| W02-02 - Groundwater quality monitoring | The provision of a groundwater quality monitoring program; including design, sample collection, laboratory testing and analysis, test result quality assurance to accepted standards, and test result encoding to make it available for data management and reporting. | **Output measure (OM16)**<br>Number of sites visited per year to collect water quality samples:<br>Forecast = 163<br>(excludes coal seam gas monitoring sites)<br>**Output measure (OM17)**<br>Number of samples undertaken per year:<br>Forecast = 360<br>(excludes coal seam gas monitoring sites)<br><br>**Performance indicator**<br>% compliance against monitoring program requirements = 98% | It is more meaningful to measure against implementation of the monitoring program rather than test results as the monitoring program is within Water NSW's control. | Assurance that the quality of water is known. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W02-03 - Groundwater data management and reporting | The data management and reporting of groundwater quantity and quality information; including compilation, secure storage, management and publishing of data to customers, stakeholders and the general public. | **Output measure (OM18)**<br>Number of sites subject to data management:<br>Forecast = 4,384 (excludes coal seam gas monitoring sites)<br>**Performance indicator**<br>% of sites where data is available daily = 90% | This reflects the current level of service within the network | Timely provision of data enables faster and improved decision making. |
| W03-01 - Water take data collection | The electronic and manual collection, transmission and initial recording of water take data from licence holders for unregulated and groundwater sources; and the operation and maintenance of government owned meter and telemetry facilities. | Output measures and performance indicators to be confirmed following review of metering strategy. Suggest:<br>Quantum of meters installed in line with metering strategy implementation<br>Condition profile of meter fleet<br>Data collection from telemetered versus un-telemetered sites<br>Self-reads | | |
| W03-02 Water take data management and reporting | The data management and reporting of water take for unregulated and groundwater sources including compilation, secure storage, management and publishing of data to authorised parties. | Output measures and performance indicators to be confirmed following review of metering strategy | | |
| W04-01 Surface water modelling | The development, upgrade and application of surface water resource management models for use in water planning and to assess performance in terms of statutory requirements, interstate agreements, regional water supply optimisation and third-party impacts on NSW stakeholders. | **Output measure (OM18)**<br>Number of documented model performance reviews during the year:<br>Output = 5 per year<br>**Performance indicator**<br>% models reviewed and reported against accuracy and reliability criteria set out in modelling guidelines = 100%<br><br>**Output measure (OM19)**<br>Number of models updated with an additional year of climate and hydrologic data:<br>Output = 15 per year | The proposed metric reflects that it is reasonable to review all major models once in a five year IPART determination period (cover 19% per year). This could be an internal or external peer review. | Accountability for and stakeholder confidence in evidence-based decision making for optimal resource allocation / sharing. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W04-02 Groundwater modelling | The development, upgrade and use of groundwater resource management models for water sharing and management applications, and for resource impact and balance assessments. | **Output measure (OM20)**<br>Number of documented model performance reviews during the year:<br>Output = 4 per year<br>**Performance indicator**<br>% models meeting accuracy and reliability criteria stipulated by the Australian Groundwater Modelling Guidelines = 100%<br><br>**Output measure (OM21)**<br>Number of models updated with an additional year of climate and hydrologic data:<br>Output = 2 per year | As for surface water.<br><br>Accuracy and reliability parameters are as stipulated by the Australian Groundwater Modelling Guidelines.<br><br>Note that the 22 existing groundwater models are proposed to be consolidated into 8. | As for surface water. |
| W04-03 Water resource accounting | The development and update of water resource accounts and information on NSW water sources, for use by external stakeholders, and for internal water planning, management and evaluation processes. | **Output measure (OM22)**<br>Publication of detailed General Purpose Water Allocation Reports (GPWARs):<br>Output = 9 (covering 11 sources) per year<br>**Performance indicator**<br>GPWARs published within 12 months of the end of the water year = 100%<br><br>**Output measure (OM23)**<br>Reports to meet state and federal compliance reporting obligations.<br><br>**Performance indicator**<br>Environmental Water Register available online with a currency of 1 week:<br>Regulated river: 100%<br>Unregulated river: 60%<br>Groundwater: 95% | GPWARs and the associated data are the cornerstone of water accounting delivery.<br>The environmental water register provides transparency for recovered water use in the basin.<br><br>DPIE has provided IPART with a schedule of expected reports. | Stakeholder confidence in consistent, repeatable and comparable water accounts. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W05-01 Systems operation and water availability management | The preparation and implementation of the procedures and systems required to deliver the provisions of water management plans; and operational oversight to ensure plan compliance, the available water determinations and the assessment of compliance with long term extraction limits. | **Output measure (OM24)**<br>A theme-based WSP implementation program established and published | DPIE needs to demonstrate that WSP are being implemented and are effective in a clear and transparent process.<br><br>This program addresses recommendations from audits / reviews and key stakeholder feedback on NSW WSP implementation. | Sustainable operation and use of water resources.<br>Stakeholders kept updated on WSP implementation progress – improved public confidence and transparency in WSP implementation. |
| | | **Output measure (OM25)**<br>Annual implementation effectiveness reviews completed for each theme and communicated to key stakeholders (Water agencies, MDBA, NRC, Industry and public) through Annual reports and DPIE Water website update. | | |
| | | **Output measure (OM26)**<br>Manage Long Term Average Annual Extraction Limit (LTAAEL) in priority WSPs where it is exceeded<br>Report back:<br>Number of times that there is non-compliance with the long-term average annual extraction limit, as defined in each WSP.<br>i.e. 1, X Water Sharing Plan<br>Output = 0 per year<br><br>**Performance indicator**<br>100% compliance with (LTAAEL) assessed annually for priority water sharing plans in accordance with rules set out in respective WSPs, and AWDs reflect an appropriate reduction in allocations where LTAAEL is exceeded<br>Report back: | Effective LTAAEL implementation enables DPIE Water to assess if diversions from regulated water sources are within WSP limits and determine growth in use. This particularly applies to valleys where Floodplain Harvesting will be brought into the entitlement framework.<br>This indicator is included to provide insight into the performance in managing to LTAAEL. The outputs (zero exceedances) and 100% compliances are somewhat aspirational. Reporting this information is expected to provide better understanding of performance. | Extraction managed to sustainable levels |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | WSP non-compliance addressed through the required management action, as defined in each WSP<br>i.e. 100%, AWDs reduced to be compliant with the extraction limit.<br><br>**Output measure (OM27)**<br>Snowy licence review implemented by 2022.<br><br>**Output measure (OM28)**<br>AWDs and allocation statements released for each WSP<br>**Performance indicator**<br>AWDs published on website within 1 week of being made = 100% | AWDs are reflected in publicly available, date-stamped, Water Allocation Statements. Performance is measured by comparing scheduled and actual release dates. | AWDs allow water users and market participants to make informed business decisions and water availability manage risks.<br><br>Stakeholders are updated on allocations |
| W05-02 Blue-green algae management | The provision of an algal risk management system; including oversight, coordination and training, the issue of algal alerts and the development of algal risk management plans. | **Output measure (OM29)**<br>Algal risk management plans for each region are implemented.<br><br>**Performance indicators**<br>% reports meeting weekly timeframe to regional algal coordinating committees and state algal coordinator of alert levels based on algal data =100%<br>% actions implemented in accordance with algal risk management plan and guidelines = 100% | Measures provide for risk based planning for blue-green algae management and effective implementation of these plans. | Effect management of risk associated with blue-green algae |
| W05-03 Environmental water management | The development and collaborative governance of environmental flow strategies and assessments; and the use of environmental water to achieve environmental outcomes. | **Output measure (OM30)**<br>Pre-requisite policy measures - adaptive process in place to recognise return flows from environmental water.<br>**Performance indicator**<br>Agreement - eWater managers, Water NSW and SCBEWC agree the process for recognising return flows. | Clarified water sharing processes for environmental water managers, extractive water users and NRAR.<br>Enhanced protections for environmental water.<br>Enhanced regulatory and policy structure to facilitate improved environmental water management. | Environmental watering activities are better able to achieve their intended environmental outcomes.<br>Greater community confidence in how environmental water portfolios are managed.<br>Healthy ecosystem function and environmental assets. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | | Greater transparency and certainty in decision-making in environmental water management. | In developing a more comprehensive set of ecological objectives, the strategies for increased flows developed by the governments focused on repairing flow related processes |
| | | **Performance indicator**<br>Annual report on PPMs implementation published on DPIE website.<br><br>**Output measure (OM31)**<br>Northern Basin – Interim Unregulated Flow Management Plan for the North-west implemented as demonstrated by: Review report published and Procedures Manual for the Interim Unregulated Flow Management Plan for the North-west adopted by Water NSW and in place.<br><br>**Output measure (OM32)**<br>Snowy Licence – Evaluate using the Mowamba River to provide environmental water to the Snowy River<br><br>**Output measure (OM33)**<br>Snowy licence – Investigate more flexible delivery to achieve better environmental outcomes and deliver an average annual flow consistent with the intent of SWIOID | | |
| W05-04 Water plan performance assessment and evaluation | The assessment, audit and evaluation of the water management plans' appropriateness, efficiency and effectiveness in achieving economic, social and environmental objectives. | **Output measure (OM34)**<br>WSP risk assessments prepared: Output = 25<br>**Performance indicator**<br>WSPs with risk assessments available prior to remake date = 100% | Risk assessments are scheduled by region, to align with WSP completion schedules (6 months before WSP remake dates). | Prepare information for external (NRC and MDBA) reporting.<br><br>Provide evidence that supports decision making during WSP remake and development |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | **Output measure (OM35)**<br>WSPs included in the scope of monitoring programs:<br>Output = Monitoring data for all inland (Basin) WSPs, at least six coastal WSPs (approximately 50% of coastal WSP remakes during the period)<br>**Performance indicator**<br>WSPs with monitoring outcomes available prior to evaluation and remake date = 100% | Monitoring outputs are scheduled according to overarching MER plans to align with WSP evaluation and reporting schedules. | Support an adaptive management framework for WSPs to meet the requirements of the Water Management Act 2000 (and Water Act 2007 (Commonwealth) when WRPs commence) |
| W06-01 Water plan development (coastal) | The development, review, amendment, and extension or replacement of water management plans, and the consultation activities associated with developing these plans for coastal water sources. | **Output measure (OM36)**<br>NRC review report submitted for plans due to expire within the 2021 IPART period to Minister and Minister endorses Department recommendation for coastal WSPs to be replaced or extended.<br>Output = 7<br><br>Anticipated coastal WSPs approved for replacement or extension : Bega, Murrah, Richmond, Towamba, Tweed, GMR Unreg, GMR GW<br><br>**Performance indicator**<br>Review report submitted on time = 100% | The NRC review is a statutory requirement under the Act and must be completed prior to a plan expiring to inform whether the plan is extended for a further ten years or replaced.<br><br>A number of plans are due to expire during the IPART determination period. | If the output measure is achieved this will demonstrate that the statutory review requirements have been met and a plan remains in place for the water source(s) beyond its expiry. |
| | | **Output measure (OM37)**<br>WSP rules are reviewed and updates proposed where required as part of plan replacement:<br>Output = 13 | The Department undertakes work to inform any proposed changes to plan rules as part of the plan replacement. | If the output measure is achieved this will demonstrate that the Department has progressed this work to inform the draft plan that is placed on public exhibition. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated WSPs that have work progressed to review and update rules where required to inform draft plan for public exhibition: CC, Coffs, Hunter, LNC, Bega, Murrah, Richmond, Towamba, Tweed, GMR Unreg, GMR GW, 2 additional plans brought forward from those due to expire in 2026.<br><br>**Performance indicator**<br>WSP rules reviewed and updates proposed in line with expected timing = 100%<br><br>**Output measure (OM38)**<br>Public exhibition of draft replacement coastal WSPs is completed:<br>Output = 11 | Public exhibition is a statutory requirement as part of replacing a plan and provides for important stakeholder input to the planning process. It marks a key milestone in the planning process. | If the output measure is achieved this will demonstrate that the statutory exhibition requirements have been met and that the planning is progressing for replacement of the plan in the required statutory timeframes (within 2 years). |
| | | Anticipated coastal WSPs that have public exhibition completed: CC, Coffs, Hunter, LNC, Bega, Murrah, Richmond, Towamba, Tweed, GMR Unreg, GMR GW.<br><br>**Performance indicator**<br>Public exhibition completed in line with expected timing = 100%<br><br>**Output measure (OM39)**<br>Replacement coastal WSP submitted for approval to commence:<br>Output = 11 | As part of the approval process for replacement of a plan the plan must receive concurrence from the Minister for the Environment as well as approval from the Minister for Water. It marks a key milestone in the planning process. | If the output measure is achieved this will demonstrate that the planning is progressing for replacement of the plan in the required statutory timeframes (within 2 years). |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated 11 coastal WSPs submitted to the Minister for approval to commence: CC, Coffs, Hunter, LNC, Bega, Murrah, Richmond, Towamba, Tweed, GMR Unreg, GMR GW.<br><br>**Performance indicator**<br>Replacement WSPs submitted for approval in line with expected timing = 100% | Once approved through the Ministers the plan will formally commence meaning that the statutory requirements have been met and water sharing arrangements are continued under the Act for the plan area. The plans inform licence and approval conditions as well as trade and application provisions. | If the output measure is achieved this will demonstrate that the planning process has government support and statutory timeframes for plan replacement have been met. |
| | | **Output measure (OM40)**<br>Commencement of coastal WSPs: Output = 11<br>Anticipated coastal WSPs approved by the Minister to commence and have been submitted to the NSW legislation website for upload: CC, Coffs, Hunter, LNC, Bega, Murrah, Richmond, Towamba, Tweed, GMR Unreg, GMR GW.<br><br>**Performance indicator**<br>Commencement of WSPs occur in line with expected timing = 100%<br><br>**Output measure (OM41)**<br>Amendment to coastal WSPs commenced as required. | Plans may need to be amended during their ten-year term. This process can take some dependent on the type of amendment. Approvals for amendments mirrors plan replacements. Amendments can be identified within plans or arise on an ad hoc basis. | If the output measure is achieved this will demonstrate that the Department has progressed plan amendments in line with plan provisions or as required to address issues arising. This ensures that the plans remain current and implementable. |
| W06-02 Water plan development (inland) | The development, review, amendment, and extension or replacement of water management plans; the development of additional planning instruments to comply with the Commonwealth Water Act; and the consultation activities associated with developing these plans for inland water sources. | **Output measure (OM42)**<br>NRC review report submitted for plans due to expire within the 2021 IPART period to Minister and Minister endorses Department recommendation for inland WSPs to be replaced or extended. Output = 13 | The NRC review is a statutory requirement under the Act and must be completed prior to a plan expiring to inform whether the plan is extended for a further ten years or replaced. | If the output measure is achieved this will demonstrate that the statutory review requirements have been met and a plan remains in place for the water source(s) beyond its expiry. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated inland WSPs approved for replacement or extension: Castlereagh, IS, LMD, Murray, NW NSW, NSW BR, BD, Belubula, Gwydir, Lachlan, Macq Bogan, Murrumbidgee, Namoi/Peel.<br><br>**Performance indicator**<br>Review report submitted on time = 100% | A number of plans are due to expire during the IPART determination period. | |
| | | **Output measure (OM43)**<br>WSP rules are reviewed and updates proposed where required as part of plan replacement. Associated updates to WRPs are also identified.<br>Output = 13<br>Anticipated inland WSPs (and associated WRPs) to have work progressed to review and update rules where required to inform draft replacement plan for public exhibition: Castlereagh, IS, LMD, Murray, NW NSW, NSW BR, BD, Belubula, Gwydir, Lachlan, Macq Bogan, Murrumbidgee, Namoi/Peel.<br><br>**Performance indicator**<br>WSP rules reviewed and updates proposed in line with expected timing = 100% | The Department undertakes work to inform any proposed changes to plan rules as part of the plan replacement. In inland areas there may be flow on to the relevant WRP as well. | If the output measure is achieved this will demonstrate that the Department has progressed this work to inform the draft plan(s) that are placed on public exhibition. |
| | | **Output measure (OM43)**<br>Public exhibition of draft replacement inland WSPs (and any associated WRP updates) is completed<br>Output = 13 | Public exhibition is a statutory requirement as part of replacing a plan and provides for important stakeholder input to the planning process. It marks a key milestone in the planning process. | If the output measure is achieved this will demonstrate that the statutory exhibition requirements have been met and that the planning is progressing for replacement of the plan in the required statutory timeframes (within 2 years). |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated inland replacement WSPs (and associated WRPs) to have public exhibition completed (Castlereagh, IS, LMD, Murray, NW NSW, NSW BR, BD, Belubula, Gwydir, Lachlan, Macq Bogan, Murrumbidgee, Namoi/Peel) | | |
| | | **Performance indicator**<br>Public exhibition completed in line with expected timing = 100% | As part of the approval process for replacement of a plan the plan must receive concurrence from the Minister for the Environment as well as approval from the Minister for Water. It marks a key milestone in the planning process.<br><br>Any changes to inland WSPs may result in amendments being required to the associated WRP. This amendment then requires Commonwealth accreditation. | If the output measure is achieved this will demonstrate that the planning is progressing in order for replacement of the plan in the required statutory timeframes (within 2 years) and that Commonwealth accreditation requirements are being progressed |
| | | **Output measure (OM44)**<br>Replacement inland WSP submitted for approval to commence and amended WRP submitted for accreditation to Commonwealth:<br>Output = 13<br>Anticipated up to 13 inland WSPs to be submitted to the Minister for approval to commence: Castlereagh, IS, LMD, Murray, NW NSW, NSW BR, BD, Belubula, Gwydir, Lachlan, Macq Bogan, Murrumbidgee, Namoi/Peel.<br>Relevant WRPs are submitted to the MDBA for accreditation assessment of amendments. | | |
| | | **Performance indicator**<br>Replacement WSPs submitted for approval in line with expected timing = 100% | Once approved through the Ministers the plan will formally commence meaning that the statutory requirements have been met and water sharing arrangements are continued under the Act for the plan area. The plans inform licence and approval conditions as well as trade and application provisions. | If the output measure is achieved this will demonstrate that the planning process has government support and statutory timeframes for plan replacement have been met. |
| | | **Output measure (OM45)**<br>Replacement inland WSP has commenced.<br>Output = 13 | | |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated inland WSPs to be approved by the Minister to commence and have been submitted to the NSW legislation website for upload: Castlereagh, IS, LMD, Murray, NW NSW, NSW BR, BD, Belubula, Gwydir, Lachlan, Macq Bogan, Murrumbidgee, Namoi/Peel.<br>Relevant WRPs are accredited by the Commonwealth Minister for Water<br><br>**Performance indicator**<br>Replacement WSPs are commenced in line with expected timing = 100%<br><br>**Output measure (OM46)**<br>Amendment to inland WSPs/WRPs commenced as required (separate to those undertaken as part of plan replacement processes during the IPART period) | Plans may need to be amended during their ten-year term. This process can take some time dependent on the type of amendment. Approvals for amendments mirrors plan replacements. Amendments can be identified within plans or arise on an ad hoc basis. | If the output measure is achieved this will demonstrate that the Department has progressed plan amendments in line with plan provisions or as required to address issues arising. This ensures that the plans remain current and implementable. |
| | | **Output measure (OM47)**<br>Water Resource Plans accredited in line with Basin Plan 2012 and Commonwealth Water Act requirements.<br>Output = 20<br><br>**Performance indicator**<br>WPSs accredited in line with expected timing = 100%<br><br>**Output measure (OM48)**<br>NSW WSPs commenced prior to accreditation of NSW WRPs<br>Output = 9 | | If the output measure is achieved this will demonstrate that the Commonwealth has formally provided accreditation feedback on the NSW WRPs, and that ultimately NSW has met accreditation requirements. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Anticipated regulated river inland WSPs replaced/amended ahead of associated WRP accreditation: Belubula, Peel, Namoi, Gwydir, Macquarie Castlereagh, Murray, Murrumbidgee, MLD, Lachlan. | NSW is required to meet Basin Plan requirements in relation to water resource planning. 20 WRPs have been submitted by NSW for accreditation assessment. As part of the planning process it is usual that these plans may need to be withdrawn and resubmitted in order to address accreditation assessment feedback.<br><br>It is a statutory requirement that state legislation must be commenced prior to the accreditation of the WRPs. This requires the WSPs which form part of the WRP to be commenced. NSW is yet to commence the regulated river WSPs that were submitted as part of the WRPs. | If the output measure is achieved this will demonstrate that the Department has resolved any likely accreditation issues relevant to the WSPs and that there is NSW government support for the plans to commence. |
| W06-03 Floodplain management plan development | The development, review, amendment, and extension or replacement of Floodplain Management Plans, in collaboration with the Office of Environment and Heritage. | **Output measure (OM49)**<br>S43 review report submitted for southern FMPs due to expire within the 2021 IPART period to Minister and Minister endorses Department recommendation for FMPs to be replaced or extended with 3/4 WMA200 compliant FMPs<br>Output = 10 | The S43 review is a statutory requirement under the Act and must be completed within the fifth year after the plan was made to inform amendment or replacement of the plan.<br><br>A number of plans are due to expire during the IPART determination period. | If the output measure is achieved this will demonstrate that the statutory review requirements have been met and the plan provisions remain adequate and appropriate for ensuring effective implementation of the water management principles. |
| | | **Output measure (OM50)**<br>S43 review reports submitted in line with statutory 5-year timeframe for 3 northern FMPs.<br>Output = 3 | Minister has noted intent to progress amendments to 3 northern FMPs as required (Gwydir, Barwon Darling, Upper Namoi) | |
| | | **Output measure (OM51)** | | If the output measure is achieved this will demonstrate that the |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | FMP rules are reviewed and updates proposed where required as part of plan replacement/amendment<br>Output = 10<br><br>Work with staff under W06-02 for associated updates to WRPs to be identified. This is anticipated to include technical investigations of floodway network, flood behaviour and environmental, cultural, socio-economic and existing floodplain assets.<br><br>Anticipated that up to 7 FMPs (and associated WRPs) to have work progressed to review and update rules where required to inform draft replacement plan/plan amendments for public exhibition (10 historic southern valley FMPs anticipated to be replaced by 3/4 FMPs. Gwydir, Barwon Darling and Upper Namoi anticipated to require amendment) | The Department undertakes work to inform any proposed changes to plan rules as part of the plan replacement. In inland areas there may be flow on to the relevant WRP as well which will be picked up under W06-02. | Department has progressed this work to inform the draft plan(s)/plan amendments that are placed on public exhibition. |
| | | **Output measure (OM52)**<br>Public exhibition of draft replacement FMPs and amended FMPs (and any associated WRP updates) is completed<br>Output = 7<br>Anticipated that up to 4 FMP replacements/ and amendments (*and associated WRPs*) have public exhibition completed (10 historic southern valley FMPs anticipated to be replaced by 3/4 FMPs. Gwydir, Barwon Darling and Upper Namoi anticipated to require amendment) | Public exhibition is a statutory requirement as part of replacing a plan and provides for important stakeholder input to the planning process. It marks a key milestone in the planning process. | If the output measure is achieved this will demonstrate that the statutory exhibition requirements have been met and that the planning is progressing. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | **Output measure (OM53)**<br>Replacement FMP/amended FMPs submitted for approval to commence<br>Output = 4<br>(Note amended WRP submitted for accreditation to Commonwealth under W06-02) | As part of the approval process for replacement of a plan the plan must receive concurrence from the Minister for the Environment as well as approval from the Minister for Water. It marks a key milestone in the planning process. | If the output measure is achieved this will demonstrate that the planning is progressing. |
| | | **Output measure (OM54)**<br>Replacement/amended FMP is commenced<br>Output = 7<br>(Note amended WRP is accredited under W06-02)<br>Anticipated that up to 4 FMP replacements and 3 FMP amendments WSPs are approved by the Minister to commence and have been submitted to the NSW legislation website for upload<br>(Note relevant WRPs are accredited by the Commonwealth Minister for Water under W06-02) | Any changes to inland WSPs may result in amendments being required to the associated WRP. This amendment then requires Commonwealth accreditation. This component of the work will be picked up in W06-02.<br><br>Once approved through the Ministers the plan will formally commence meaning that the statutory requirements have been met and water sharing arrangements are continued under the Act for the plan area. The plans inform licence and approval conditions as well as trade and application provisions. | If the output measure is achieved this will demonstrate that the planning process has government support and statutory timeframes for plan replacement have been met. |
| W06-04 Drainage plan development | The development, review, amendment, and extension or replacement of Drainage Management Plans, to address water quality problems associated with drainage systems. | None included at this time | | |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| W06-05 Regional planning and management strategies | The development, evaluation and review of regional water strategies, metropolitan water plans and other planning instruments, including the associated stakeholder engagement | **Output measure (OM55)**<br>Regional water strategies completed and in place<br>Output = 10<br><br>**Output measure (OM56)**<br>Regional Water Strategy Action Plans developed<br>Output = 10<br><br>**Performance indicators**<br>Action Plan published within 3 months of each Regional Water Strategy being finalised = 100%<br>Action Plan reported against annually = 100%<br><br>**Output measure (OM56)**<br>Regional water strategies updated on a rolling annual cycle and associated Action Plan updated. Output equates to review on four year cycle and one-third within 2021 period.<br>Output = 4<br><br>**Output measure (OM57)**<br>Forward program for implementation and MER and public reporting published by June 2021 | Whilst at least 4 of the 12 strategies will be a draft of the final strategy for pub ex and approval by Government, the latter process takes several months and is not totally within the control of the Department. It is therefore proposed to remove this milestone, and pick up on the commitment by the Minister to the Premier to have 9 of the 12 Strategies completed by the end of 2021 | Water strategies that:<br>Deliver and manage water for local communities<br>Enable economic prosperity<br>Recognise and protect Aboriginal water rights, interests and access to water<br>Protect and enhance the environment<br>Identify least cost policy and infrastructure options |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | **Output measure (OM58)**<br>Completion of Greater Sydney Water Strategy in 2021, including:<br>▼ a water efficiency and conservation framework<br>▼ a performance and monitoring framework. | | |
| W06-06 Development of water planning and regulatory framework | The development of the operational and regulatory requirements and rules for water access. | **Output measure (OM59)**<br>Provide a register of regulatory and policy instruments progressed during the year<br>Output = 5 | Measure of delivery of work that is undertaken in a highly dynamic policy environment<br>Register to include sufficient information to understand the policy alignment, status, priority and level of effort associated with each activity | An effective and efficient water planning and management framework |
| | | **Output measure (OM60)**<br>Policies and regulations supporting the water planning and regulatory framework are developed and reviewed using a risk-based approach.<br>**Performance indicator**<br>A risk-based framework is used 100% of the time for informing the priorities for development of water policy and regulatory instruments | Effective and efficient water planning and regulation requires the ongoing review and improvement of policy and regulatory settings.<br>Policy and regulation must be adaptive and responsive to existing and emerging risks, including environmental, social, economic, cultural, or compliance and governance-based risks. A risk-based approach to policy and regulatory development helps to achieve a responsive, efficient and effective water planning and | |
| | | **Output measure (OM61)**<br>Timely public access to key policies and regulatory instruments.<br>**Performance indicator** | To realise effective regulation, water users and the community need good and timely access to the policies, plans and regulations that are in force and as they are developed. | |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | Key policies and regulatory instruments are published on the Department's website within 4 weeks of their approval = 90% | | |
| W06-07 Cross border and national commitments | The development of interstate water sharing arrangements and the implementation of operational programs to meet national and interstate commitments. | **Output measure (OM62)**<br>DPIE water publishes on its website an annual statement on interjurisdictional participation and performance against interstate agreements.<br><br>**Output measure (OM63)**<br>Additional IPART performance indicator annual statement published | Improved transparency for stakeholders | National and interstate agreements successfully negotiated and implemented |
| W07-01 Water management works | The undertaking of water management works to reduce the impacts arising from water use or remediate water courses | **Output measure (OM64)**<br>Length of river remediated<br>Output = 12km<br>**Performance indicators**<br>High priority areas of erosion identified and remediated = 90%<br>Channel capacity at Tumut = >=9,200 ML/day | Bank stability is maintained and not adversely impacted by power production activities undertaken by Snowy-Hydro Ltd. | Maintain channel capacity to enable adequate delivery of water to downstream users.<br>Riparian and in-stream environment values are improved. |
| | | **Output measure (OM65)**<br>Rolling three-year average of salt diverted from the Murray River system = >50,000 t/year<br>**Performance indicator**<br>Maintain net credit (EC) balance for NSW on the BSM2030 Salinity Register = >20 EC | Optimal SIS operations ensures salinity impacts on the River system are mitigated. | Improved water quality in the river system.<br>No adverse impacts to the receiving environment. Social and economic benefits are maintained<br>Assists in meeting NSW obligations to Schedule B of the Murray-Darling Basin Agreement |
| W08-01 - Regulation systems management | The management, operation, development and maintenance of the register for access licences, approvals, trading and environmental water. | **Performance indicators**<br>System availability = 95%<br>Security and privacy of user data measured through audit = No major non-conformances | An output measure is less meaningful as there is little incremental cost in adding new users. Performance measures are more useful as they provide insight into the quality of the service. | System is efficient and effective at supporting water management activities |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | | Water NSW has existing licence obligations regarding maintaining an access register .<br>The target for system availability is suggested only, Water NSW does not have historic data on which to inform the measure. | |
| W08-02 Consents management and licence conversion | The transcribing of water sharing provisions into licence conditions and the conversion of licences to the Water Management Act. | **Output measure (OM66)**<br>WSP rules are enforceable because the plan mandatory conditions are reflected on the licence<br>**Performance indicators**<br>Rule changes are reviewed to identify whether condition changes are necessary within 3 months of the event requiring = 100%<br>Necessary changes to conditions are notified to the licence/approval holder within 6 months of the event requiring notification = 100% | When rules required to be implemented through mandatory conditions are created, amended or revoked, this is given effect by reviewing and updating the conditions imposed in the licence or approval.<br>The rules may be specified in the Water Management Act 2000, regulations or management plans (water sharing plan or floodplain management plan). These rules may be added, amended or removed from these instruments. | WSP rules are enforceable because the plan mandatory conditions are reflected on the licence |
| W08-03 Compliance management | The on-ground and remote monitoring activities (including investigations and taking statutory actions) to ensure compliance with legislation, including licence and approval conditions. | **Output measure (OM67)**<br>Publish on NRAR website compliance activity by water sharing plan on a monthly basis including observed levels of compliance and non-compliance. Output = 100% coverage of WSPs per month<br><br>**Output measure (OM68)**<br>Publish annual progress reports<br><br>**Output measure (OM69)**<br>Community benchmarking survey (Two yearly) | Output measures are selected as they are within NRAR's control and link to statutory objectives relating to maintaining public confidence, accountability and transparency. | Output measures will demonstrate the compliance efforts of NRAR and where these are undertaken and will promote confidence in water compliance frameworks. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | | | Increased understanding of customer knowledge and perspectives to inform compliance activities |
| | | **Output measure (OM70)**<br>Water licence holders audited and/or inspected each year<br>Output = 1,722 per year | Awareness, trust and confidence of customers and the public are important foundations for a compliance culture. NRAR has completed the first survey of this type in 2019/20.<br><br>The output is calculated as 4.5% of the number of licence holders reported in NRAR's 2019/20 progress report; 38.270. The 4.5% audit rate is selected as it is consistent with other jurisdictions and reflects a stronger program than has historically been undertaken in NSW. This indicator relates to NRAR's statutory objectives for effectiveness and maintaining public confidence. This measure is within NRAR's control. | This output measure will provide strong visibility and presence in the regulated community thus maintaining confidence in the enforcement of water laws consistent with NRAR's statutory objectives, and enable NRAR to obtain a reasonable understanding of general compliance rates which is important information that supports water user social licence. |
| | | **Performance indicators**<br>Incoming public reports assessed and prioritised within 5 days working days of receipt = 90% | | This performance indicator will contribute to the timely and effective resolution of these reports which will in turn contribute to maintaining confidence in water compliance and contribute to water users social licence to operate. |
| | | High priority cases assigned to an investigator within 15 working days of receipt = 90% | This provides a driver for NRAR effectiveness. This measure relates to NRAR's statutory objectives for effectiveness. This measure is within NRAR's control. | This performance indicator will contribute to the timely and effective resolution of cases and will contribute to maintaining confidence in water compliance. |
| | | Public informants will be contacted (by letter or a telephone call) within 15 working days of lodging an alleged breach with NRAR = 90% | This performance indicator will drive NRAR processes to operate effectively and in a timely manner. This measure relates to NRAR's statutory objectives for effectiveness. This measure is within NRAR's control. | |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | | This performance indicator drives NRAR to operate transparently and with accountability. This measure relates to NRAR's statutory objectives for transparency, accountability and maintaining public confidence. This measure is within NRAR's control. | This performance indicator will ensure transparency and accountability to public informants (and the wider public) reports and will contribute to maintaining confidence in water compliance. |
| W09-01 Water consents transactions | Transactions undertaken on a fee for service basis; including dealings, assessments, changes to conditions and new applications for water licences and approvals. | **Output measure (OM71)**<br>Water access licence applications<br>Forecast =<br>Water NSW Water access licences: 210 per year<br>Water NSW Water access licence dealings: 862 per year<br>NRAR Water access licences: 16 per year:<br>**Performance indicator**<br>Water Access Licence –applications determined within 45 days = 80%<br><br>**Output measure (OM72)**<br>Works and Use Approvals –applications<br>Forecast =<br>Water NSW: 2,097 per year<br>NRAR: 131 per year<br>**Performance indicator**<br>Works and Use Approvals –applications determined within 65 days = 80%<br><br>**Output measure (OM73)**<br>Approval extensions<br>Forecast =<br>Water NSW: 13,079 (21/22 to 2024/25) | Performance indicators are selected as they are within DPIE and NRAR's control and seek to ensure that applications for licences and approvals are undertaken in a timely manner. | Legal water access, trade and take through accurate and timely processing of licences and approvals. |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | NRAR: 269 per year<br>**Performance indicator**<br>Approvals Extensions –applications determined within 25 days = 80% | | |
| W10-01 - Customer management | All customer liaison activities; including responding to calls to licensing and compliance information lines; and producing communication and education materials such as website content and participation in customer forums. | **Output measure (OM74)**<br>Number of customer enquiries received<br>Forecast = NRAR: 6,981 calls per year and 14,259 emails per year<br><br>**Performance indicator**<br>Enquiries responded to within 24 hours = 90%<br><br>**Output measure (OM75)**<br>Number of complaints received per year (Water NSW)<br>Forecast = 389<br>**Performance indicators**<br>Complaints resolved within 28 days = 90%<br><br>Performance against 'Skyline' composite measure = Improvement of 2.5% per year. on 2021 level | Measuring the number of customer enquiries received provides insight into the magnitude of the resources needed to respond to customer enquiries.<br>The performance indicator for enquiry response time seeks to ensure that customers are being provided information in a timely manner.<br>Note that Water NSW has customer obligations under its operating licence. DPIE/NRAR do not have these same obligations.<br>The performance indicator for complaints resolution time seeks to ensure that complaints are being resolved in a timely manner. | The desired outcome is that WAMC services are transparently provided and that customers are informed which helps maintain accountability of WAMC.<br><br>Services are delivered in a way that meets customer expectations |

| Activity | Activity description | Draft output measures/Performance indicators | Rationale for measures / indicators and comments | Outcome that the outputs will help deliver |
|---|---|---|---|---|
| | | | The measure is based on customer perception from the annual research program survey and built up from four sub-measures: the suitability of services provided, satisfaction with services provided, value for money and quality of relationships. Results should be shared via the principal customer communication channels (e.g. Water NSW website, annual report) | |
| W10 – 03 Billing management | The management of billing requirements and subcontracted billing, revenue collection and debtor management service delivery, and responding to queries on billing activities. | **Output measure (OM76)**<br>Expected number of accounts billed in each year<br>Forecast = 38,915 pear year<br><br>**Performance indicator**<br>% accounts billed in the year = 95% | Measuring the number of accounts billed provides insight into the magnitude of the billing requirement.<br>The performance indicator test that accounts are billed as planned. | The desired outcome as that customers pay for the services received and WAMC receives the revenue is requires. The desired outcome is also that billing is straightforward for customers. |

**Source:** Cardno, Expenditure review of Water Administration Ministerial Corporation, Final Report, March 2021, pp 187-204.

# Glossary

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| 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 July 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.<br><br>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 *Water Act 1912* (NSW) or unit shares under the *Water Management Act 2000* (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 |

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| 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 | *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) |
| 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 |
| Notional revenue | Revenue that would be recovered from users if prices were set to fully recover efficient costs. |
| NRAR | Natural Resources Access Regulator (NRAR) is one of the agencies delivering WAMC functions.<br><br>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. |

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| 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.<br><br>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 |

[i] Matthews Review, *Independent investigation into NSW water management and compliance, Final Report*, November 2017; NSW Ombudsman, *Investigation into water compliance and enforcement 2007-2017*, November 2017; Vertessy Review, *Independent assessment of the 2018-19 fish deaths in the lower Darling, Final Report,* March 2019.
[ii] WAMC (DPIE/NRAR) pricing proposal to IPART, June 2020, p 3.
[iii] IPART, *Review of rural water cost shares - Final Report*, February 2019, pp 47-48.
[iv] IPART, *Review of rural water cost shares - Final Report*, February 2019, pp 47-48.
[v] WAMC (DPIE / NRAR) pricing proposal to IPART, June 2020, p 17.
[vi] WAMC (Water NSW) pricing proposal to IPART, June 2020, pp 34-35.
[vii] WAMC (Water NSW) pricing proposal to IPART, June 2020, pp 35.
[viii] WAMC (DPIE / NRAR) pricing proposal to IPART, Detailed Paper E, June 2020, p 143.
[ix] IPART, *Review of prices for Water NSW Greater Sydney from 1 July 2020 – Final Report*, June 2020, p 1.
[x] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* p 24.
[xi] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* p 14.
[xii] WAMC (DPIE/NRAR) pricing proposal to IPART, June 2020, Detailed Paper E, pp 26, 32, 63, 78, 80, 91, 107, 189-192.
[xiii] WAMC (Water NSW) pricing proposal to IPART, June 2020, pp 68- 72.
[xiv] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 34-35.
[xv] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, p 153.
[xvi] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, p 43.
[xvii] Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021, p 152.

[xviii] Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021, p 147.
[xix] NRAR, *NRAR Regulatory Policy,* May 2019, p 1.
[xx] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 120-121.
[xxi] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 120-121.
[xxii] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 156-157.
[xxiii] Cardno, *WAMC Expenditure Review - Final Report for IPART,* March 2021, pp 156-157.
[xxiv] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 59, 105.
[xxv] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 59-60, 124.
[xxvi] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 59, 90-91.
[xxvii] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 59-60, 128-129.
[xxviii] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 59-60, 116-117.
[xxix] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* p 60.
[xxx] *Cardno, WAMC Expenditure Review - Final Report for IPART, March 2021,* pp 53-56.
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