IPART

Independent Pricing and Regulatory Tribunal
New South Wales

Rural Water Cost Shares

WaterNSW
Water Administration Ministerial Corporation

Final Report

Water

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The Independent Pricing and Regulatory Tribunal (IPART)

IPART provides independent regulatory decisions and advice to protect and promote the ongoing interests of the consumers, taxpayers and citizens of NSW. IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website: https://www.ipart.nsw.gov.au/Home.

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1 Executive Summary

The NSW Independent Pricing and Regulatory Tribunal ("IPART" or "we") has reviewed how we share costs between rural water customers[1] and the NSW Government (on behalf of other users and the broader community) when setting maximum prices for the Water Administration Ministerial Corporation's (WAMC's) water management services and WaterNSW's rural bulk water services[2]. Background information about WAMC's water management services and WaterNSW's rural bulk water services is provided in Appendix E.

This review relates to how future operating and capital expenditure is shared between customers (via regulated prices) and the NSW Government. This review will not affect the past allocation of costs and will not affect prices over the current WAMC[3] and WaterNSW[4] price determinations. However, decisions made in this review will inform our starting point for the upcoming price reviews for WAMC in 2019-20 and WaterNSW in 2020-21. We note there will be further opportunities to consult with stakeholders on issues including rural cost shares as part of these upcoming WAMC and WaterNSW price reviews.

1.1 Summary of our decisions in this review

We have made decisions to:

- Continue to allocate the efficient costs of rural bulk water services between water customers and the NSW Government on the basis of the impactor pays principle. That is, those that create the need to incur the costs should pay the costs.
- Continue to allocate forward-looking legacy costs to the NSW Government.
- Maintain the current activity-based framework to allocate costs and not adopt an alternative, service-based cost share framework.
- Update several cost share ratios under the activity-based framework.
- Consider options to streamline the lists of activities (from which we share costs between customers and the NSW Government) in the upcoming WAMC and WaterNSW price reviews.
- Support valley-specific customer cost shares in principle and consider valley-specific customer cost shares at the upcoming WAMC and WaterNSW price reviews.
  - We would consider deviating from the state-wide aggregate cost share ratio for an activity on an exception basis – ie, where sufficient information was available to indicate a material difference between a specific valley's cost share ratio and the state-wide cost share ratio.

1 That is, water entitlement holders that are subject to WaterNSW's and/or the Water Administration Ministerial Corporation's regulated prices (as determined by IPART).

2 When we refer to WaterNSW's services throughout this Draft Report, we are referring to WaterNSW's rural bulk water services.

3 IPART, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016 — Final Report,* June 2016.

4 IPART, *WaterNSW: Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021,* June 2017.

- Support using different cost shares for specific customer groups if this increases the cost reflectivity of our prices. We will consider customer specific cost shares at the upcoming WAMC and WaterNSW prices reviews.
  - We could consider apportioning the customer share of costs differently between customer groups on an exception basis, where one customer group's relative contribution to the cost of an activity is different to the general customer cost share.

1.1.1 Clarifying our cost sharing principles

We have decided to continue to allocate the efficient costs of WAMC and WaterNSW's rural bulk water services on the basis of the impactor pays principle. Under this approach, costs are allocated between water customers and the NSW Government (on behalf of other users such as recreational users and the broader community) on the basis of whichever party created the need for an activity (and its associated costs) to be incurred. We prefer the impactor pays approach over alternative approaches (such as a beneficiary pays approach) as we consider it achieves better efficiency outcomes, as it results in customers facing the full costs of the services they receive. In addition, it is a more practical and transparent method for allocating costs and is consistent with the funding hierarchy that we have used previously for other services.

We have also clarified how we apply the impactor pays approach and identify which parties are potential impactors for each activity. We have maintained that the counterfactual starting point (which anchors our application of the impactor pays principle) is a world without high consumptive use of water resources. We have also clarified our treatment of legacy costs and our decision is that legacy costs (which are paid for by the NSW Government) are those costs that are a result of past users and activities and are not related to the efficient costs to service current and future water customers.

1.1.2 Maintaining our activity-based cost sharing framework

As part of this review we have investigated the potential benefits and costs of moving away from our activity-based cost sharing framework to an alternative service-based framework. A service-based framework would allocate costs to defined services that WAMC and WaterNSW deliver and then consider who should pay for these services, while the activity-based framework allocates costs of each activity between customers and the NSW Government (on behalf of the broader community).

We have decided to maintain the activity-based framework. Based on stakeholder feedback and consultant advice, we found that the potential benefits of a service-based framework are unlikely to outweigh the costs of its implementation. We also consider that a service-based framework is unlikely to materially enhance transparency or cost-reflectivity compared to an activity-based framework.

1.1.3 Applying our principles and framework

In applying our cost sharing principles and framework, we determine a customer cost share to apply to the efficient cost of each activity undertaken by WAMC and WaterNSW to deliver regulated rural bulk water services. We engaged an expert consultant (Aither) to review the current activity-based cost share framework and cost share ratios. Based on Aither's advice, we have revised a number of the cost share ratios for both WAMC and WaterNSW's activities.

Our decision to revise these customer cost shares recognises that there are impactors other than water customers that drive some of WAMC and WaterNSW's efficient costs. These include communities that create the need for flood management costs and recreational users that create the need for WAMC and WaterNSW to incur additional costs. It also recognises that water customers create the need to incur direct costs (eg, the costs of storing and delivering water) and indirect costs (eg, the costs of addressing environmental impacts that are caused by storing and delivering water).

1.1.4 Identifying areas of further investigation for upcoming price reviews

This review has identified a number of areas for further investigation, which would involve assessing the costs and benefits of potential changes. These changes include consideration of whether to vary the allocation of costs between the government and customers based on valley-specific factors on an exception basis, whether different customer groups have different impacts on costs and consolidation of a number of activities to improve transparency and remove duplication. In principle, we support Aither's recommendations and we see merit in investigating these potential improvements to the cost sharing framework at the next price reviews for WAMC (2019-20) and WaterNSW (2020-21).

1.1.5 Summary of changes between draft and final reports

The main changes we have made between draft and final reports are:

- We have changed the customer cost share for WAMC's activity *W02-03 Groundwater data management and reporting* from our draft decision of 50% back to its original level of 100%. During stakeholder workshops following release of our Draft Report, we received information from the Department of Industry indicating that all activities associated with groundwater are undertaken because of consumptive users. We have therefore reverted back to the original 100% customer cost share for this activity.

1.2 Estimated impacts of our decisions in this review

The revised cost share ratios have the following indicative impacts:

- Increasing the customer share of WAMC's efficient costs from 76% to 84%.
- Increasing the customer share of WaterNSW's efficient costs from 83% to 84%.

These impacts have been calculated in aggregate across all valleys and based on the existing allocation of costs to activities for both WAMC and WaterNSW over the four year period 2017-18 to 2020-21.

We note that prices for water customers will not be impacted immediately by this review. Decisions in this review will inform the next WAMC price review (in 2019-20) and the next WaterNSW-Rural price review (in 2020-21). We further note that increased cost shares for water customers do not necessarily mean a corresponding increase in prices, as the total efficient costs to be recovered and what customers can afford to pay would also be considered by IPART in the upcoming pricing reviews for both WAMC and WaterNSW.

1.3 Our process for this review

In undertaking this review, we have undertaken public and targeted stakeholder consultation as well as research and analysis. The key steps in our process were:

- Releasing an Issues Paper in April 2018, which set out our approach, proposed principles and potential improvements and issues with our existing cost sharing framework on which we sought feedback. We received twelve submissions
- Holding targeted stakeholder consultation in July 2018 to provide key stakeholders with an opportunity to discuss our Issues Paper, share their views, propose changes and raise further issues
- Considering all submissions to the Issues Paper, feedback from the first round of stakeholder consultation, conducting our own analysis and research and engaging an external consultant to inform our draft decisions
- Releasing a Draft Report in October 2018, which set out the analysis and reasoning for our draft decisions, on which we sought feedback. We received seven submissions
- Holding a second round of targeted stakeholder consultation in November 2018 to discuss our draft decisions and how we determined the customer cost shares recommended in our Draft Report
- Considering all submissions to the Draft Report, feedback from stakeholders throughout the review, the consultant report, and conducting further analysis to form our final decisions.

Table 1.1 summarises the timetable for this review.

Table 1.1 Timetable for the review of rural water cost shares

Milestone	Timeframe
Release Issues Paper	24 April 2018
Submissions due on the Issues Paper	5 June 2018
Secretariat workshops with stakeholders	July 2018
Release IPART's Draft Report	16 October 2018
Secretariat workshops with stakeholders	October/November 2018
Submissions due on the Draft Report	27 November 2018
Release IPART's Final Report	5 February 2019

1.4 Structure of this Final Report

The rest of this Final Report discusses the review in more detail and sets out our decisions and supporting analysis.

- **Chapter 2** provides background and context for the review
- **Chapter 3** clarifies the principles we apply through our cost sharing framework
- **Chapter 4** demonstrates the application of the impactor pays principle when determining cost shares (ie, determining who should pay)
- **Chapter 5** assesses an alternative service-based cost sharing framework and explains our draft decision to maintain the current activity-based framework
- **Chapter 6** sets out our decisions to either maintain or revise the cost share ratios for the current lists of activities under the current activity-based framework
- **Chapter 7** identifies opportunities for potential further improvements to the activity-based cost sharing framework, which we intend to investigate further as part of the upcoming price reviews for WAMC (2019-20) and WaterNSW (2020-21).

Each chapter outlines our decisions and the reasons for these decisions, including how we took information and views provided by stakeholders into account when making these decisions.

1.5 List of decisions in this review

For convenience, a list of our decisions in this review is provided below.

Principles underlying our cost sharing framework

Applying the impactor pays principle to cost shares

Activity and service based cost sharing framework

2 Context for the review

WaterNSW operates dams and weirs to deliver bulk water to entitlement holders on regulated rivers[5] across NSW (rural bulk water services). WAMC provides water management services to holders of entitlements to take water from regulated rivers, unregulated rivers and groundwater sources across NSW.[6] These rural water services are declared Government monopoly services and are subject to price regulation by IPART. When setting prices for these services we share costs between rural water customers[7] and the NSW Government, on behalf of other users and the broader community.

We have reviewed our approach to rural water cost sharing. This chapter provides context for our review and the sections below:

- Explain why we have undertaken this review now and when (and how) the results of the review will take affect
- Set out the scope of the review, and how it fits within the broader regulatory framework and our price determination process, and
- Outline our current cost sharing framework, and the aims of this review.

2.1 This review will inform our next price determinations

The current cost share methodologies for WAMC and WaterNSW have not been comprehensively reviewed since 2001.[8] We made a commitment to review rural water cost shares in our 2017 Final Report on WaterNSW's rural bulk water prices[9] and in our 2012 review of rural water charging systems.[10]

We are conducting this review outside our scheduled price reviews[11] to consider common issues at the same time and ensure consistency in our approaches to WaterNSW and WAMC cost shares.

Changing costs shares could lead to changes in prices for rural water customers. However, this review will have no impact on customer prices immediately. Rather, it will inform our

5 The difference between unregulated and regulated rivers is that regulated rivers are controlled by a major storage or dam to supply water.
6 WaterNSW, the Department of Industry (DoI), and the Natural Resources Access Regulator (NRAR) currently deliver these services on behalf of WAMC.
7 These are consumptive users who hold water access licences and are subject to the maximum prices determined by IPART for WaterNSW's and/or WAMC's services.
8 IPART, *Department of Land and Water Conservation, Bulk Water Prices from October 2001*, December 2001.
9 IPART, *WaterNSW - Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021 – Final Report,* June 2017, p 97.
10 IPART, *Review of Rural Water Charging Systems – Final Report,* August 2012, p 8.
11 Our next price review for WAMC will be undertaken in 2019-20 and our next price review for WaterNSW (rural) will be undertaken in 2020-21.

upcoming price reviews for WAMC and WaterNSW.[12] Any changes to cost shares would be subject to further consultation as part of those reviews. We also note that the customer share of efficient costs is one factor we consider in setting prices. We also consider a number of other matters, including what customers can afford to pay.

2.2 Scope of this review

In reviewing cost shares, our goal is to ensure that customers only pay prices for regulated monopoly services that reflect the efficient costs of providing those services. This recognises that other costs are incurred in addition to the efficient costs required to provide the regulated monopoly services and that these costs should not be reflected in prices for regulated monopoly services going forward.

We are not reviewing the prudence and efficiency of past policies and past investment decisions and activities, and we note that proposed (future) costs are assessed as part of a price determination. Rather, this review is about how efficient costs are shared between customers and the NSW Government.[13] How our cost sharing framework and price setting function fit into the broader regulatory landscape is set out in the box below.

12 The decisions that we make in this review will notify stakeholders of our default approach to sharing efficient costs in future determinations of rural bulk water prices. We note that under the propose-respond model a regulated business will submit a pricing submission to us before we release an issues paper outlining our approach to setting prices.

13 We also note that WaterNSW and WAMC's delivery of services is outside the scope of this review.

Box 2.1 IPART price setting within the broader regulatory landscape

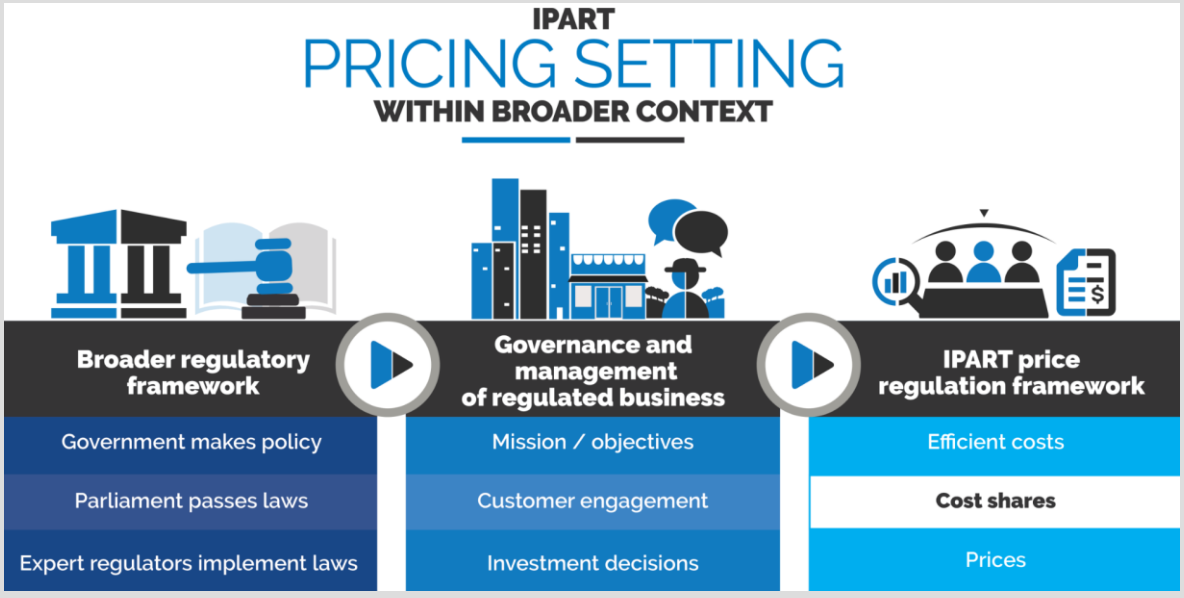
Rural bulk water services are provided within a wide regulatory framework. Among other things, this framework imposes constraints on the prices that can be charged for these services and how much water can be supplied (and to whom).

Within this framework, governments (including the NSW Government) are responsible for establishing policy regarding water management, which is subsequently passed into law and implemented by expert regulators. These includes health, safety, environment, planning and economic regulators.

Regulated businesses are governed and managed within their objectives and functions. This involves consulting with customers to understand the service levels they value and the prices they are willing to pay. Regulated businesses then make investment decisions, informed by their customers' preferences and the regulatory standards they must meet. In NSW, these investment decisions are reflected in the pricing proposals made to IPART.

Within our price review process we assess the proposals of regulated businesses to determine efficient costs and apply our cost sharing framework to share costs between customers and the NSW Government (on behalf of other parties and the broader community). We aim to ensure that customers only pay prices for regulated services that reflect the efficient costs of providing those services.

Figure 2.1 IPART price setting within the broader context



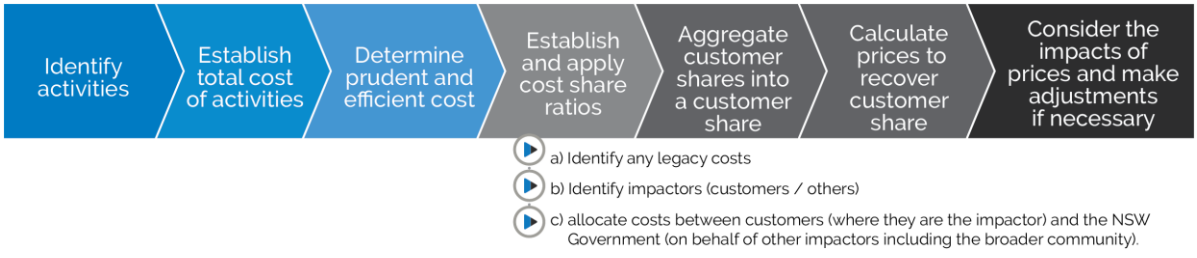
An important consideration when setting prices is the likely impact of our decisions on customers, including considering what customers can afford to pay. While these considerations are an important element of IPART's decision making process when setting prices, they are outside the scope of this review of rural water cost shares. How our cost sharing framework (and hence this review) fits into our price determination process is set out below.

Our price determination process reflects a number of steps, as illustrated in the figure below:

- Identifying the activities undertaken to provide regulated rural bulk water services, regulated water management services and other services (eg, flood mitigation, recreational activities)
- Establishing the total costs associated with these activities
- Determining efficient and prudent costs. This involves reviewing proposed costs and occurs during the price review
- Establishing cost share ratios by:
  - Identifying and removing and legacy costs
  - Identifying the impactors of the remaining costs
  - Allocating costs between customers (where they are the impactor) and the NSW Government (on behalf of other impactors including the broader community). (This step determines **who** should pay.)
- Applying the cost shares to efficient costs to determine the notional level of costs to be recovered from customers. (This step determines **how much** they should pay.)
- Setting prices to recover this level of costs to be recovered from customers – subject to considering a range of factors, including the impact of prices on customers, regulated businesses and the community.

This review is focused on informing the step above that refers to establishing cost share ratios.

Figure 2.2 Cost sharing within the price determination process



Finally, we consider that it is important to distinguish between the NSW Government's share of costs, determined within the cost sharing framework, and any NSW Government funding provided via social policy, eg where there is an affordability concern. Several submissions to our Draft Report raised this issue, including:

- WaterNSW, which recognised that IPART has addressed affordability concerns in the past using community service obligation (CSO) funding to mitigate bill shocks, but considered this to be a "circular" solution [14]
- The NSW Farmers' Association, which encouraged the waiving of fixed water charges when exceptional circumstances prevail (such as when no water allocations are available)[15]
- The Murray Darling Basin Authority (MDBA), which encouraged IPART to be fully transparent about the costs that are met through NSW Government CSO funding.[16]

We agree with WaterNSW's view that addressing affordability through mechanisms other than cost sharing could be viewed as being circular. As set out in the next chapter, it is our view that we should set prices to reflect efficient costs. This is transparent, signals the efficient cost of service provision, promotes efficient consumption and investment decisions and is consistent with the National Water Initiative principle of full cost recovery in pricing.

Separately (and not within the scope of cost sharing), IPART considers the impacts of prices during the wider price review process, and can address affordability concerns by setting prices below the efficient costs. In this instance, the difference between the revenue generated from these prices and the efficient costs of service provision is funded by the NSW Government through a CSO payment or reduced returns as shareholder. Alternatively (or in addition), the NSW Government can decide to subsidise the cost of service provision as part of its broader social policy.

Keeping both the Government share of efficient costs (determined through cost sharing) and any subsidies for affordability concerns separate facilitates transparency in our price determination process and Government CSO funding.

2.3 Our current cost sharing framework and the aims of this review

The cost sharing framework currently in place takes the efficient and prudent capital and operating costs, excludes 'legacy costs', and then applies the 'impactor pays' principle to determine who should pay for the costs of each of WaterNSW and WAMC's activities.

14 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 6.

15 NSW Farmers' Association, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* December 2018, p 3. In July 2018, the NSW Government announced its Emergency Drought Relief Package, which includes financial assistance of up to $4,000 to all general security licence holders (and supplementary water access licence holders) in rural and regional NSW (see https://www.dpi.nsw.gov.au/climate-and-emergencies/droughthub/faq, accessed 22nd January 2019). The rebate subsidises the fixed component of bills for general security licence holders. The NSW Farmers' Association considered that this amount is unlikely to cover the full fixed water charge for the majority of irrigators and that, alternatively, the full amount of fixed water charges should be waived.

16 Murray Darling Basin Authority, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 2. The MDBA considers that this would greatly improve the transparency of the commercial costs of delivering public good outcomes and send clear signals on the real cost of the services provided by water authorities.

The costs of providing rural bulk water services have been shared between the NSW Government and customers since IPART has regulated these charges. For each review and determination of WaterNSW's and WAMC's prices, we have subjected the prevailing cost shares, by activity, to stakeholder consultation. We have considered all stakeholder comments and responses in determining cost shares and setting prices. Key milestones in IPART's regulation of bulk water charges, and determination of cost shares, are set out in the box below.

Box 2.2 Changes to our cost sharing framework over time

In **1998**, IPART's determination of bulk water charges used both beneficiary pays and impactor pays approaches as the basis for sharing costs between rural water customers and the NSW Government.[a]

In **2001**, IPART's determination of bulk water charges moved towards a greater reliance on the impactor pays approach. The costs attributable to pre 1 July 1997 ('line in the sand') activities as well as occupational health and safety and dam safety upgrade costs were deemed to be legacy costs, to be funded by the NSW Government.[b]

In **2006**, IPART's determination of bulk water charges maintained a focus on the impactor pays approach (largely maintaining the 2001 cost shares). Some costs within the occupational health and safety and water quality monitoring activities were allocated to the NSW Government, as they were found to be incurred to meet community expectations.[c]

In **2012**, the NSW Government asked IPART to identify options for determining the NSW Government's share of bulk water costs. IPART recommended the continuation of the existing approach to determining cost shares, using the cost allocation ratios that it had applied in the 2010 Determination, until 1 July 2017.[d]

In its **2017** review of Water NSW's charges, IPART decided to maintain the current cost share ratios, consistent with its earlier decisions. However, IPART decided that it would conduct an extensive, standalone review of the cost share framework prior to the next Determination.[e]

a IPART, *Bulk water prices for 1998/99 & 1999/00*, July 1998, p 11.

b IPART, *Department of Land and Water Conservation, Bulk Water Prices from October 2001*, Chapter 5, December 2001.

c IPART, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation*, Chapter 5, September 2006.

d IPART, *Review of Rural Water Charging Systems – Final Report*, August 2012, p 8.

e IPART, *WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, Chapter 9, June 2017.

This review had the following aims:

1. To outline and, if necessary, refine our cost sharing principles and objectives, which are currently based on the impactor pays principle
2. To review the current activity-based cost share framework and, if necessary, amend the framework, list of activities and cost share ratios
3. To further investigate an alternative service-based cost sharing framework, including developing a framework, identifying potential costs and benefits of moving to this framework, and assessing whether the benefits are likely to exceed the costs.

3 Principles underlying our cost sharing framework

We consider that prices for regulated monopoly services should reflect the full efficient costs of providing these services. This principle of 'full cost recovery' is consistent with the service provider recovering their efficient costs and provides price signals that encourage the efficient use of, and investment in, these services.

To determine prices for rural water services, under the cost sharing framework currently in place, we take the prudent and efficient capital and operating costs allowed to be recovered, exclude legacy costs[17] and apply the 'impactor pays' principle to determine who should pay for the costs of each of WaterNSW and WAMC's activities. In this way we determine the share of WaterNSW's and WAMC's efficient costs that should be paid for by water customers, and the share that should be paid for by the NSW Government on behalf of other users and the broader community.[18]

If WaterNSW or WAMC can earn non-regulated revenue from their regulated assets, we may also deduct a share of this revenue from their regulated cost bases. This would mean those parties contributing the non-regulated revenue would effectively pay a share of the regulated costs which, all other things being equal, would reduce regulated prices to water customers. Our practice has been to deduct a share of non-regulated income (50 per cent) from the regulated cost base, to provide the water business with a financial incentive to pursue non-regulated revenue (as it keeps a share of this revenue), while ensuring that a share of the benefits of this revenue flows on to customers through lower regulated prices.[19]

In this chapter, we begin by outlining our objectives for the review. We then set out and discuss our decisions on:

- Why we continue to favour the impactor pays approach to cost sharing, and
- How we will apply the impactor pays principle to identify impactors.

The next chapter examines practical considerations in how we use the impactor pays approach to determine the shares of WaterNSW and WAMC's costs to be recovered from rural water customers (via the prices we set) and the share that should be paid for by the NSW Government on behalf of other users and the broader community.

17 In the recovery of efficient costs, rural water customers should only pay for the share of efficient forward-looking costs that is required to service their use. In other words, they should not pay if there are unavoidable legacy costs. These are costs resulting from past users or previous uncommercial investment and management decisions, which are unrelated to the efficient forward-looking cost of providing services to customers.

18 WaterNSW and WAMC's opex and capex allowances are allocated to a list of agency-specific 'activities'. We then apply 'cost share ratios' (ie, the percentage of the efficient cost that is to be recovered from customers) to each of these activities to calculate what proportion of that expenditure should be recovered by customers (through our prices) and the NSW Government (the residual).

19 For example, in the 2008 Sydney Water price review, we deducted 50 per cent of the rental income Sydney Water receives from renting its regulated assets (such as reservoirs, to telecommunication carriers) from the regulated cost base, and we have maintained this approach at each subsequent price review. (IPART, *Review of prices for Sydney Water Corporation from 1 July 2016 to 30 June 2020 – Final Report*, June 2016, p 77).

3.1 Objectives of our cost sharing framework

In conducting this review of our cost sharing framework, our objectives are that our cost sharing framework should be transparent, cost-reflective and practical.

Transparent

We aim to ensure that the cost sharing framework is transparent, in regard to both the cost of providing specific services and the share of costs between customers and the NSW Government. This includes the quantum and basis on which the NSW Government is providing funding to WaterNSW and WAMC.

Cost-reflective

We aim to ensure that the cost sharing framework reflects the efficient costs of the services. This promotes efficient investment decisions and consumption by water suppliers and customers.

Practical

We aim to ensure that the cost sharing framework can be applied practically. A practical framework should be easy to understand and, at application, not impose overly onerous administrative burden on either IPART or the regulated business.

Additionally, it should reflect the operations of the business, so that it can be applied consistently over time, and be flexible enough to efficiently and effectively respond to changes in the business or water sector.

3.2 We will continue to share costs based on the impactor pays principle

Prices for water services should reflect the efficient, forward-looking costs of providing these services to customers. This promotes the efficient use and allocation of resources, to the benefit of society. As part of our current cost-sharing framework, we use the impactor pays principle to determine water customers' share of WaterNSW and WAMC's costs.

Under the impactor pays principle, costs are allocated to those who create the need to incur the cost. Water customers face the costs of the services they receive, including costs WaterNSW and WAMC incur to comply with environmental and other regulatory requirements in delivering those services. We consider that using the impactor pays principle to determine water customers' share of WaterNSW and WAMC's costs is consistent with cost-reflective pricing. A description of the parties who are potential impactors for WaterNSW and WAMC activities (and therefore costs) is set out in the box below.

Box 3.1 Potential impactors for WaterNSW and WAMC costs

The majority of the activities undertaken by WaterNSW and WAMC are clearly related to providing services to rural water customers. However, some activities also provide services to other users who are not customers and do not pay regulated prices. In applying the impactor pays principle, we are looking to distinguish between the costs that customers impose on the businesses and the costs imposed by other users.

Potential impactors include:

- Rural water customers (or 'consumptive users' being water entitlement holders that are subject to WaterNSW and WAMC's regulated prices, as determined by IPART). For example:
  - Private irrigators and irrigation companies
  - Local water utilities (including councils)
  - Environmental water licence holders
- Other users (non-customers):
  - Holders of basic landholder rights
  - Tourism and recreational water users
  - Downstream communities (eg for some flood and dam safety activities)
  - Broader NSW/Australian community (eg for some monitoring and planning activities).

Our decision is that we will continue to allocate WaterNSW's and WAMC's efficient costs between water customers and the NSW Government (on behalf of other users and the broader community) based on the impactor pays principle – ie, that those who create the need for the cost to be incurred should pay the cost. In applying the impactor pays principle, our counterfactual starting point is a world without a high consumptive use of water.[20]

Decision

1 WaterNSW and WAMC's efficient costs will continue to be allocated between water customers and the NSW Government (on behalf of other users and the broader community) based on the impactor pays principle, ie, those that create the need for the cost to be incurred should pay the cost.
   - In applying the impactor pays principle, the counterfactual starting point is a world without a high consumptive use of water.

3.2.1 Reasons for decision

In our Draft Report we maintained our position that sharing costs using the impactor pays principle achieves better efficiency outcomes than sharing costs using the beneficiary pays principle. We also considered that it is a more practical and transparent approach than beneficiary pays and we noted that it is consistent with the funding hierarchy we have used for other services.

However, in response to stakeholder concerns about how we apply the impactor pays principle in practice, we defined a counterfactual starting point so that we can transparently

20 That is, a world without the need for the declared monopoly services subject to price regulation by IPART.

identify the impactors for each activity. We defined the counterfactual as a world without a high consumptive use of water resources.[21,22]

While some stakeholders supported our use and application of the impactor pays principle,[23] other stakeholders questioned whether our counterfactual starting point was correct or considered that our counterfactual definition was overly simplistic.[24]

We acknowledge that distinguishing between impactors and beneficiaries, and allocating costs in situations where multiple impactors are identified, both require careful consideration and judgement. However, in our view applying the impactor pays principle, with our counterfactual starting point and through an activity-based framework,[25] is the most practical and sound approach available to achieve the objectives of our cost sharing framework.

Efficiency, practicality and consistency

Under the impactor pays principle, water customers face the costs of the services they receive, including costs WaterNSW and WAMC incur to comply with environmental and other regulatory requirements in delivering those services. For example, if a dam were required solely to deliver bulk water to licence holders, and that dam triggers a regulatory requirement for WaterNSW to construct and operate fish ladders, then (under the impactor pays principle), water customers should pay for the prudent and efficient costs of WaterNSW complying with this environmental requirement.

In contrast, the sharing of costs could be based on the beneficiary pays principle. Under this principle, the costs of a service or activity would be allocated to those who benefit from the service or activity. Water customers would pay for the direct costs of water supply, but would only pay for any environmental mitigation or remediation costs associated with water supply to the extent they benefit from these activities. This would likely mean that environmental remediation or mitigation work, such as that associated with the fish passage example outlined above, would be paid for by the broader community (through the NSW Government) – even though it was driven by the requirement to deliver water to customers.

We prefer the impactor pays principle as:

- It is more efficient for costs to be allocated to those who create the need to incur these costs (see boxes below)

21 In terms of WaterNSW (rural), we saw this as a world without the need to physically regulate water sources (eg, build dams). In terms of WAMC, we saw this as a world without the need to manage NSW water resources.

22 To identify the impactors of a particular activity, we take our counterfactual (ie, our 'without world') and from this starting point we identify which parties have driven the need for the business (WaterNSW or WAMC) to undertake the activity.

23 See, eg, Department of Industry, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 1 and Murray Darling Basin Authority, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 1.

24 See, eg, WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 5. NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 3. Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 2.

25 In our Issues Paper we proposed that an alternative service-based framework could better facilitate the application of the impactor pays principle (at least in theory). Chapter 5 sets out our decision to maintain the activity-based framework as it is the most practical approach available.

- We consider it is more cost reflective and therefore more equitable for costs, such as the costs of complying with environmental regulatory requirements, to be allocated to those who create the need to incur the cost
- In many cases, it is more transparent and practical to allocate costs to impactors – who are typically water users – than beneficiaries. For example, it may be difficult to attribute the benefit of protecting species diversity in a river system to a specific segment of the community.

In the following sections we set out a number of examples to support our view that the impactor pays principle is more appropriate than the beneficiary pays principle for allocating the costs of rural water services. We also consider the consistency of the impactor pays principle with the funding hierarchy that we have applied across a range of services previously.

Sharing the costs of infrastructure and associated environmental costs

The box below provides an example of how the two principles differ in their application in the case where a dam is constructed and its environmental impact needs to be mitigated. This example highlights a key advantage of the impactor pays principle over the beneficiary pays principle. While the costs of protecting the environment have a benefit to the broader community, these costs only need to be incurred due to the demand of the local council area for water from the dam. If we do not charge the party that caused the need for the cost to be incurred, we would promote the inefficient use of and investment in the service, eg, by leading to excessive consumption of water services above the economically efficient level.[26],[27]

26 One argument provided in support of applying the beneficiary pays principle is that it provides a better incentive to the Government to ensure the costs of environmental management activities do not exceed their benefits. That is, in deciding the level of environmental regulation, the Government will have a stronger incentive to weigh up the costs and benefits of these activities if it is funding these costs. We agree that this process is important when conducting an upfront assessment of a new regulation. However, this outcome is still inefficient for society to the extent that customers do not face the full costs of supplying water services to them. (IPART, *Review of rural water cost shares Issues Paper*, April 2018, p 10.)

27 We acknowledge the NSW Irrigators Council's position that consumption decisions are affected by factors other than price (see NSW Irrigators Council, *Submission to Independent Pricing and Regulatory Tribunal Review of rural water cost shares*, June 2018, pp 12-13). However, we are of the view that efficient price signals are still important. Constraints on consumption decisions can potentially be removed.

Box 3.2 The impactor pays and beneficiary pays principles

This box presents an illustrative example of the application of the impactor pays and beneficiary pays principles.

Applying the impactor pays and beneficiary pays principles

In this example, a local water utility is a high security entitlement holder on a regulated river and a dam is built to supply water to the local water utility, which in turn supplies water to the businesses and households in the area. The dam creates two activities, ie, two sets of costs:

1. The costs of building and maintaining the dam to supply water
2. The costs of environmental management activities, which are prescribed in regulation to limit the dam's impact on the environment (ie, to address negative externalities resulting from building the dam).

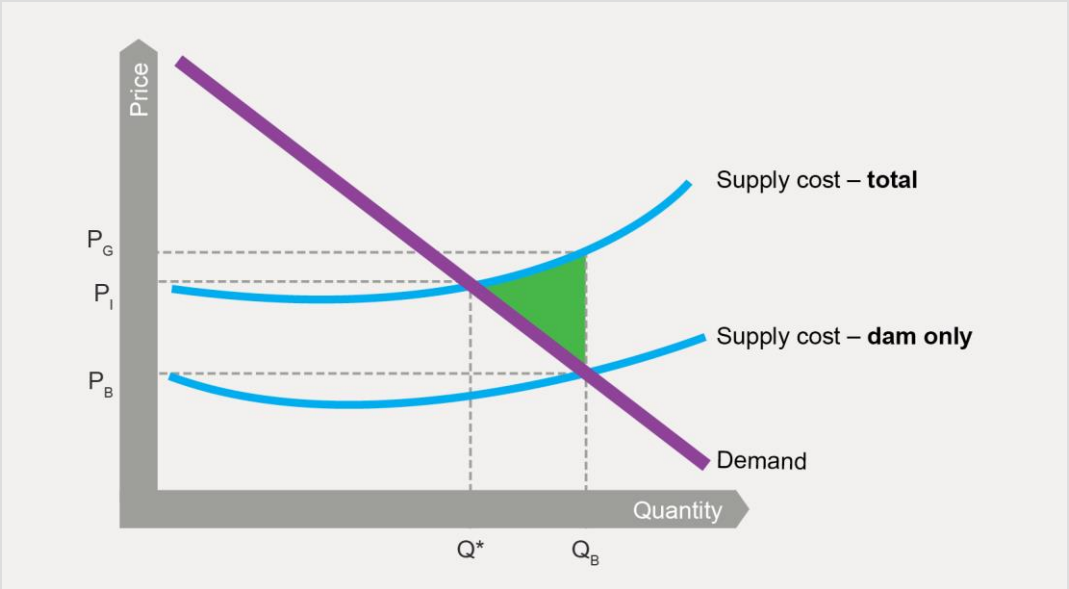
In this example:

- Under the impactor pays principle, the local water utility would pay for both costs
- Under the beneficiary pays principle, the local water utility would pay for the cost of building and maintaining the dam, while the government would fund the cost of environmental activities.

Why we prefer the impactor pays principle

This is shown in the stylised figure below. The demand from the local water utility for water services is shown by the downward sloping demand curve (purple line). The cost of building, maintaining and operating the dam is shown by the 'supply cost – dam only' curve. The total cost of building, maintaining and operating the dam and managing the environmental costs resulting from the dam is shown by the 'supply cost – total' curve.

Figure 3.1 Stylised supply of water services under impactor and beneficiary pays



The efficient level of water services supplied to the local water utility is given by the level Q*, where the demand for an additional unit of water services is equal to the cost of supply (or, in other words, the benefit to society of water supply equals its cost). This is the quantity of water services supplied under the impactor pays principle, where water customers would pay for both costs (at price P_I).

Under the beneficiary pays principle, water customers would consume a higher quantity of water services (Q_B in this example) because the price of water services would be lower (P_B) – or, in other words, because they would not face the true cost of providing water services to them. The government would pay the difference between the total cost of supplying water services (P_G) and the price water customers pay (P_B). This would be inefficient for society, because the demand for (or utility gained from) an additional unit of water services is lower than the cost of supply, and the welfare loss for society is shown by the green shaded triangle.

This example (and the following example) is based on the concept of efficient marginal cost pricing (ie, that an efficient level of consumption is expected to occur when the price of an additional unit of consumption is set equal to the marginal cost of that additional unit of consumption). We note that while a large proportion of bulk water costs are fixed in the short run, all costs are variable in the long run. Therefore, in the long run there is an economic argument for prices to reflect the full efficient costs of providing services to customers.

Sharing the costs of infrastructure that provides additional or ancillary services

The next box again shows how the two principles differ in their application, this time in the case where a dam is constructed (as above), but also facilitates recreational use (ie, as well as the water storage and delivery services). The use of the dam by recreational users imposes no additional costs, and this example again highlights a key advantage of the impactor pays principle over the beneficiary pays principle. While the dam has a benefit to the broader community (ie, the recreational users), its costs only need to be incurred due to the demand for water from the dam. If we do not charge the party that caused the need for the cost to be incurred, we would promote the inefficient use of and investment in the service, eg, leading to excessive consumption of water services above the economically efficient level.[28]

28 We note that in the case where recreational use of the dam requires additional activities and imposes additional costs (eg, car parks or boat ramps), the impactor and the beneficiary are the same (ie, the recreational users). Allocating the costs of these additional activities would give the same result under either the impactor pays or beneficiary pays approach.

Box 3.3 The impactor pays and beneficiary pays principles

This box presents another illustrative example of the application of the impactor pays and beneficiary pays principles.

Applying the impactor pays and beneficiary pays principles

As in the previous example, a local water utility is a high security entitlement holder on a regulated river and a dam is built to supply water to the local water utility, which in turn supplies water to the businesses and households in the area.

In this case there are also other beneficiaries from the dam. These are recreational users whose additional activities generate no additional costs.

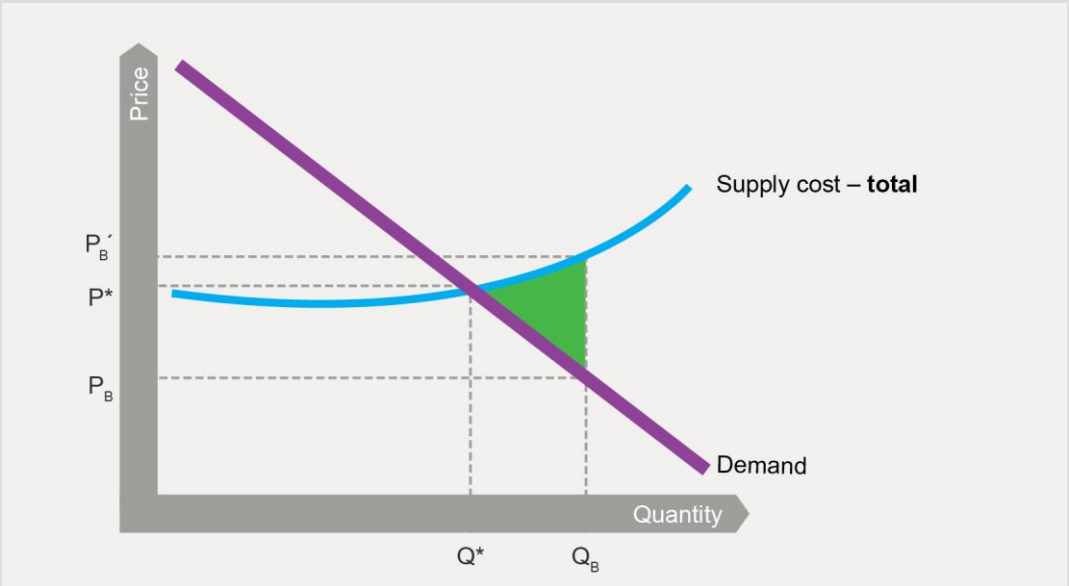
In this example:

- Under the impactor pays principle, the local water utility would pay for all of the costs of the dam
- Under the beneficiary pays principle, the costs of the dam would be allocated between the local water utility and recreational users.

Why we prefer the impactor pays principle

Again this is shown in the stylised figure below. The demand from the local water utility for water services is shown by the downward sloping demand curve (purple line). The total cost of building, maintaining and operating the dam (including managing the environmental costs resulting from the dam) is shown by the 'supply cost – total' curve.

Figure 3.2 Stylised supply of water services under impactor and beneficiary pays



The efficient level of water services supplied to the local water utility is given by the level Q*, where the demand for an additional unit of water services is equal to the cost of supply (or, in other words, the benefit to society of water supply equals its cost). This is the quantity of water services supplied under the impactor pays principle, where water customers would pay a price P*.

Under the beneficiary pays principle, water customers would demand a higher quantity of water services (Q_B) because the price of water services would be lower (eg, P_B) – or, in other words, because they would not face the true cost of providing water services to them (P_B'). This would be inefficient for society, because the demand for an additional unit of water services is lower than the cost of supply. The increased demand would lead to increased total costs, compared to the efficient level, and the welfare loss for society is shown by the green shaded triangle.

Sharing the costs of infrastructure when there are both impactors and beneficiaries

The box below again considers a case where there is both an impactor (a local water utility) of and beneficiaries (recreational users) from an investment in a dam. It shows that:

- While the costs of the infrastructure have a broader benefit than serving the local water utility (the impactor),
- Sharing these costs between impactors and beneficiaries on the same basis could promote the inefficient use of and investment in the service:
  - For example, by leading to excessive consumption of water services above the economically efficient level.

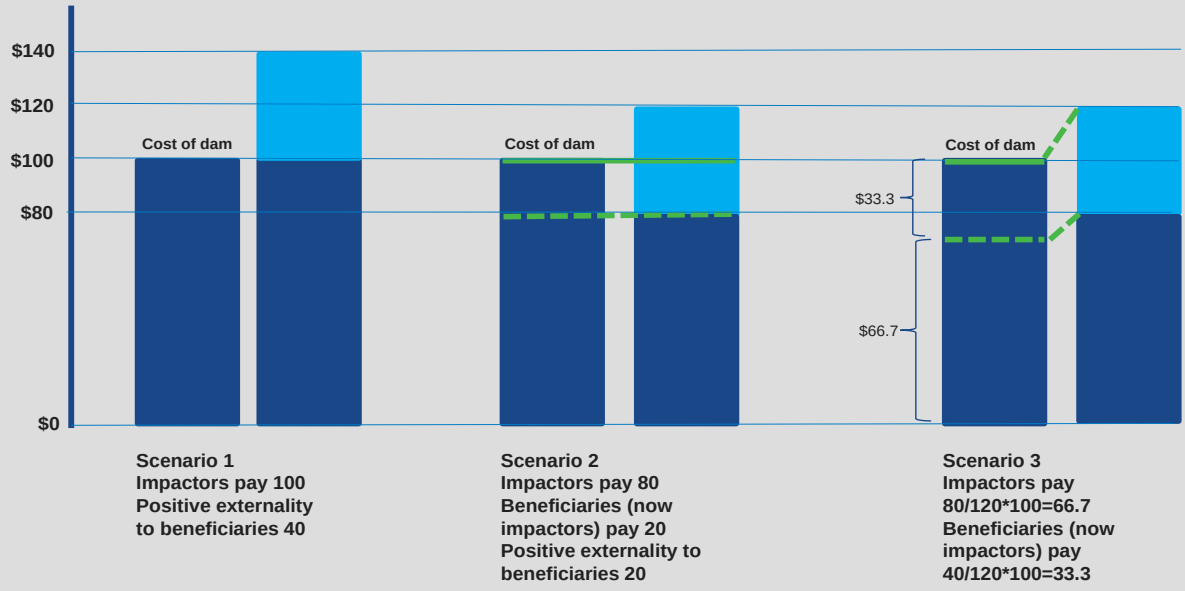
Box 3.4 Cost sharing with both impactors and beneficiaries

Consider again the example in Box 3.2 where a dam has been built to serve a local water utility. Assume that the costs of building, maintaining and operating the dam, including complying with environmental regulatory requirements, are $100. Under the impactor pays principle, the local water utility would pay $100 for water supplied from the dam.

However, as in the example in Box 3.3, there are other beneficiaries from the dam (eg, recreational users who value its use at $40), but these additional activities generate no additional costs. In the figure below we consider three scenarios:

1. The local water utility has the capacity to pay the full $100 cost of the dam
2. The local water utility has the capacity to pay $80, and the remaining $20 is paid by recreational users
3. The local water utility has the capacity to pay $80, recreational users value the dam at $40, and the $100 cost is shared between the local water utility and recreational users on this basis.

Figure 3.3 Considering costs under the impactor and beneficiary pays principles



In the first scenario, the full cost of supplying water ($100) would be recovered from the local water utility and there would be a positive externality of $40 (ie, the benefit to recreational users).

In the second scenario, we could recover $80 from the local water utility and $20 (the residual costs) from recreational users. Recreational users in effect become impactors for the dam as the investment would not be efficient if not for the value they ascribe to it. Recognising the value recreational users have for the dam ensures efficient investments are still undertaken.

In the third scenario costs are allocated according to willingness to pay. Under this scenario:

- The local water utility pays: 80/120*100=66.7
- Recreational users pay: 40/120*100=33.3

We consider this provides an inefficient price signal to the local water utility – the original impactor for the dam. That is, similar to the example above, the local water utility may consume a higher quantity of water services (because the price of water services would be lower than it otherwise would be) and this would be inefficient for society.

Consistency with our funding hierarchy

Our preference for the impactor pays principle is consistent with our approach across a range of services, where we have generally adopted or promoted the following funding hierarchy:

1. Preferably, the party that created 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 cases, 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.

For example, we recommended the adoption of this funding hierarchy in our review of the funding framework for Local Land Services in NSW.[29] Under our funding hierarchy we seek to identify and charge impactors first. If we cannot identify and/or charge impactors (or it is too difficult or costly), we then seek to identify and charge beneficiaries. If we cannot identify and/or charge beneficiaries (or it is too difficult or costly), the costs are borne by the NSW Government. In the case of rural water, we can identify impactors but it is not always practical to charge them,[30] in which case the NSW Government contributes on their behalf.

Defining the counterfactual – a world without high consumptive use

Submissions to our Issues Paper suggested that there was no consensus among stakeholders on the definition and application of the impactor pays principle. To help address this, in our Draft Report we established a counterfactual starting point from which we would apply the impactor pays principle. By clearly defining a counterfactual starting point, we are able to more transparently identify the underlying impactors of each activity and allocate costs between parties accordingly. We defined the counterfactual as a world without a high consumptive use of water resources.

In terms of WaterNSW (rural), we saw this as a world without the need to physically regulate water sources (eg, build dams). We considered this was appropriate as we found that the initial purpose of the construction of many of the rural dams WaterNSW operates and manages was to support consumptive use, including the development of townships and the agriculture industry.

In terms of WAMC, we saw this as a world without the need to manage NSW water resources. We considered that the need for WAMC's services, such as planning and managing water resources and issuing and protecting licences, would not be required if there was not high consumptive use of the water resources, where one group/individual's use of water impacts on another group/individual's ability to use the resource.

29 For further information, see IPART, *Review of funding framework for Local Land Services NSW – Draft Report*, 2013.

30 For example, it may be impractical for WaterNSW to charge recreational users that impact on WaterNSW's costs.

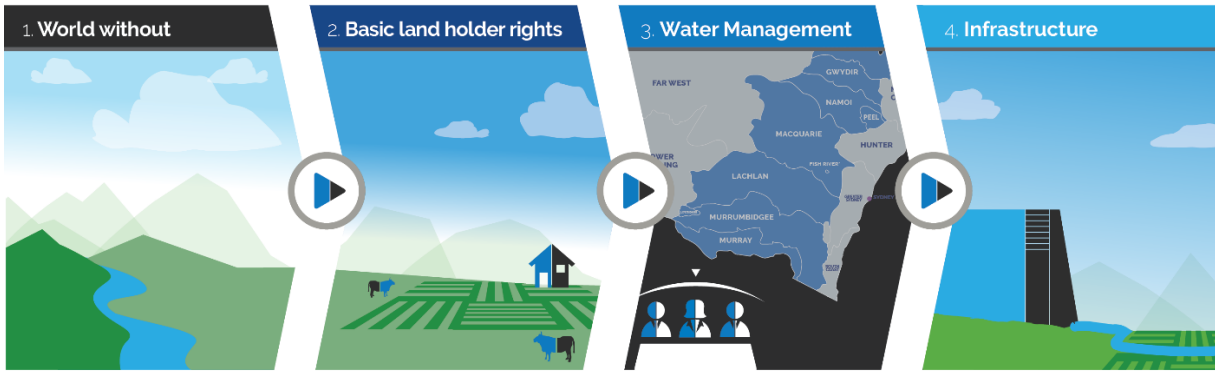
Stakeholder views on the counterfactual starting point

Some submissions to the Draft Report questioned whether our definition of the counterfactual starting point was correct or considered that it was overly simplistic. In particular:

- WaterNSW argued that it is possible to have high consumptive use of water without regulated infrastructure and services.[31] In terms of WAMC services, WaterNSW found it "more difficult to frame a counterfactual", given that a rules based system for managing water "was always inevitable"[32]
- The NSW Irrigators Council considered that this would always lean towards aligning the cost to water users. The counterfactual does not allow any flexibility to consider the history and original intent of the need for the activity[33]
- Lachlan Valley Water considered that this makes it difficult to accurately identify the extent to which the different categories of users cause the need for the costs to be incurred under a range of different climate conditions.[34]

We have maintained our existing definition of the counterfactual starting point. How we use the counterfactual starting point in applying the impactor pays principle and identifying impactors can be illustrated using the figure below.

Figure 3.4 Using the counterfactual in applying the impactor pays principle



31 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 5. For example, in NSW there is still a substantial level of consumptive use of water from unregulated rivers, it is just that the water is stored in on-farm storages rather than state owned dams and other infrastructure.

32 WaterNSW cites the *Water Act 1912 (NSW)* as evidence of this.

33 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 3. As discussed in Chapter 4, we have recognised that multiple objectives may have driven the initial Government decision to provide infrastructure through:

- Our decision to 'draw a line in the sand' when establishing the RAB.
- Our focus on efficient, forward-looking costs when setting maximum prices for regulated services.

34 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 2. Lachlan Valley Water argues that "Under extreme dry conditions such as the Millennium drought, dam and river operation is primarily to meet high priority needs rather than the wider population of consumptive users, and this needs to be recognised within the cost shares." We consider that this position does not take account of the fact that we distinguish between High Security (HS) and General Security (GS) entitlements in the pricing of rural bulk water services, where a HS premium reflects the greater security (ie, priority in water allocations) and reliability given to HS entitlement holders relative to GS entitlement holders. It also does not recognise that WaterNSW's and WAMC's costs are largely fixed and independent of water delivered, at least in the short to medium term (although customers have generally favoured a price structure with a higher proportion of usage charges).

Our counterfactual starting point is the world without a high level of consumptive use. This could be the natural environment or could also include consumption by holders of basic landholder rights. It may involve some degree of water monitoring or the remediation of naturally occurring events. As consumption increases water management is required, including to mitigate the environmental impacts of extraction (ie WAMC activities). Infrastructure may also be built to facilitate the storage and delivery of water (ie WaterNSW activities).

To identify the impactors for a particular activity, we first establish the counterfactual starting point (ie, a world without high consumptive water use), and from this starting point we identify which parties are driving the need for the business (ie, WaterNSW or WAMC) to undertake the activity and incur the costs of the activity. That is, when we apply the impactor pays principle to an individual activity, we compare the need for that activity back to the counterfactual to identify impactors. We do not consider what other activities are being undertaken.

We acknowledge WaterNSW's point that there may well be significant consumptive use in unregulated rivers, however these rivers are still covered by WAMC's activities. That is, there is still a need to manage water entitlements and allocations (and for WAMC to incur costs in undertaking its activities) where there is high consumptive use, even in the absence of infrastructure. While water management may have been envisaged for some time, as WaterNSW has argued, the activity itself is triggered or required because of some critical level of extraction.

Appendix B sets out how we have used the counterfactual starting point in identifying the impactors for each WAMC and WaterNSW activity.

4 Applying the impactor pays principle to share costs

Under the impactor pays principle, the party that creates the need to incur the cost should pay the cost. Therefore, if rural water customers create the need to incur a share of the cost of an activity, then they should pay this cost. However, rural water customers should only pay for the share of forward-looking costs that are required to service their water use. In other words, they should not pay if:

- There are unavoidable legacy costs. These are costs caused by past users and activities which are unrelated to the efficient, forward-looking cost of providing services to current and future customers
- Costs are created by other impactors. If it is not possible to directly charge these other impactors, then these costs should be funded by the NSW Government.

Below we discuss how we consider costs should be shared in these two cases.

4.1 Unavoidable legacy costs

In general, legacy costs should not be reflected in prices for current and future users because they are costs that a business must incur due to past users or previous uncommercial investment and management decisions. The inclusion of these costs in charges for rural water services does not provide accurate price signals to current and future customers, nor is there any economic efficiency rationale for the cost inclusion (ie, it is not related to the cost of providing the services to the customers).

Our decision is that we will continue to define legacy costs as costs caused by past users and activities that are not attributable to current and future users of the regulated service. In effect, we assign these costs a zero customer share and they are fully funded by the NSW Government. We note that we do not consider that costs arising due to changes in regulations or standards are legacy costs.

Decision

2 Legacy costs are considered to be those costs caused by past users and activities that are not attributable to current and future users of the regulated service. Legacy costs should not be reflected in the prices paid by current and future users.

  – Changes in costs due to changes in regulations or standards are not considered legacy costs.

4.1.1 Reasons for our decision

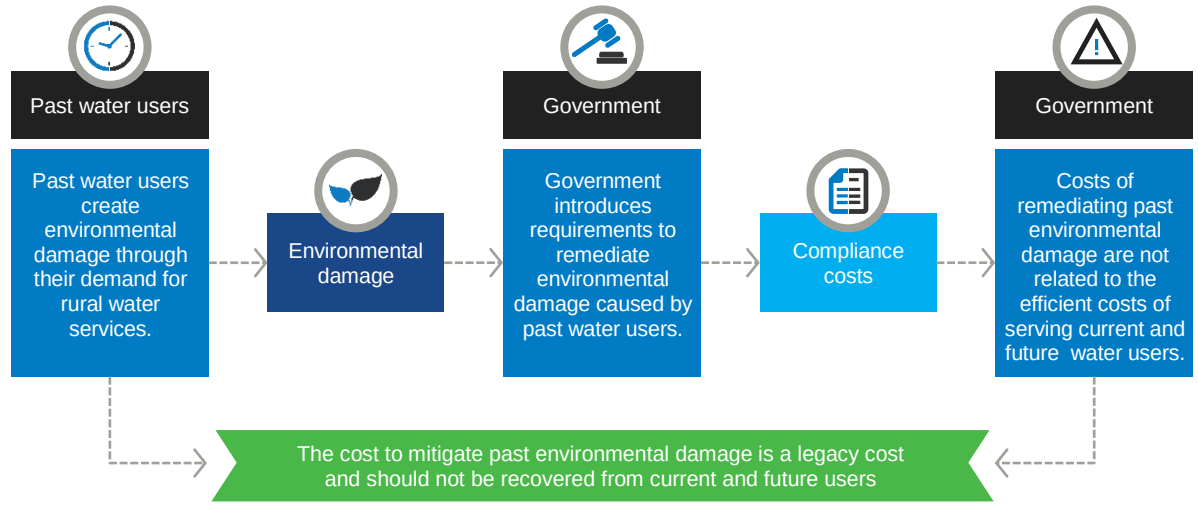
Our Draft Report clarified the definition of legacy costs, which we considered to be costs caused by past users and activities which are unrelated to the efficient forward-looking costs of providing services to current and future customers. Additionally, our Draft Report

specified that changes in costs due to changes in regulations or standards would not be considered legacy costs as these are a 'cost of doing business'.

How we define and identify legacy costs

We consider that there are potentially two aspects of legacy costs. First, there may be costs incurred today and in the future due to past users, eg, the cost of remediating past environmental damage. An illustrative example of the steps to identifying legacy costs in this case is shown in the figure below.

Figure 4.1 Identifying legacy costs: past environmental damage



Data source: IPART analysis.

We have recognised legacy costs of this type previously in our consideration of river salinity. In the late 1960's, river salinity rose to levels high enough to cause damage to irrigated crops and exceeded the World Health Organisation's recommendations for human consumption. It was only in the mid 1980's that salinity was recognised as one of the most significant environmental and economic challenges facing the Murray-Darling Basin. This then precipitated a coordinated agreement to reduce salinity, rehabilitate irrigation areas and support sustainable farming practices and the environment.[35]

To the extent that we can attribute the high concentration of salt to poor policy and/or farming practices in the past, we would allocate a proportion of funding these remediation costs to the NSW Government. However, to the extent that current irrigation practices exacerbate river salinity, then customers are also 'impactors' of ongoing efforts to manage river salinity and should be required to pay their share of its costs.

The second aspect of legacy costs is where there may be costs incurred today and in the future because of previous poor investment and management decisions, eg, where costs should have been incurred and paid for by previous users rather than current users. This is also an aspect of legacy costs we have recognised previously, when we decided that the costs required to bring pre-1997 infrastructure up to the standards that existed in 1997 should be treated as legacy costs (see box below).

35 See Murray–Darling Basin Ministerial Council, *Basin Salinity Management 2030 BSM2030*, November 2015, p 1.

Box 4.1 Costs of reaching dam safety standards applying in 1997

In our 2001 review of rural bulk water prices, we determined that legacy costs would be those current and future costs attributable to pre-1997 activities and/or the cost of bringing infrastructure to prevailing 1997 standards.[a] The decision to classify legacy costs this way acknowledged that historical activity had meant that dam infrastructure was not up to the safety standards applying when we took on responsibility for setting prices in 1997.

Therefore, to set forward-looking prices, we did not include the 'catch-up' expenditure required to reach the prevailing standards and regulations. These costs were defined as legacy costs, as those standards should already have been met. That is, expenditure required to reach standards established at or before 1 July 1997 would be categorised as legacy costs, but expenditure required to maintain those standards, or to meet standards established after that time, would not form part of legacy costs and would be subject to our cost sharing framework. This ensures that rural water customers only pay the share of efficient, forward-looking costs that corresponds to their use of the regulated services.

a IPART, *Department of Land and Water Conservation, Bulk Water Prices from October 2001*, December 2001, pp 31-32.

The first aspect of legacy costs may be transitional, eg, if we can remediate the environmental damage associated with past users. We expect the second aspect to always be transitional. For example, while assets need to be brought up to standard, once all infrastructure that existed pre-1997 is up to the standard that existed at 1997 then there should be no more legacy costs.

Changes in costs due to changes in regulations or standards are not legacy costs

Some stakeholders argued that our application of legacy costs in the past has set a precedent for the NSW Government to fund the costs of bringing infrastructure up to **new** regulatory or compliance standards. For example, the NSW Irrigators' Council (NSWIC) suggested broadening and clarifying the definition of legacy costs to include a "change in government policy that has created additional costs that have neither been demanded by extractive water users nor been the result of extractive water users".[36] NSWIC made reference to the Australian Competition and Consumer Commission (ACCC), which suggested that any new environmental or safety obligations may be considered legacy costs or grandfathered on the basis that any new regulatory obligations should not materially disadvantage existing users.[37]

Similarly, the Gwydir Valley Irrigators Association considered that increasing administration requirements for new legislation such as the Basin Plan, fish passages (environmental measures), dam safety requirements, flood monitoring and river monitoring should be considered legacy costs.[38]

36 NSW Irrigators Council, *Submission Independent Pricing and Regulatory Tribunal Review of rural water cost shares*, June 2018, p 10.

37 ACCC, *Allocation of costs between government and users in the regulation of wholesale water service providers in NSW*, Working Paper no. 7, September 2012, pp 13-14. The ACCC viewed that (in-principle) any new regulatory obligations which impose significant costs on government-owned businesses should not necessarily be allowed to pass these costs onto existing customers. In practice, this means that any increases in environmental or safety obligations driven by increasing community expectations on existing asset infrastructure be considered legacy costs or grandfathered. However, any new assets constructed after the introduction of the new obligations pass on the total cost of construction and compliance onto customers.

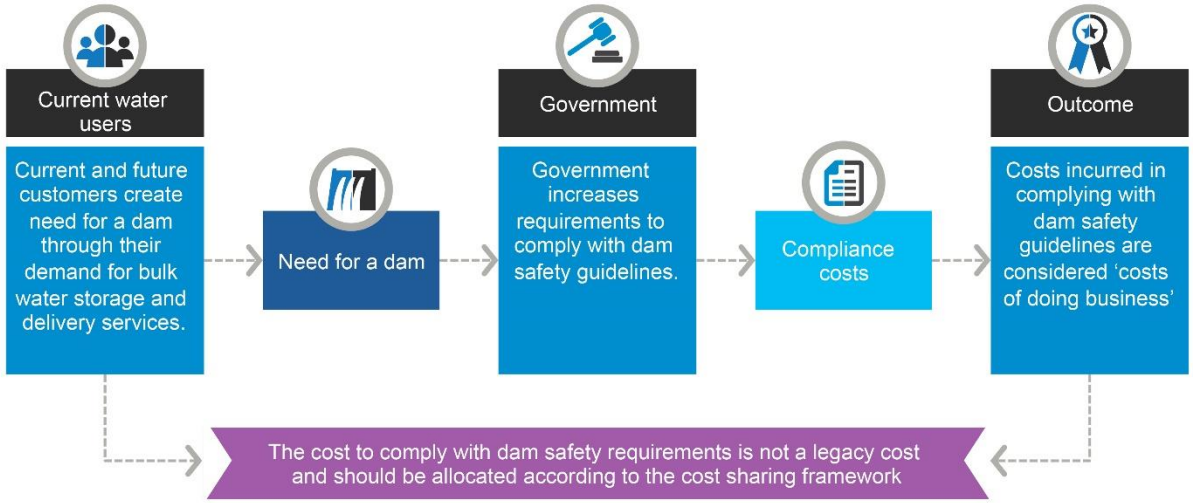
38 See Gwydir Valley Irrigators Association, *Submission to IPART's Review of Rural Cost Sharing Framework*, June 2018, p 2.

Our decision to classify some costs as legacy costs in 2001 acknowledged that previous poor investment and management decisions had meant that dam infrastructure was not up to the current standards. Therefore, to set forward-looking prices, we did not include the 'catch-up' expenditure required to upgrade assets to meet the prevailing standards and regulations. These costs we defined as legacy costs.

However, we consider that costs associated with maintaining the standards and any future changes in standards and regulation should not be classified as legacy costs as these are part of the forward looking costs of the business. They are not a 'catch up' cost required because infrastructure is below the current standards. An illustrative example of the steps in considering the treatment of costs associated with a change in regulations or standards is shown in the figure below.

We consider that our decision in 2001 does not set a precedent to classify costs attributed to changes in regulation or standards as legacy costs.

Figure 4.2 Illustrative example for considering costs of a standard change



Data source: IPART analysis.

Stakeholder views on legacy costs

Some stakeholders continue to consider that the suite of legacy costs should be broader than our current definition. Both Lachlan Valley Water and NSWIC consider that the WAMC activity W05-03 *Environmental Water Management* should be treated as a legacy cost, for the following reasons:

- Treating this activity as a legacy costs recognises that dams were built for a variety of reasons including flood mitigation, urban development, stock and domestic supply as well as irrigation[39]

39 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 5. Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 3.

- The management of environmental water is required to meet increasing community standards and expectations[40]
- Environmental water management would continue to be required even if all extractive user demand ceased, due to the fact that the dams have been built and would not be removed.[41]

Similarly, Lachlan Valley Water views the WaterNSW activity *Environmental Planning and Protection* as a legacy cost because the activity is required to mimic the natural flows that have been altered because of the dam. According to Lachlan Valley Water, even if all extractive user demand ceased, the dam would still exist and therefore the activity would still be required.[42]

As set out in our Draft Report, we have recognised that multiple objectives may have driven the initial Government decision to provide infrastructure. In previous determinations we have taken account of the fact that most existing infrastructure is the result of past Government objectives beyond the supply of water. We did this by using efficient forecast renewals expenditure for these assets in establishing the efficient costs of rural bulk water services (rather than historical expenditure on these assets), which is consistent with our approach of recovering efficient, forward looking costs (see box below).

Box 4.2 Recognising the historical context of WaterNSW's infrastructure

Our role in regulating prices for rural bulk water services began in 1996. At that time we recognised that rural water infrastructure assets built in the late 19th and early 20th century were built in part as a government policy to expand agriculture and rural development. Water prices in 1996 were still subsidised as it was only in 1994 that governments across Australia stated that they intended to fully recover the costs of service provision.

Therefore, when we set the initial regulatory asset base (for pricing purposes) in 2001, we drew a 'line in the sand' which recognised this potential over-investment at time of the decision making process. The resulting prices reflected an annuity payment equivalent to forecast capital expenditure and renewals required to maintain the infrastructure and continue to provide services (rather than reflecting historical expenditure on the assets).

Source: IPART, *Department of Land and Water Conservation, Bulk Water Prices from October 2001*, December 2001, p 23 and pp 31-32.

On the issue of "increasing community expectations", as set out above, we consider that changes in costs due to changes in standards or regulations – even where driven by a change in community expectations – are a cost of doing business, as they are in any other industry. Accordingly, they are not considered legacy costs and are allocated between customers and the Government in line with the cost sharing framework.

Finally, we do not agree that the costs of mitigating the environmental impacts of dams and other infrastructure should be considered legacy costs. We do not consider it reasonable to

40 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 3.
41 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 5.
42 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 3.

assume dams would remain in their current form if all extractive use ceased – particularly if there was a community need (or regulatory requirement) for rivers to return to (or mimic) their natural state. In our view:

- Any investment in an asset carries the risk that customers (or users) may stop requiring the service provided by that asset. This risk is a cost faced by the service provider, ie, a cost of providing services to users
- We have acknowledged this risk in previous determinations of rural water prices for the coastal valleys, where we have set prices below cost reflective levels
- However, we consider that this is a short term approach. In the long run, if an investment is no longer economic (ie, can no longer recover its costs) then it is up to the service provider, in this case WaterNSW, to decide how to respond
- In the event of a 'legacy dam', we would expect WaterNSW to undertake a cost-benefit analysis of the available options, which would include modifying the existing infrastructure.

That is, we do not agree with the assumption that "the dam would not be removed" or "the dam would still exist". Instead, we expect that WaterNSW would make a decision on what services to provide and how, based on the costs and benefits of the available options. To the extent WaterNSW continues to provide services to users, then users should be required to pay an appropriate share of the costs.

4.2 Costs caused by other users

Under the impactor pays principle, the party that creates the need to incur the cost should pay the cost. Therefore, if rural water customers create the need to incur a share of the cost of an activity (ranging from 0% to 100%), they should pay their share of this cost.

Water customers should only pay for the share of efficient forward-looking costs that are required to provide services to them. In other words, they should not pay if costs are created by other impactors. If it is not possible to directly charge these other impactors,[43] or these costs are incurred to deliver services to the broader community[44], these costs should be funded by the NSW Government.

When identifying the impactor(s) causing the need to undertake an activity and incur a cost, our counterfactual starting point is the world without the need for the regulated service. In Appendix B, we identify the impactors for each of WaterNSW and WAMC's activities. In the

43 There may be a number of other users that contribute to WaterNSW's and WAMC's costs. For example, these may include recreational users. Water customers should not pay for the costs that are caused by other users.

44 Some of WaterNSW's activities may also provide a broader benefit to society. For example, as well as delivering bulk water to customers, WaterNSW's water storage and supply assets can in some cases provide additional flood management and recreational benefits to surrounding communities. To the extent that costs are incurred to provide broader social benefits, recovering these costs from water customers may result in over-charging (relative to the efficient cost of providing the water service) and under provision (relative to the efficient level of demand and supply) of water storage and supply services. That is, water customers should not be required to pay any additional or incremental costs of delivering benefits to other users (eg, recreational users or the downstream community). Where such incremental costs are incurred, the other users are the 'impactors' of these costs. A Government contribution may therefore be necessary to ensure the efficient provision of water storage and delivery services.

examples below, we step through the case of a dam built to supply water to consumptive users (as illustrated in the figure below) and the case of a dam that may be augmented to provide services to other impactors (see the box below).

Compared to the counterfactual, ie, the world without a high consumptive use of water, consumptive users are the impactors that cause the need for the dam and should pay the costs involved in storing and delivering water.

As a consequence of the dam, two situations may transpire for a downstream community. First, a flood may occur due to dam failure. To the extent that flood management costs are required to respond to or manage the risk posed to the community by dam failure (and the dam was constructed to supply water to consumptive users), these costs should be allocated to consumptive users. In this case, the impactor of the cost is the consumptive users that required the dam to be built in the first place, as the need to protect the community from this risk would not exist in the absence of the infrastructure.

However, floods also occur naturally due to rainfall and the dam may have the ability to absorb floodwater (and thus reduce the probability of a flood occurrence compared to an unregulated river). To the extent that flood management costs are incurred to manage the risk posed through naturally occurring floods, then the impactor is the downstream community.

If the dam was initially constructed to provide flood **mitigation** services, then the downstream community would be the impactor for the costs associated with this service.

The building of the dam triggers costs associated with a number of regulatory standards, eg, dam safety and environmental standards. Where the dam is built to supply consumptive users, they would generally be considered the impactor for these costs. However, these activities can include flood management activities to some extent. Therefore, if flood management services are provided through river regulation (ie, costs are incurred to manage the risk posed through naturally occurring floods), then the downstream community may also be considered an impactor.[45]

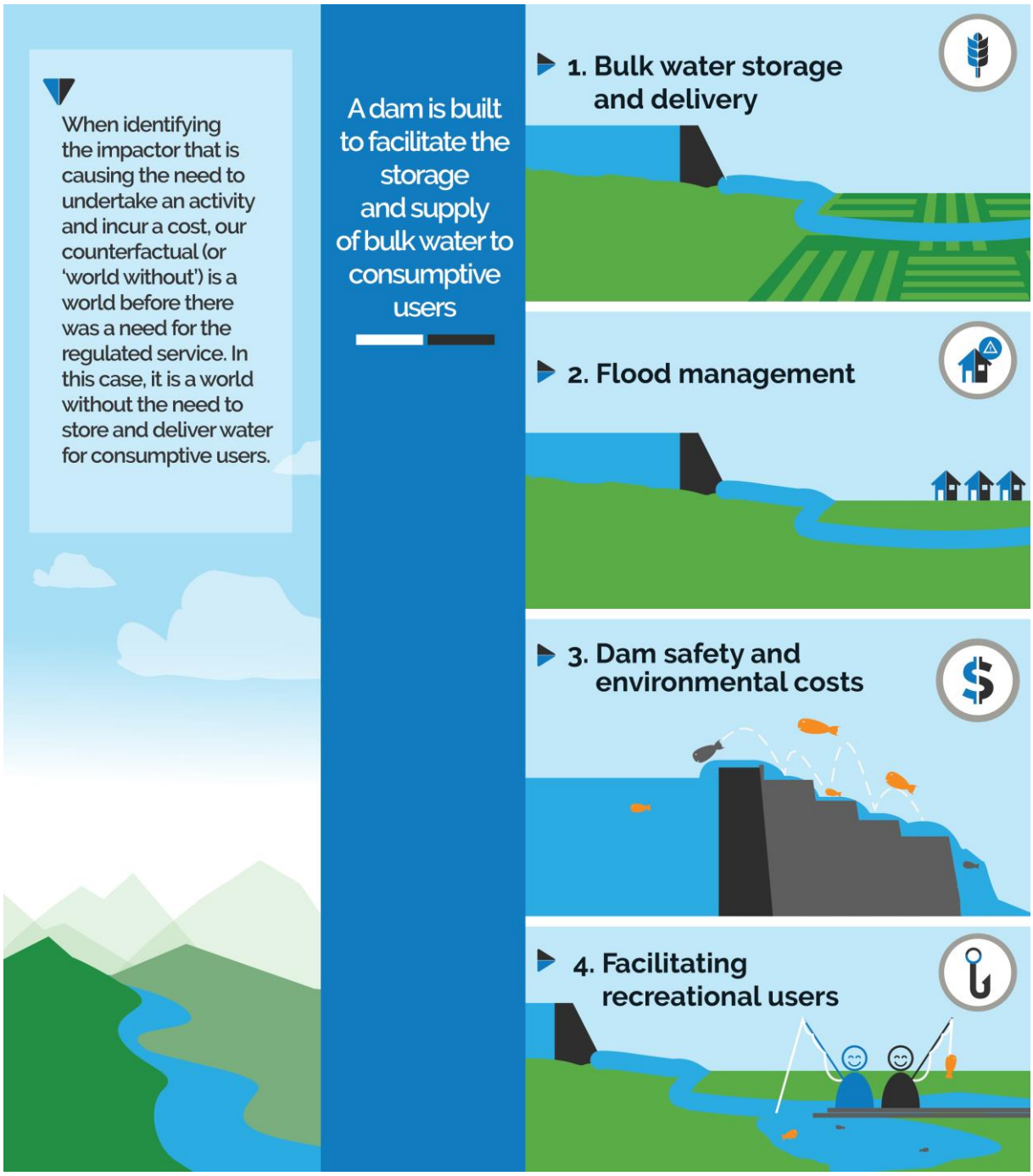
In terms of parties with basic landholder rights, if costs are incurred to provide ongoing access to these rights once the dam has been constructed, then these costs should be allocated between the impactors that caused the dam to be built. However, any additional costs incurred due to basic landholder rights (ie, that go above and beyond the cost of providing ongoing access to these rights) should be borne by the landholders themselves (or the Government on their behalf).

Finally, the dam may serve a recreational use. To the extent additional costs are incurred to facilitate this use (eg, because an additional car park, boat ramp and buildings are needed for recreational users), then the recreational users are the impactors for these costs (this is illustrated in the box below).

45 We recognise that a change in the downstream community may change the costs of implementing an existing standard (eg, the growth of a downstream community may increase the costs associated with implementing an existing dam safety standard). Under our application of the impactor pays principle, these costs would be shared between impactors in the same way as any other change in regulation or standard.

In short, in the event that the dam is designed and built, and costs are incurred, to deliver services/outcomes that go above and beyond supplying water services to consumptive users (and managing the safety requirements and environmental impacts from providing those water services), there can be a case to share costs between multiple impactors.

Figure 4.3 Identifying the impactor(s) of costs associated with a dam



Box 4.3 How do we apply the impactor pays principle where there are other users?

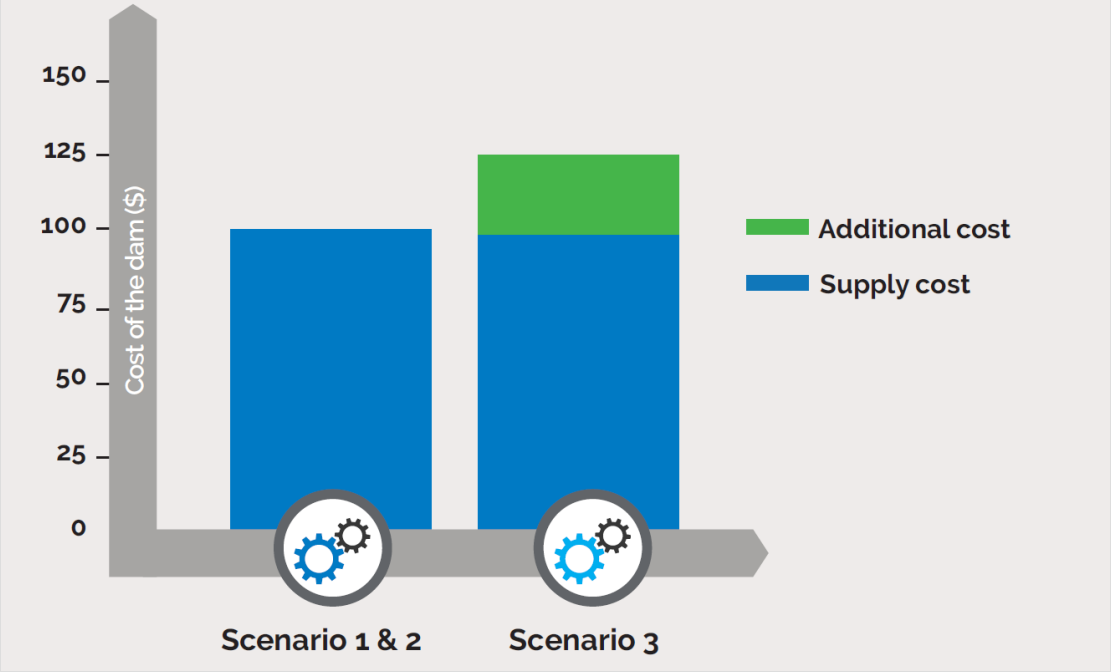
Consider the case where a dam has been built to serve a large water entitlement holder (eg, a large irrigator).

Assume that the costs of building, maintaining and operating the dam, including complying with environmental regulatory requirements, are $100. Under the impactor pays principle, the irrigator would pay $100 for water supplied from the dam.

However, in this example, the dam can also be used for recreation activities, such as fishing, boating, and camping. In Figure 4.4 we consider three scenarios:

1. The dam is only used to supply water to the irrigator (ie, there are no recreational uses). The cost of the dam is $100, and this is shown on the left column
2. The dam is also used for recreational activities, but these additional activities generate no additional costs (this scenario is also shown on the left column)
3. The dam is also used for additional recreational activities involving an additional cost of $25 (for example, because an additional car park, boat ramp and buildings are needed for recreational users). This is shown by the incremental cost in the right column.

Figure 4.4 Considering costs under the impactor pays principle



In the first scenario, we would recover the full cost of supplying water ($100) from the irrigator. This approach is efficient because the irrigator has caused the need for the dam to be built, as well as the need to conduct environmental management and, in this example, there are no other uses for the dam.

In the second scenario, we would also recover the full cost of supplying water ($100) from the irrigator, even though the dam is used for recreational purposes. This is also efficient because the recreational users of the dam do not impact the overall cost of building, maintaining and operating the dam.

In the third scenario, the irrigator would pay $100 to reflect the cost of its activities, while the government would pay $25, to reflect the cost incurred as a result of recreational use of the dam (if it was not possible or practical to recover costs from recreational users themselves).

5 Activity and service based cost sharing framework

We adopt a cost sharing framework to allow us to apply our cost sharing principles, as discussed in Chapter 3, to determine the share of efficient costs that should be paid for by customers, and the NSW Government (on behalf of other users and the broader community). The framework determines *how we categorise the efficient costs* of WAMC and WaterNSW. We can then apply our principles of impactor pays and legacy costs to determine the total customer share of efficient costs.

5.1 Description of activity and service based frameworks

During this review we have investigated two different frameworks for cost sharing. A service-based cost sharing framework and an activities-based cost sharing framework. The two frameworks are different in the way that they allocate the efficient and prudent costs of the entity (ie, WaterNSW (rural bulk water) or WAMC for the purpose of this review). The service-based framework allocates costs to defined services that WaterNSW and WAMC deliver, and then allocates each service (and its cost) to either water customers or the NSW Government (on behalf of the broader community). The activity-based framework allocates costs to the activities that the entities undertake (to deliver their services), and determines a customer share of costs for each activity.

5.2 Our decision to maintain an activity based framework

We have used an activity-based cost sharing framework in previous price reviews for both WAMC and WaterNSW. Both WAMC and WaterNSW have indicated that their current systems and processes are set up to allocate costs by activities.

Decision

3 To maintain the activity-based cost sharing framework.

That is, we will continue to allocate the costs of WAMC and WaterNSW by the activities they undertake. This decision is unchanged from our draft decision to maintain the activity-based framework.

In practice this means that the first step of a price review involves the regulated business submitting its pricing proposal, including its proposed capital and operating expenditure allocated to activities. WaterNSW and WAMC's capital and operating expenditure are broken down by activity, and a customer cost share is applied to each activity to determine the total customer share of each entity's efficient costs.

Stakeholder feedback expressed support for our draft decision to maintain the activity-based cost sharing framework.[46] Our consultants also viewed that moving to a service-based approach would lead to greater administration costs that would outweigh the potential benefits.[47]

5.2.1 Reasons for our decision

We investigated the costs and benefits of moving to a service-based framework

During the WaterNSW 2017 price review, IPART engaged Frontier Economics (Frontier) to review the existing customer cost shares and framework. As part of its review, Frontier recommended that IPART adopt a service-based cost sharing framework rather than the existing activity-based framework.[48]

As part of this review, we engaged Aither to develop an implementable service-based framework, identify its potential benefits and costs (including implementation costs) and assess whether there is merit in moving to such a service-based framework. Aither's report sought to define the services that both WaterNSW and WAMC deliver and a cost share for each service. Aither also mapped the current activities and costs to each service.[49,50]

Based on stakeholder feedback and consultant advice, our decision is that the short and medium term costs of implementing a service-based framework are likely to outweigh the potential benefits.[51,52] We also found that all stakeholders, including water customers and the regulated entities, expressed concern that a service-based framework would not necessarily result in a more transparent or cost reflective cost sharing framework in practice. Therefore, there is the risk that the potential advantages of the service-based framework over the activities based framework would not materialise.

The potential benefits of a service-based framework are unlikely to outweigh the costs of implementation

As part of its recommendation, Frontier claimed that the service-based framework provides a more transparent process for allocating efficient costs between customers and the NSW Government.[53] It could also allow cost shares to be more easily understood by key stakeholders such as customers and the NSW Government because costs would be presented in a way that is directly linked to the services being received by these stakeholders.

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46 Department of Industry, *Submission to the Independent Pricing and Regulatory Tribunal Review of rural water cost shares Draft Report,* November 2018, p 1; NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Review of rural water cost shares Draft Report,* November 2018, p 1.

47 Aither, *Rural water cost sharing review Final Report*, January 2019, p 83.

48 Frontier Economics, *Review of WaterNSW Cost Shares*, December 2016.

49 Aither's service-based framework is set out in Appendix A. We note that the mapping and cost allocation Aither recommended are hypothetical as there is insufficient information available to undertake a comprehensive bottom-up allocation of costs.

50 Aither, *Rural water cost sharing review Final Report*, January 2019, pp 72-77.

51 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Review Issues Paper Review of rural water cost shares*, June 2018, p 11.

52 Aither, *Rural water cost sharing review Final Report*, January 2019, p 82.

53 Frontier Economics, *Review of WaterNSW Cost Shares,* December 2016, p 34.

In our Issues Paper we acknowledged that a service-based framework is likely to better facilitate the application of the impactor pays principle because the process of identifying and defining services would help identify the impactor/s of those services.[54]

However, while a service based framework could improve our ability to identify impactors and attribute costs of services to impactors, it would also introduce additional complexity in terms of how costs are allocated from activities to services.[55] Additionally, in LVW's submission to the Issues Paper, it suggested that a service-based framework may lead to cost shifting and a decrease in transparency and stakeholder understanding of how costs are allocated.[56]

Our consultant, Aither, developed service-based frameworks for WAMC and WaterNSW as part of this review.[57] A summary of these service-based frameworks is provided at Appendix A. Based on its review, Aither viewed that although the service-based framework has conceptual merit and advantages over the activity-based framework, it is not a practical approach for both WAMC and WaterNSW. The benefits of a possible increase in transparency and customer focus did not outweigh the costs of implementation and the possibility that the service-based framework would increase complexity internally for the regulated entities.

Aither found that:

> Costs for implementing this change across WaterNSW and WAMC would involve further defining services, identifying customer segments, allocating costs to those segments and internal and external resourcing to redesign accounting systems and implement the solution. This would also involve training/education to ensure cost allocation is undertaken accurately. WaterNSW estimated between $4 and $5 million to implement this scenario. Further costs would be required for DOI's system.[58]

While the service-based framework has theoretical merit by improving the ease of application of the impactor pays principle, due to high implementation costs and the potential increase in complexity, our view is that the costs of moving to a service-based framework are likely to outweigh the benefits.

The service based framework does not directly address the key issues with the current cost sharing framework

Most stakeholders did not express a preference for either the service-based framework or an activity-based cost sharing framework. Of greater concern to most stakeholders, particularly customers, is the efficiency and allocation of costs for both WaterNSW and WAMC.[59] Customers had a shared view that there was a lack of transparency and process around what costs are actually allocated to the activities and the rationale behind the customer cost shares to a number of activities. Macquarie Flood and Fibre commented that, as the regulating body,

54 IPART, *Review of rural water cost shares Issues Paper*, April 2018, p 19.
55 IPART, *Review of rural water cost shares Issues Paper*, April 2018, p 19.
56 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares*, June 2018, p 5.
57 Aither, *Rural water cost sharing review Final Report*, January 2019.
58 Aither, *Rural water cost sharing review Final Report,* January 2019, p 82.
59 Central Coast Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, June 2018, p 3; Bega Valley Water Users Association (Inc.), *Submission to Review of rural water cost shares,* June 2018, p 1.

IPART should have oversight over the management accounting systems of the utilities to ensure that the allocation of costs are correctly applied in practice.[60]

Our view is that moving to a service-based framework would not directly address the main concerns expressed by stakeholders about whether costs are efficient and how costs are allocated to activities in practice. WaterNSW suggests that implementing the service-based approach would result in additional administrative and regulatory costs, as it would be allocating costs to activities and then activities to services rather than directly allocating costs to services. WaterNSW's submission also indicated that given the difficulty of moving to a service-based framework, allocating the cost of some activities such as 'routine maintenance' across several services may lead to arbitrary allocations (ie, that costs are not allocated to services accurately).[61] This also highlights that a service-based framework may result in less transparency and accountability compared to the current activity-based framework.

Given this, our view is that more rigour needs to be adopted around the cost allocation process of the utilities, and that without this, the risk that prematurely compelling agencies to implement a service-based cost sharing framework would not result in the potential benefits that the service based framework offers over the activity-based framework.

If, theoretically, the activity-based and service-based approaches were both implemented accurately, they should result in the same aggregate cost share. This indicates that we should only prefer one over the other if, for example, it provided more transparency to stakeholders (and hence held the businesses more accountable) and was more likely to implemented accurately. At this stage, we consider this to be the activity-based framework.

5.3 List of activities for WAMC and WaterNSW

Tables 5.1 and 5.2 list and describe each of WAMC's and WaterNSW's activities within the scope of our cost sharing framework. We have not changed the activity list during this review. However, we have clarified the activities by including the descriptions provided by WAMC and WaterNSW of each activity.

Table 5.1 Our decision on WAMC's activity list

Activity	Description
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 stations to the corporate database; and the maintenance and operation of surface water monitoring stations.
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.
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.

60 Macquarie River Food & Fibre, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, June 2018, p 5.

61 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper*, June 2018, p 11.

Activity	Description
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.
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.
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.
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
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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 the coastal water sources.

Activity	Description
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 the inland water sources.
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.
W06-04 Drainage management plan development	The development, review, amendment, and extension or replacement of Drainage Management Plans, to address water quality problems associated with drainage systems.
W06-05 Regional planning and management strategies	The review of planning instruments, and the development evaluation, review and stakeholder engagement of planning and management strategies for water sharing and water plans (where the water market alone will not provide for economic or urban growth).
W06-06 Development of water planning and regulatory framework	The development of the operational and regulatory requirements and rules for water access.
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.
W07-01 Water management works	The undertaking of water management works to reduce the impacts arising from water use or remediate water courses.
W08-01 Regulation systems management	The management, operation, development and maintenance of the register for access licences, approvals, trading and environmental water.
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.
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.
W08-99 Water consents overhead	The administrative overhead costs associated with water consent transactions, which are passed on to customers in the water management tariff.
W09-01 Water consents transaction	Transactions undertaken on a fee for service basis; including dealings, assessments, change of conditions and new applications for water licence and graphs.
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.
W10-02 Business governance and support	The business systems and processes that support organisation-wide activities; including asset management, annual reporting and pricing submissions to IPART.
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.

Source: Aither, *Rural water cost sharing review Final Report*, January 2019, pp 99-118.

Table 5.2 Our decision on WaterNSW's activity list

Activity	Description
Customer support	The management and administration of the CAG's, customer education and support materials.
Customer billing	Customer enquiries, transaction and complaints services (Helpdesk), invoicing, receipting, debtor management, system administration, postage to collect regulated revenue.

Activity	Description
Metering and compliance	Customer water ordering, customer water accounting management, customer site surveillance, compliance reporting, meter reading, system management and usage apportionment, licensing issues resolution.
Water delivery and other operations	The water release from dams to customers. Including normal environment and system flows (includes supplementary flow management), short-term and long-term demand forecasting and resource assessment. Works approval and other compliance reporting. Use of SCADA and manual work required to release water from dams, weir and regulators.
Flood operations	Flood staff training and Onsite works required for flood operations.
Hydrometric monitoring	The monitoring of the availability and condition of surface water by measuring water level, stream flow, rainfall and key water quality indicators.
Water quality monitoring	The water quality monitoring and reporting for storage water. This includes the Fish River water quality management plan.
Direct insurances	Insurance such as public liability and building and other asset insurance.
Corrective maintenance	This includes the breakdown maintenance of assets which provide services to customers and other water users.
Routine maintenance	The planned or condition-based maintenance of assets which provide services to customers and other water users.
Asset management planning	The asset planning, including safety and maintenance planning, asset condition auditing, operational risk and incident management. It also includes the related procurement, dam safety compliance and operations.
Dam safety compliance	The dam surveillance and dam safety inspections, reviews, audits and associated risk assessment.
Dam safety compliance pre-1997 capital projects	The dam surveillance and dam safety inspections, reviews, audits and associated risk assessment based on 1997 standards of service.
Environmental planning and protection	The environmental management which includes strategic and specific planning and assessment, fish passages, carbon neutrality and cold water pollution.
Corporate systems	This system is responsible for the delivery of information services, major projects and improvement initiatives. Some systems provide services to customers and stakeholders.
Irrigation Corporation District (ICD) rebates	This is a rebate paid to ICDs based on avoided cost incurred in relation to activity 'customer billing and 'metering and compliance'.
Renewals and Replacement	This activity includes repairs for expected wear and tear and usage of water infrastructure.
Risk Transfer Product	Cost of insurance product to manage revenue volatility arising from tariff structure.

Source: Aither, *Rural water cost sharing review Final Report*, January 2019, pp 85-98.

5.3.1 The activities that the newly established NRAR will undertake will be considered at the next WAMC price review

Stakeholder submissions to our Draft Report and discussions during external workshops revealed that there is concern around the activities (and subsequent cost shares) that will be applied to the Natural Resources Access Regulator (NRAR).

For instance, the NSWIC was disappointed that the Draft Report did not include the activities and customer cost shares that will relate to NRAR functions[62] in future determinations (to the

62 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report*, November 2018, p 2.

extent these are different to the WAMC compliance and enforcement activities contained in this report).

As previously mentioned, we will use the activities and cost shares outlined in this report as the starting point for our upcoming reviews of WaterNSW's and WAMC's prices.

The Department of Industry's (DoI) submission to our Draft Report states that it will review the list of WAMC activities in light of the establishment of NRAR and other water reforms, as part of its pricing submission to our 2019-20 review of WAMC's prices.[63] Once we receive DoI and other stakeholders' proposals and submissions to the WAMC review, we will undertake further consultation and analysis where necessary.

We are open to improving the list of activities going forward. However, we will balance the objectives of transparency, cost reflectiveness and practicality. Additionally, WaterNSW, DoI and NRAR's proposed costs will be subject to scrutiny though the expenditure reviews, where we will engage specialised consultants to review their proposed costs to be recovered from WaterNSW and WAMC prices determined by IPART. This is a key part of our price review process.

63 Department of Industry, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report*, November 2018, p 1.

6 Customer and government share of efficient costs

To allocate the efficient costs of WAMC and WaterNSW's activities between customers and the NSW Government, we apply a cost share ratio to each activity the regulated businesses undertake.

In previous chapters of this report we have discussed the principles and framework that underpin how each cost share ratio is determined. This chapter applies these principles and our framework to determine cost shares for each of WAMC and WaterNSW's activities.

We also illustrate through examples how we have applied the impactor pays principle to determine the customer cost share for each activity.

It is important to note that our decisions, including the changes to the customer cost shares in this review, will not impact current prices for WAMC and WaterNSW customers, but will inform how we allocate costs at the next WAMC and WaterNSW price reviews.

6.1 Applying the impactor pays principle to determine customer cost shares

6.1.1 Who are the impactors?

WAMC and WaterNSW provide services to a range of different user groups. The majority of activities WAMC and WaterNSW undertake can be directly linked to providing a service for their customers. However, there are some activities undertaken by both entities which provide services to different groups who are not captured as a fee paying customer. By applying our impactor pays principle we can ensure that the prices we set recover the costs that customers have imposed on the business.

In the table below we have identified a number of different possible impactors of WAMC and WaterNSW's activities and associated costs.

Table 6.1 List of potential impactors of WAMC and WaterNSW's activities and costs

Impactors	Description
Customers (water entitlement holders, subject to IPART's regulated prices)	
Private irrigators and irrigation companies	Irrigators use water for agricultural production, while irrigation companies distribute water supplied by WaterNSW to their retail customers.
Local councils which are water utilities	Local council customers such as the Dubbo City Council and the Tamworth Regional Council purchase water from WaterNSW to supply their local communities.

Impactors	Description
Environmental water licence holders	Environmental water licence holders are allocated an access licence consistent with the rules for that licence type set out in each valley's Water Sharing Plans. The water delivered to these licence holders is used for environmental purposes.
Non-customers	
Basic landholder water right holders ▼ Stock and domestic rights ▼ Native title rights ▼ Harvestable rights – dams	**Stock and domestic rights:** Owners or occupiers of land which is overlaying an aquifer or has river, estuary or lake frontage can take water without a licence for domestic (household) purposes or to water stock. **Native title rights:** Anyone who holds native title with respect to water, as determined under the *Commonwealth Native Title Act 1993*, can take and use water for a range of personal, domestic and non-commercial purposes. **Harvestable rights – dams:** Harvestable rights water allows landholders in most rural areas to collect a proportion of the runoff on their property and store it in one or more farm dams up to a certain size.
Tourism and recreational water users	Many of the dams operated by WaterNSW are popular recreational destinations, offering attractions for water sports and recreational fishers, which can drive increased costs.
Downstream communities	Communities downstream of dams operated by WaterNSW are users of WaterNSW's services aimed at flood mitigation.
Broader NSW/Australian community	The broader NSW/Australian community can require information and reporting, which may impose increased costs on WaterNSW and WAMC to provide this.

Source: Department of Industry, 2019, https://www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/how-water-sharing-plans-work.

6.1.2 Identifying the impactor of activities and costs

In Chapter 3 we discussed our principles for our cost sharing framework. One of these principles is the impactor pays principle. The impactor pays principle is the cost allocation principle that we use to determine each customer cost share for the activities undertaken by WAMC and WaterNSW. Chapter 5 includes a list of activities that are within the scope of the rural cost sharing framework.

The impactor pays principle allocates the costs of an activity to the party that creates the need to incur the cost. We label this party the impactor. We consider that allocating costs using the impactor pays principle leads to more efficient investment and consumption outcomes, as it signals to customers the full cost of providing services. This should mean that customers will only demand a service up to the level where the benefit they derive from the service exceeds (or at least is equal to) the costs incurred in supplying the service. That is, it should help to ensure that services are not supplied at inefficiently high levels – where the benefits customers derive from the services would be less than the costs incurred in supplying them.

Chapter 3 also discusses how we intend to apply the impactor pays principle in a consistent manner across and within WAMC and WaterNSW. To assist in applying and explaining the impactor pays principle, we defined a 'world without' as a way to identify what is driving the need for WAMC and WaterNSW to undertake their activities (and incur costs). This way we can more transparently identify the underlying impactors of each activity.

In general, our 'world without' is a world without high consumptive use of the water resource. The *high* level of water consumption can be different for WAMC and WaterNSW. Specifically, for WAMC it is the level of water consumption that has driven the need to plan and manage the water resource to ensure its long term sustainability and to protect individual water entitlements. For WaterNSW it is the level of water consumption that has driven the need to invest in, operate and maintain infrastructure to provide greater water supply and security through water storage and delivery services.

Box 6.1 and 6.2 show examples of how we have used our concept of a world without high consumptive water use to anchor our application of the impactor pays principle to WAMC and WaterNSW activities.

Box 6.1 Applying the impactor pays principle to WAMC's *W01-02 Surface water data management and reporting* activity

WAMC compiles data on surface water quantity, quality and biological information. It also manages the data, including storing and reporting the data. WAMC publishes reports and accompanying data to customers, stakeholders and the general public.

The costs associated with these activities is captured under the WAMC activity code *W01-02 Surface water data management and reporting*.

Our decision for this activity code is a customer share of 50%. This is unchanged from the existing customer cost share. Our view is that the extractive user and the NSW Government, on behalf of itself and the broader community, are joint impactors for this activity.

The extractive user is an impactor

If we begin with a world without high consumptive water use, then the impactor of the costs required to collect and monitor water use is the extractive water users. Extractive water users have created the need for a water sharing framework, to ensure sustainability of the resource. Water information, data collection and monitoring facilitates the ability for the water resource to be shared to optimise consumption and sustainability. Some extractive users may also use this information to inform their own water management and investment decisions.

The NSW Government is also an impactor

We have recognised that, even in a world without high water consumption, the NSW Government may require some level of reporting to inform broader objectives and policy requirements. This results in additional costs above what is required to manage the use of water.

Source: Aither, *Rural water cost sharing review Final Report*, January 2019, p 49.

Box 6.2 Applying the impactor pays principle to WaterNSW's *Flood operation* activity

WaterNSW operates dams during times of flood. WaterNSW actively controls the volume of water and offsets the timing of flood water entering the river valleys. As part of this function, it must ensure that staff are adequately trained to manage flood events and undertake necessary day to day activities. This protects communities located downstream of large dams.

Our decision for WaterNSW's *Flood Operations* activity is a customer share of 80%. This is an increase from the existing customer share of 50%. We have identified the extractive user as the major impactor (80%) and the NSW Government on behalf of the broader community as the minor impactor (20%).

Extractive users are the major impactor

Our decision on our customer cost share for flood operations assumes that the presence of the dam increases the risk of floods to downstream communities.

If we begin with a world without high consumptive water use (and therefore no need to store water), there would be no costs associated with WaterNSW's flood operations activity. With the construction and current operations of the dams the requirements for WaterNSW to adequately manage the associated flood risks increases. Therefore, the impactors of the costs associated with managing the increased risk and exposure communities have to flood occurrences because of the dam are the extractive users.

The broader community is the minor impactor

We have recognised that to the extent that controlling the volume of water and offsetting the timing of flood water entering river valleys can also reduce the probability of a flood event, compared to an unregulated river, the impactor of some of the costs is the broader community. Costs associated with this should be allocated to the NSW Government on behalf of the broader community.

Source: Aither, *Rural water cost sharing review Final Report, January 2019*, p 40.

We engaged Aither to review our existing cost share framework and recommend customer cost shares determined using the impactor pays principle and our world without definition. Aither has developed a Final Report as part of this engagement.[64] We have accepted Aither's recommendations to revise a number of WAMC and WaterNSW's customer cost shares (as set out in Scenario 1 of Aither's Final Report).

Where Aither has recommended a customer cost share range, we have selected the mid-point of the range. We consider this is appropriate in the absence of a compelling case to select the high or low end of the range.

64 Aither, *Rural water cost sharing review Final Report,* January 2019.

6.2 WAMC's cost shares

Decision

4 To update a number of customer cost shares for WAMC activities as per Table 6.2.

We have maintained WAMC's 33 activities for our cost sharing framework.

Relative to the 2015-16 WAMC price review, we have updated 9 customer cost shares, the largest change being an 80% increase in the customer cost share to 80% from 0% for *W05-03 Environmental water management*.

Relative to our Draft Report for this review, the majority of the customer cost shares in the table below are unchanged. However, we have revised the customer cost share for one activity in response to stakeholder feedback to our Draft Report. This is for activity *W02-03 Ground water data management and reporting*, where we have increased the customer share to 100% from 50% compared to our Draft Report. This is discussed in detail in the section below.

Table 6.2 WAMC customer shares for operating and capital expenditure

Activity	2015-16 price review	2018-19 cost share review
W01-01 Surface water quantity monitoring	70	100
W01-02 Surface water data management and reporting	50	50
W01-03 Surface water quality monitoring	50	60
W01-04 Surface water algal monitoring	50	40
W01-05 Surface water ecological condition monitoring	50	50
W02-01 Groundwater quantity monitoring	100	100
W02-02 Groundwater quality monitoring	100	100
W02-03 Groundwater data management and reporting	100	100[a]
W03-01 Water take data collection	100	100
W03-02 Water take data management and reporting	100	100
W04-01 Surface water modelling	50	80
W04-02 Groundwater modelling	100	100
W04-03 Water resource accounting	100	100
W05-01 Systems operation and water availability management	100	100
W05-02 Blue-green algae management	50	40
W05-03 Environmental water management	0	80
W05-04 Water plan performance assessment and evaluation	50	50
W06-01 Water plan development (coastal)	70	70
W06-02 Water plan development (inland)	70	70
W06-03 Floodplain management plan development	0	0
W06-04 Drainage management plan development	0	0

Activity	2015-16 price review	2018-19 cost share review
W06-05 Regional planning and management strategies	70	70
W06-06 Development of water planning and regulatory framework	75	80
W06-07 Cross-border and national commitments	50	50
W07-01 Water management works	50	80
W08-01 Regulation systems management	100	100
W08-02 Consents management and licence conversion	100	100
W08-03 Compliance management	100	100
W08-99 Water consents overhead	100	100
W09-01 Water consents transaction	100	100
W10-01 Customer management	100	100
W10-02 Business governance and support	70	80
W10-03 Billing management	100	100

[a] Our decision to apply a 100% customer cost share is different from our draft decision. In our Draft Report we recommended a 50% customer cost share, for consistency with W01-02 surface water data management and reporting. However, feedback from our Draft Report suggested that the sole impactor of activities related to ground water are the extractive users.

Source: Aither, Rural water cost sharing review Final Report, January 2019, pp 99-118.

6.2.1 Reasons for our decision

Table 6.2 provides a summary of the customer cost shares and shows the changes we have made compared to the 2015-16 price review. Appendix B details the rationale and application of the impactor pays principle used to determine these shares. Aither's Final Report provides further explanation for each cost share.[65] The section below highlights key areas where we have responded to stakeholder feedback, have changed and/or clarified the rationale for our decision on WAMC's customer cost share.

We recognise that some activities are undertaken to provide information to the government and the broader community

The following activities have a customer share of less than 100%. This reflects WAMC's role of providing information to the government and the broader community:

- *W01-02 Surface water data management and reporting*: we have maintained a customer share of 50%
- *W04-01 Surface water modelling*: we have increased the customer share from 50% to 80%.

These cost shares recognise that there are two impactors. The extractive user (because WAMC is required to undertake the activity because of high water consumption), and the NSW Government, which requires reporting and/or information gathering above the minimum level necessary to manage the high consumptive use of water.

65 Aither, *Rural water cost sharing review Final Report*, January 2019.

Stakeholders had diverging views on who the impactor of the costs associated with activities for data management and modelling should be

In our Draft Report we recommended decreasing the customer cost share for WAMC's activity *W02-03 Groundwater data management and reporting activity* to 50% in line with activity *W01-02 Surface water data management and reporting*, as they both related to data management and reporting. However, during stakeholder workshops, DoI-Water suggested that our draft decision to decrease the customer cost share for *W02-03 Groundwater data management and reporting* does not accurately reflect the true impactors of the costs of the activity.

It suggests that this activity, along with other activities associated with groundwater, are undertaken because of the water customers and that without the need to manage the consumption of the water resource this activity would not be undertaken.[66] Based on this rationale, it considers our draft decision to increase the Government cost share to 50% (from 0%) is too high for *W02-03 Groundwater data management*.

Aither further investigated this and received additional information from DoI-Water to support its claim. It recommended a change to its draft recommendations and increased the customer share for *W02-03 Groundwater data management and reporting* back to 100%. It considers this activity is less driven by community expectations and information provision (unlike *W01-02 Surface water data management and reporting*) and more about managing water extraction, in line with other activities related to groundwater.[67] We have accepted Aither's revised recommendations for this Final Report.

Alternatively, the NSWIC and LVW view that the customer cost share for *surface water modelling* (W04-01) should be maintained at 50% because a large proportion of modelling is undertaken to inform the Murray Darling Basin Plan implementation, identifying the impactor as Government policy.[68,69]

The reason that surface water modelling is required is to balance extractive use of the water resource with the needs of the environment and other critical uses.[70] Consistent with our counterfactual starting point, we can identify the major impactor of this activity as the extractive user, because without high consumptive use of water, there would be no requirement to balance the needs of water consumption and the needs of the environment. Accordingly, we have decided to maintain our draft decision that the customer cost share should be 80% of this cost.

We recognise that some activities are undertaken to facilitate government and policy objectives

WAMC is responsible for a number of long-term water resource planning activities to manage the consumption of bulk water. While the consumptive users are impactors of those activities, we recognise that these activities are also undertaken, in part, to serve broader community

66 Aither, *Rural water cost sharing review Final Report,* January 2019, p 52.
67 Aither, *Rural water cost sharing review Final Report*, January 2019, p 52.
68 Lachlan Valley Water, *Submission to the Indepndent Pricing and Regulatory Tribunal Rural Cost Shares Review Draft report* November 2018, p 3.
69 NSW Irrigators Council, *Submission to the Indepndent Pricing and Regulatory Tribunal Rural Cost Shares Review Draft report,* November 2018, p 5.
70 Aither, *Rural water cost sharing review Final Report,* January 2019, p 54.

and policy objectives (independent of the impact of water customers). This is relevant to the following activities:

- *W05-04 Water plan performance assessment and evaluation*: we have maintained a customer share of 50%
- *W06-01 Water plan development (coastal)*: we have maintained a customer share of 70%
- *W06-02 Water plan development (inland)*: we have maintained a customer share of 70%
- *W06-05 Regional planning and management strategies*: we have maintained a customer share of 70%
- *W06-06 Development of water planning and regulatory framework*: we have increased the customer share from 75% to 80%.

During the NSWIC workshop, members expressed their concern that WAMC prices fund broader policy work undertaken by the Department of Industry – Water

We view that, consistent with the National Water Initiative direction, any costs that the Department of Industry – Water incurs to provide Ministerial and Parliamentary services, such as the development and refinement of overarching policy frameworks, should be excluded from the efficient cost base used to establish prices for WAMC's regulated monopoly services.[71] However, the costs of applying the policy framework, including the establishment and monitoring of Water Sharing Plans, should be borne by consumptive users. This is because, in the absence of consumptive users, there would be no need for Water Sharing Plans.

The NSWIC stated that we should apply a higher government cost share to the activity W07-01 Water management works

NSWIC submission to our Draft Report recommended that the customer cost share for activity *W07-01 Water management works* should remain at the existing customer cost share of 50% instead of increasing to 80%.[72] Its submission includes the view that "urban development and public infrastructure are an important factor in establishing river flow management regimes and it is these flow regimes that lead to the need for remedial and preventative works. This development and infrastructure are required for the broader community regardless of their demand or use of water. Therefore the main impactor is the broader community."[73]

In Aither's Final Report, it maintained its recommendation to apply an 80% customer cost share and 20% government cost share cost to this activity.[74] With reference to the Department of Primary Industries' (DPI's) 2016 Pricing Submission to the WAMC price review, the definition of *W07-01 Water management works* are works required to remediate and mitigate environmental impacts from extraction and river regulation, rather than broader river impacts such as those from upstream urban development or other public infrastructure.[75] Therefore, the major impactor of the costs of this activity is the water customer.

71 COAG, *Intergovernmental agreement on a National Water Initiative*, 2004, p 14.
72 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 5.
73 NSWIC, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 5.
74 Aither, *Rural water cost sharing review Final Report,* January 2019, p 57.
75 Aither, *Rural water cost sharing review Final Report,* January 2019, p 57.

6.3 WaterNSW's customer cost shares

Decision

5 To update a number of customer cost shares for WaterNSW as shown in Table 6.3.

We have maintained WaterNSW's 17 activities for our cost sharing framework. We have updated 10 customer cost shares with the largest changes being a 30% increase in the customer share to 80% from 50% for *flood operations, water quality monitoring, dam safety compliance* (post-1997) and *environmental planning and protection*.

This is unchanged from our draft decisions on cost shares for WaterNSW.

Table 6.3 WaterNSW's customer shares for operating and capital expenditure

Activity	Category of expenditure	2016-17 price review	2018-19 cost share review
Customer support	Operating	100	100
Customer billing	Operating	100	100
Metering and compliance	Operating and capital	100	100
Water delivery and other operations	Operating and capital	100	95
Flood operations	Operating and capital	50	80
Hydrometric monitoring	Operating and capital	90	90
Water quality monitoring	Operating and capital	50	80
Direct insurances	Operating and capital	100	100
Corrective maintenance	Operating and capital	100	95
Routine maintenance	Operating and capital	100	95
Asset management planning	Operating and capital	100	95
Dam safety compliance	Operating and capital	50	80
Dam safety compliance pre-1997	Capital	0	0
Environmental planning and protection	Operating and capital	50	80
Corporate systems	Operating and capital	100	80
Irrigation Corporation District (ICD) rebates	Operating and capital	100	100
Renewals and Replacement	Operating and capital	90	95
Risk Transfer Product	Operating	100	100

Source: Aither, Rural water cost sharing review Final Report, January 2019, pp 85-98.

6.3.1 Reasons for our decision

Table 6.3 provides a summary of the customer cost shares and shows the changes we have made compared to the 2016-17 WaterNSW Rural price review. Appendix B includes the rationale and how we have applied the impactor pays principle to determine each customer cost share. Aither's Final Report provides more detailed explanations for each cost share.[76] Overall, we have not changed any of WaterNSW's customer cost shares from the decisions we

76 Aither, *Rural water cost sharing review Final Report*, January 2019.

made during the Draft Report. The section below highlights key areas where we have responded to stakeholder feedback, have changed and/or simply clarified the rationale for our decision on WaterNSW's cost shares.

We have recognised recreational users as additional impactors

We have recognised recreational users as an additional minor impactor of costs associated with a number of WaterNSW's activities. Aither's recommendation suggests that, after surveying WaterNSW's operational staff, additional costs – measured as the time staff spend servicing users other than fee-paying customers – are incurred to service recreational user requirements.[77]

Accordingly, we have made the decision to revise the customer shares for the following activities:

- *Water delivery and other operations*: we have reduced the customer cost share from 100% to 95%
- *Corrective maintenance*: we have reduced the customer cost share from 100% to 95%
- *Routine maintenance*: we have reduced the customer cost share from 100% to 95%
- *Asset management planning*: we have reduced the customer cost share from 100% to 95%
- *Renewals and replacement*: we have reduced the customer cost share from 100% to 90%.

Some stakeholders stated that we had not identified the true impactors of WaterNSW's operations and services.

Most irrigator stakeholders, including the NSWIC's submission to our Issues Paper, contended that there were gaps in the analysis of how much costs are incurred to service other groups including stock and domestic, recreational, cultural and environmental water users.[78,79]

Aither's review found that, consistent with NSWIC's concerns, water delivery for recreational use imposes additional costs on WaterNSW.[80] However, our review has found that the major impactors of costs associated with complying with environmental regulatory requirements are the consumptive users (ie, not the environment itself or the broader community on behalf of the environment). This is consistent with our application of the impactor pays principle using the counterfactual 'world without' starting point we defined in Chapter 3.

WaterNSW and WAMC's flood management functions

We have recognised that some activities undertaken by WaterNSW and WAMC are for the purpose of flood management. Flood management benefits downstream communities. However, the impactors of these activities are both the consumptive users of water as well as downstream communities.

We have identified there are two impactors based on the following rationale:

77 Aither, *Rural water cost sharing review Final Report*, January 2019, p 39.
78 NSW Irrigators Council, *Submission Independent Pricing and Regulatory Tribunal Review Issues Paper Review rural water cost shares*, June 2018, p 5.
79 Southern Riverina Irrigators, *Submission Independent Pricing and Regulatory Tribunal Review Issues Paper Review rural water cost shares*, June 2018, p 3.
80 Aither, *Rural water cost sharing review Final Report*, January 2019, p 39.

- To the extent that the dam's flood management function reduces the probability of a flood occurrence compared to an unregulated river, applying the impactor pays principle suggest the impactor is the broader community (ie, NSW Government).
- However, to the extent that the dam's flood management function is required because the presence of the dam increases the risk of a flood to communities living downstream of the dam, the impactors would be the consumptive users.

There is some uncertainty around the relative contributions of these two impactors towards WaterNSW's efficient costs. If the broader community is the main impactor, this would suggest a lower customer share. If the consumptive user is the main impactor, this would suggest a higher customer share. The activities that are affected by these factors are listed below:

- *Flood operations* (WaterNSW)
- *Dam safety and compliance* (WaterNSW)
- *Environmental planning and protection* (WaterNSW), and
- *W05-03 Environmental water management* (WAMC).

While *flood operations* clearly involves flood management activities, the other three activities listed above also include flood management activities to some extent. To the extent flood management drives these activities and since the broader community can be an impactor for flood management activities, there can be a case to allocate some of the costs of these activities to the NSW Government on behalf of the broader community.

For activities that include costs associated with flood management, Aither recommends customer cost shares of between 70% to 90% for both WaterNSW and WAMC.[81] This is an increase from the current 50% customer share, reflecting the view that the consumptive user is the major impactor. Our decision is to accept Aither's finding that consumptive users are the major impactors for these activities. We have adopted the mid-point of Aither's recommended range. That is, our decision is to increase the customer share of costs for *flood operations, dam safety and compliance, environmental planning and protection* and *environmental water management* from 50% to 80%.

Stakeholders submitted that flood operations are conducted mainly to protect the population centres

NSWIC's submission to our Draft Report recommended that IPART apply a greater government cost share to WaterNSW's *flood operations* activity to recognise the impactors are the population centres.[82] It considers that cost sharing should recognise a public good component associated with flood operations because the activity is undertaken to protect population centres.

We agree that the beneficiaries of flood operations are largely population centres. However, we view that the major impactor of the need for WaterNSW to undertake this activity are the consumptive users of water (this includes, irrigators, local water utilities and environmental water access licence holders).

81 Aither, *Rural water cost sharing review Final Report*, January 2019, p 40.

82 NSWIC, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report on rural water cost shares*, November 2018, p 6.

We view that in a world with high consumptive water use water storage is required to service demand requirements for customers. This leads to greater risk to downstream communities from risk of floods from dam failure/poor management. Training staff and actively managing storage levels is required to manage this risk. Accordingly, the major impactors are the customers of WaterNSW. The NSW Government on behalf of downstream communities are a minor impactor to the extent that they would require some level of flood management in the absence of dam infrastructure.

We also acknowledge NSWIC's statement that dams (or structures) were built to encourage development, implying that the NSW Government on behalf of the broader community should share a higher proportion of costs.[83] However, we consider that we have recognised this (and potential over-investment at time of the decision making process) in our treatment of capital costs. Our prices reflected an annuity payment equivalent to forecast capital expenditure and renewals required to maintain the infrastructure and continue to provide services (rather than reflecting historical expenditure on the assets).

We have clarified our application of the impactor pays principle for activities related to environmental protection and management

Consistent with the impactor pays principle, we have increased the customer share for the *environmental management and protection* activity (WaterNSW) and *W05-03 Environmental water management* (WAMC). This recognises that environmental regulatory standards are set to mitigate and remediate the environmental impacts that result from high consumptive water use.

Consumptive users contend that they should not bear the full cost of new environmental requirements

The NSWIC considers that it would be inequitable for consumptive users to bear the full cost of environmental regulatory obligations that arise from external legislative changes or government agreements.[84] In its submission to our Draft Report, NSWIC recommended that IPART should maintain the existing customer cost share of 50% because this activity is driven by higher community expectations, which have led to increasing legislative requirements.[85]

However, our view of the application of the impactor pays principle is that without high consumptive use of water there would be no need for WaterNSW to undertake activities for 'environmental purposes' and therefore incur the costs of these activities.

Further, we have not found evidence to suggest that the regulatory standards or environmental objectives of the Water Sharing Plans (WSPs) are set to achieve an environmental standard greater than the counterfactual (a world without extensive extractive water use) – or that the community is demanding something over and above the counterfactual. Thus, including the cost of environmental obligations in the customer share of costs attempts to internalise the negative externality that water consumption creates, which results in efficient price signals that reflect the full economic costs of water delivery.

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83 NSWIC, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report on rural water cost shares*, November 2018, p 5.

84 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares*, June 2018, p 13.

85 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 6.

This is consistent with the National Water Initiative (NWI), agreed in 2004, which set the need to set water prices to achieve full cost recovery. One of the NWI's principles is to apply consumptive-based pricing to achieve full cost recovery of water services, including recovery of externalities.[86]

We have not changed the cost sharing for Murray Darling Basin Authority (MDBA) or Border River Commission (BRC) costs

In the 2016-17 WaterNSW price review, we made the decision to accept the customer share of MDBA and BRC costs proposed by WaterNSW. We understood that they had been based on the activities and customer cost shares set by IPART for other rural water costs.

Going forward, we will continue to review WaterNSW's and WAMC's proposals in regards to the customer share of MDBA and BRC costs to ensure that the customer shares are consistent with the rest of our cost sharing framework. At the next WaterNSW and WAMC price reviews, we will seek to obtain more information on MDBA and BRC costs to inform our assessment of the customer share of these costs.

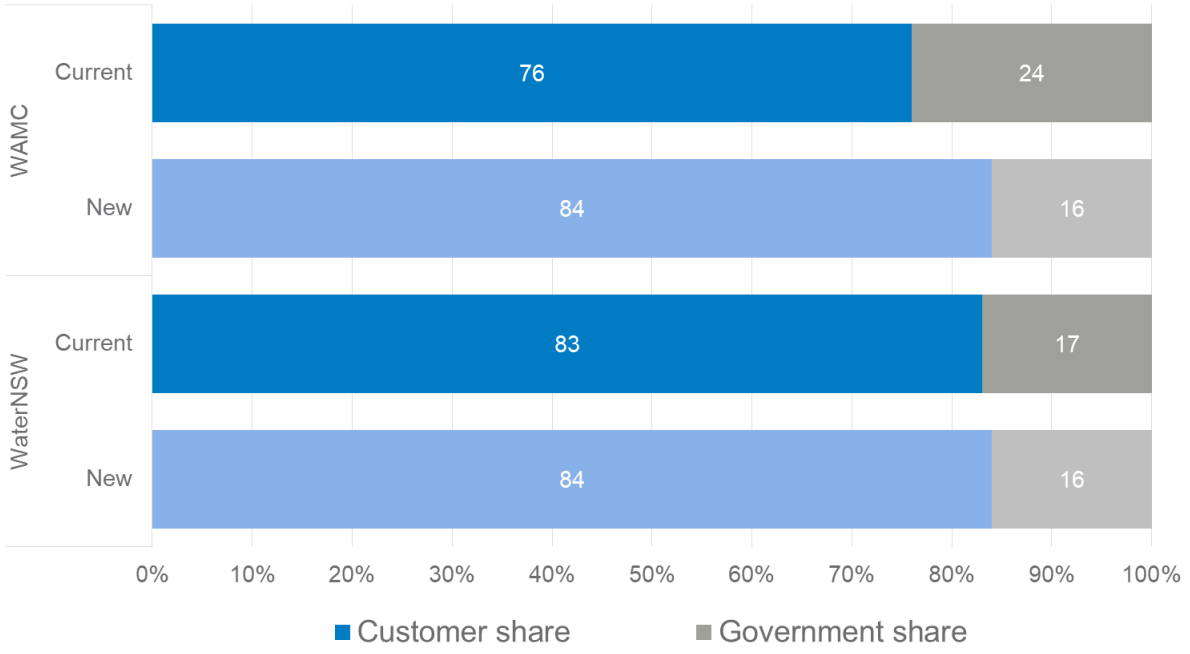
6.4 Illustrative impacts on the efficient costs

This section outlines illustrative impacts of our cost sharing decisions on WAMC and WaterNSW's customer shares of efficient costs. It is important to note that our decisions in this review will not impact current prices for WAMC and WaterNSW customers, but will inform how we allocate costs at the next WAMC and WaterNSW price reviews. Additionally, our assessment of the customer share of efficient costs is just one factor we consider in setting prices. Amongst other matters at the next reviews of WAMC and WaterNSW's prices, we will also consider the level of efficient costs and the potential impacts on customers and what they can afford to pay.

Our decision on cost shares results in an increase to the customer share of WAMC's efficient costs from 76% to 84% and WaterNSW's efficient costs from 83% to 84%. This is unchanged from the impacts we included in our Draft Report. Appendix C provides the impact of our decision on cost share on a valley by valley basis.

86 COAG, *Intergovernmental agreement on a National Water Initiative*, 2004, p13.

Figure 6.1 Illustrative impacts of the change in the customer share of efficient costs



Data source: IPART Analysis

These estimated impacts are based on the current allocation of the total costs over the period 2018-2021. The impact of these decisions will differ if the level of the costs are different and if the costs are allocated to activities differently in future WAMC and WaterNSW price reviews.

WaterNSW and NSWIC expressed concern that indicative impact analysis included in the Draft Report was misleading.

In the Draft Report we included indicative impacts of the revised cost shares.[87] As per above, these were an:

- Increase in the customer share of WAMC's efficient costs from 76% to 84%
- Increase in the customer share of WaterNSW's efficient costs from 83% to 84%.

WaterNSW noted that the calculations of impacts do not include WaterNSW's high level capital planning for the next 10 years. In particular, it mentions capital costs associated with fish passages and the new *Dam Safety Act 2015* (NSW), which have not yet been finalised. Additionally, WaterNSW states that capital projects such as fish ladders will impact different valley's more than others.[88]

WaterNSW concludes that this would lead to bill shocks to customers. It acknowledges that IPART has addressed affordability in the past with a community service obligation (CSO) to mitigate bill shocks.[89]

87 The impacts were calculated based the existing allocation of costs for both WaterNSW and WAMC over the four year period 2018-2021.

88 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 6.

89 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, October 2018, p 6.

The NSWIC shares WaterNSW's concerns on the impacts of future capital expenditure on prices. It recommends that IPART clarify and publicise accurate figures of the "actual percentage of indicative price increases in each valley that takes into consideration WaterNSW's 10-year expenditure."[90]

We acknowledge the points raised by both the NSWIC and WaterNSW. However, we do not have actual percentage increases in prices at this point in time. This is because:

- We do not have this information from WaterNSW
- Including any forecasts provided by WaterNSW prior to a price review may imply that IPART has prematurely accepted WaterNSW's forecast capital expenditure in the absence of the rigour of a price review. At the next price review, IPART will carefully review WaterNSW's proposed costs and make adjustments where it considers they are not prudent and efficient. Previous price reviews show that the level of costs proposed by a utility do not necessarily equate to the level of costs IPART uses to set prices, as we only set prices with reference to costs that we consider to be prudent and efficient
- Cost sharing is only part of the price review process. A number of different factors impact prices, including considerations of operating and capital expenditure efficiency (as noted above), the Weighted Average Cost of Capital (WACC), affordability and mitigating potential price shocks to customers.

90 NSWIC, *Supplementary submission Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares*, November 2018, p 2.

7 Opportunities for further improvement

The outcomes of this review, including the decisions made by IPART, will inform the next pricing determinations for both WAMC and WaterNSW. As well as reviewing the cost share ratios (discussed in Chapter 6), Aither has identified a number of potential improvements to the activity-based cost sharing framework and assessed the costs and benefits of implementing these changes. This chapter discusses the changes recommended by Aither, including valley-specific customer cost shares and simplifying the list of activities. In principle, we support Aither's recommendations, and view that these improvements should be further investigated at the next price reviews when additional information will be available.

7.1 Valley-specific customer cost shares

WaterNSW services customers across a broad geographic area. This includes the Murray-Darling Basin and Coastal valleys.[91] Aither has recommended valley-specific cost customer shares, to the extent that there are different impactors or different activities undertaken in different valleys (compared to what was found at the aggregate level).[92]

It is our understanding that, in general, the activities undertaken by WAMC do not vary by valley. Consequently, we have not identified valley-specific cost shares for WAMC. However, we are open to considering this issue in more detail at the upcoming price review for WAMC (2019-20).

Decision

6 To consider, at the next price reviews for WaterNSW and WAMC, applying valley-specific customer cost shares on an exception basis, where the impactors' relative contribution to the need to undertake an activity and incur costs is materially different to that assumed for the general state-wide customer cost share.

The table below shows some examples of WaterNSW's activities where Aither has provided indicative valley-specific cost shares. It recommended that we could further consider whether there is a case to adopt these and any other potential valley-specific customer cost shares at the next WaterNSW (2020-21) price review.

91 IPART, *WaterNSW review of prices for rural bulk water services from 1 July 2017 to 30 June 2021,* June 2017, p 22.

92 Aither, *Rural water cost sharing review Final Report,* January 2019, p 64.

Table 7.1 Valley-specific customer cost shares

Activity	General customer cost share	Valleys where valley-specific ratios are recommended	Rationale	Indicative valley-specific customer cost share
Water delivery and other operations	95%	▼ Lachlan ▼ Macquarie ▼ Namoi ▼ Border ▼ Gwydir	These valleys incur additional costs to service basic land holder rights licence holders (ie, to provide a level of service that goes above and beyond what they would receive without the dam)	90%
Water delivery and other operations	95%	▼ Murray	The Murray valley incurs additional costs to provide a navigational service	90%
Asset management planning	95%	▼ Murray	The Murray valley incurs additional costs to provide a navigational service	90%
Routine maintenance	95%	▼ Murray	The Murray valley incurs additional costs to provide a navigational service	90%
Corrective maintenance	95%	▼ Murray	The Murray valley incurs additional costs to provide a navigational service	90%
Renewals and replacement	95%	▼ Murray	The Murray valley incurs additional costs to provide a navigational service	90%
Flood operations	80%	▼ Hunter ▼ Macquarie	These valleys receive a specific flood mitigation service	50%
Dam safety compliance	80%	▼ Hunter ▼ Macquarie	These valleys receive a specific flood mitigation service	50%
Environmental planning and protection	80%	▼ Hunter ▼ Macquarie	These valleys receive a specific flood mitigation service	50%

Source: Aither, *Rural water cost sharing review Final Report,* January 2019, pp 64-66.

7.1.1 Reason for our decision

This decision is unchanged from our draft decision. WaterNSW services customers across 13 valleys within NSW. This diverse geographic area has meant that the impactors of some activities conducted by WaterNSW can vary between valleys.

NSWIC's submission to our Draft Report claimed that, in the Murray Valley, for WAMC's *W01-01 Surface water quantity monitoring activity*, extractive users are not the sole impactors (our decision applies a 100% customer share for this activity).[93] However, our consultants Aither could not substantiate this claim.[94] As a result, as part of this review, we have not included an additional valley-specific customer cost share for the Murray Valley in our

93 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 4.

94 Aither, *Rural water cost sharing review Final Report,* January 2019, p 66.

decisions. However, we will to use this information to inform and further investigate claims at the next WAMC price review.[95] This is discussed in further detail below.

The valley-specific considerations include the following:

- In the Lachlan, Macquarie, Namoi, Border and Gwydir valleys, WaterNSW incurs additional costs to service basic land holder rights. These additional costs facilitate increased water security to these users, greater than that they would otherwise have had without dam infrastructure[96]
- WaterNSW is required to operate some of its infrastructure in the Murray valley to provide services for water craft to navigate the river. This is unique to the Murray valley[97]
- Hunter and Macquarie valley have dams (Glenbawn and Burrendong) which were constructed to provide a specific flood mitigation function.[98,99] To the extent that the dam was built with a specific flood mitigation purpose, applying the impactor pays principle would result in the impactor being the NSW Government on behalf of the broader community.

Stakeholders requested that IPART assess all cost shares on a valley-by-valley basis

NSWIC requested cost shares to be assessed on a valley-by-valley basis, to take into account the differences in the services and associated costs between the different valleys.[100] Moreover, stakeholders requested that the framework have the ability to apply different customer cost shares to activities undertaken for MDBA purposes, to account for the regulatory standards that may be for the collective benefit of the Commonwealth and other states and territories.[101]

Our decision, which is consistent with our consultant's recommendation, is to apply valley-specific customer cost shares on an exception basis, where there is sufficient evidence that the impactor or the relative contributions of impactors in a particular valley is materially different to the typical or general case. Aither found that the benefits of adopting a valley-by-valley approach for all activities did not outweigh the complexity this would add to the framework. Therefore, Aither recommended continuing to use an aggregated approach and only applying valley-specific customer cost shares on an exception basis.[102]

95 We will receive WAMC's pricing submission for its next determination period in June 2019. New prices for WAMC will come into effect on 1 July 2020.
96 Aither, *Rural water cost sharing review Final Report,* January 2019, p 64.
97 Murray Irrigation, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares*, June 2018, p. 6.
98 Macquarie River Food & Fibre, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares,* June 2018, p 5.
99 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares,* June 2018, p 7.
100 NSW Irrigators Council, *Submission to the Independent Pricing and Regulatory Tribunal Issue Paper Review of rural water cost shares,* June 2018, p 11.
101 WaterNSW. *Submission to the Independent Pricing and Regulatory Tribunal Issues Paper Review of rural water cost shares*, June 2018, p 9.
102 Aither, *Rural water cost sharing review Final Report,* January 2019, p 64.

WaterNSW and the DoI-Water indicated that implementing valley specific customer cost shares would impose minimal costs

In their submission to our Draft Report, WaterNSW supported the introduction of valley-specific cost shares. It added that it does not forsee any difficulties in applying these valley-specific customer cost shares at its next price review.[103]

DoI-Water agreed that it would consider any valley-specific customer cost shares as it prepares for the upcoming WAMC price review.[104]

Customers of WaterNSW and WAMC agreed with adopting valley specific customer cost shares and called for additional valleys to be considered

LVW's submission to our Draft Report supported the introduction of valley-specific customer cost shares, particularly with the proposed decrease in the customer share for *water delivery and other operations* to 90% for LVW.[105]

NSWIC submitted that an additional valley-specific customer cost share could be considered for the Murray Valley in regards to the WAMC activity *W01 Surface water monitoring*. Its view is that in the Murray Valley, the impactor of water quantity monitoring is not solely the extractive users. Rather, interstate agreements such as the Basin Plan and the Murray Darling Agreement require monitoring to ensure states meet their obligations under the agreements.

On the other hand, Aither noted that, based on discussions with the Department of Industry (which administer this activity), the surface water quantity information gathered under this activity is collected to support river operations. This information is also used to ensure that NSW is meeting its obligations under interstate agreements. However, the fundamental impactor is consumptive users. Aither did not consider it appropriate to pursue a valley-specific customer cost share for this activity.[106] We accept Aither's recommendation and have not included an additional valley-specific cost share in our decisions for this review.

7.2 Assessing the relative impacts of different customer groups

Decision

7 To consider, at the next price reviews for WaterNSW and WAMC, apportioning the customer share of costs between different customer groups on an exception basis. This would apply when one customer group's relative contribution to the need to undertake an activity and incur costs is materially different to other customer groups.

103 WaterNSW, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 6.

104 Department of Industry, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* October 2018, p 2.

105 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 4.

106 Aither, *Rural water cost sharing review Final Report,* January 2019, p 48.

7.2.1 Reason for our decision

Our cost sharing framework allocates costs to either consumptive users (customer share) or the NSW Government (government share). The costs allocated to the consumptive users are then recovered through prices.

Following the release of our Draft Report, we conducted a number of stakeholder workshops to gather information and feedback in addition to written submissions in response to our Draft Report. During the workshop with the NSWIC, members suggested that the framework proposed in the Draft Report, and maintained in this Final Report, does not recognise that different water access licence holders can impose greater costs on WaterNSW and/or WAMC than others. For example, for activities associated with water quality, members put forward that local water utilities require a higher level of water quality and therefore impose higher costs on the businesses than are required by the majority of irrigators.

LVW submission to our Draft Report considered that "different categories of impactors cause the need for the costs to be incurred."[107]

We agree that this issue should be considered further and that there may be merit in distinguishing between customers that impose additional costs on WaterNSW and/or WAMC compared to the wider customer base.

We requested that Aither investigate this addition to our cost share framework further. While Aither agreed that this could improve our cost sharing framework, it cautioned that without further information it could not recommend implementable customer cost shares to reflect this.[108] Due to this limitation, we consider that price structures to target specific impactor groups could be investigated further during a price review.

7.3 Removing some activities from the framework

Some of the activities in the cost sharing framework (for both WAMC and WaterNSW) are categories of costs rather than activities. These categories of costs represent overheads or indirect costs, but not necessarily an activity undertaken by either regulated entity. Aither has recommended that, to be consistent with our activity-based framework, these categories of costs should be removed and that the expenditure allocated to them should be distributed across the existing activities where relevant. Aither recommended that both WAMC and WaterNSW should conduct this allocation process using a transparent and documented internal cost allocation process.[109] This way, the activity-based framework would only include actual activities undertaken by either WAMC or WaterNSW.

Decision

8 To consider, at the next price reviews, removing activities from the framework that represent cost categories (rather than actual activities required to be undertaken) and allocating the associated costs across the remaining activities.

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107 Lachlan Valley Water, *Submission to the Independent Pricing and Regulatory Tribunal Draft Report Review of rural water cost shares,* November 2018, p 3.

108 Aither, *Rural water cost sharing review Final Report,* January 2019, p 18.

109 Aither, *Rural water cost sharing review Final Report,* January 2019, p 63.

This decision is unchanged from our Draft Report. For WAMC, this means the removal of *W08-04 Water Consent Overheads* and *W10-02 Business and Governance Support*. The costs that would otherwise be allocated to these activities would be distributed via a cost allocation process to related activities.

For WaterNSW, this means the removal of *Corporate Systems*. The costs that would otherwise be allocated to this activity would be distributed via a cost allocation process across the remaining WaterNSW activity list.

7.3.1 Reasons for our decision

Stakeholders submitted that reducing the number of activities could improve understanding of our cost sharing framework

IPART held a number of stakeholder workshops following the release of the Issues Paper and Draft Report. NSWIC consider that there were too many activities in the current cost share framework for both WAMC and WaterNSW.[110] In its view, this reduces the ability for stakeholders to understand how the cost sharing framework impacts the prices IPART regulates.

The activity lists for both WAMC and WaterNSW include a number of activities that do not have any expenditure allocated to them (both historically and in the current determination period). Some activities are duplicated in both capital expenditure and operating expenditure categories, but may only be relevant to one of these categories. Aither advised that the actual allocation between operating and capital expenditure for these activity codes is based on the capitalisation policies of the agencies and therefore the duplication of these codes provides administrative/accounting flexibility to the agencies. Accordingly, Aither did not recommend removing the activities where there is duplication based on capitalisation policies, as this has the potential to impose greater administration costs on the agencies by changing their systems. These costs would outweigh the benefits of increased simplicity in the cost sharing framework.[111] We agree in principle with Aither's review but will consider further consolidation of activities at the next price reviews.

WaterNSW suggested further simplification of activities for WAMC

WAMC has two levels of activities. Level one is the broad function that WAMC undertakes and is denoted with a high level activity code (eg, W01, W02, etc.). Under these broad functions, WAMC has a second level or sub-activities which break down the different tasks involved under the high level activity code (eg, W01-01, W01-02, etc.). The sub-activity is the activity level we use in our cost sharing framework. Each sub-activity has a corresponding customer cost share. An example of this is shown in the table below.

110 WAMC has 33 activities and WaterNSW has 17 activities.
111 Aither, *Rural water cost sharing review Final Report,* January 2019, p 63.

Table 7.2 An example of WAMC's activities

W01 Surface water monitoring	Customer share (%)
W01-01 Surface water quantity monitoring	100
W01-02 Surface water data management and reporting	50
W01-03 Surface water quality monitoring	60
W01-04 Surface water algal monitoring	40
W01-05 Surface water ecological condition monitoring	50

Note: The customer shares in this table are consistent with our decisions on WAMC cost shares in this review.

WaterNSW's submission, in response to our draft report, requested that IPART apply cost shares to the broad function rather than the sub-activity level. It adds that the W01 activity code is carried out by the same business unit within WaterNSW and therefore there is no need to disaggregate this activity further.

We acknowledge that there are trade-offs between factors such as transparency, cost-reflectivity and administrative costs when considering whether to have a more or less disaggregated list of activities. To the extent that there are different impactors at the sub-level activity, a more disaggregated list of activities facilitates transparency around the operations of the business and increases the cost-reflectivity of the cost sharing of these activities.

We recognise that there could be scope to make the list of activities more transparent and cost reflective through improved categorisation and description of activities without expanding (and possibly reducing) the number of activities.

A Alternative service-based cost share framework

Aither's scenario 3 service-based framework is shown in the tables below.

Table A.1 WaterNSW service-based cost share framework

WaterNSW service	Description	User share	Mapping current activities to services (share of activity's cost allocated to this service)
Water storage services	These include the storage of water held by entitlement holders (including environmental water managers).	95%	▼ Water delivery and other operations (35%) ▼ Asset management planning (50%) ▼ Routine Maintenance (50%) ▼ Corrective Maintenance (50%) ▼ Renewals and replacement (50%)
Water transportation services	These include the delivery of water to licensed water users (including consumptive entitlement holders, environmental water managers, and other parties such as stock and domestic users).	95%	▼ Water delivery and other operations (30%) ▼ Water quality monitoring (70%) ▼ Routine Maintenance (45%) ▼ Corrective Maintenance (45%) ▼ Asset management planning (45%) ▼ Renewals and replacement (45%)
Environmental services	These include releases of environmental flows in accordance with statutory obligations and operation, maintenance of environmental gauging stations, and environmental management such as the provision of fish passages.	100%	▼ Water delivery and other operations (30%) ▼ Environmental Planning and Protection (100%)
Metering and retail customer services	These include administration services, customer support, customer billing and compliance and maintaining and reading water meters for extractive customers and non-extractive customers.	100%	▼ Customer support (100%) ▼ Customer billing (100%) ▼ Metering and compliance (100%)

WaterNSW service	Description	User share	Mapping current activities to services (share of activity's cost allocated to this service)
Information services	These include providing information on surface and groundwater quantity and quality.	80%	▼ Hydrometric monitoring (70%) ▼ Corporate systems (100%)
Non-routine services	These include costs associated with providing non-routine services (eg Fish River connections/disconnections)	(eg 100%)	▼ Dependent on particular service
Flood management and mitigation services	These include costs associated with managing the potential impacts of flooding.	80%	▼ Flood operations (100%) ▼ Dam Safety Compliance (50%) ▼ Dam Safety Compliance on pre-1997 capital projects – capital (100%) ▼ Hydrometric monitoring (30%)
Recreational services	This includes costs associated with providing recreational opportunities on waterways for water sports and recreational fishing.	0%	▼ Water delivery and other operations (5%) ▼ Routine Maintenance (5%) ▼ Corrective Maintenance (5%) ▼ Asset management planning (5%) ▼ Water quality monitoring (30%) ▼ Renewals and replacement (5%)

Note: The percentages is the hypothetical proportions of costs of the current activities should go into the service.

Source: Aither, *Rural water cost sharing review Final Report*, January 2019, pp 72-77.

Table A.2 WAMC service-based cost share framework

WAMC service	Description	User share	Mapping current activities to services
Water management rulemaking and planning	These include costs associated with developing, assessing and recommending changes to water sharing/water resource plans and water management rules for the management of surface and groundwater resources. It also involves costs associated with facilitating the implementation (such as water availability decisions), monitoring and evaluation of water planning processes and other mechanisms or works required for implementation	90%	▼ W06 – Water management planning ▼ W05 – Water management implementation ▼ W07 – Water management works
Modelling and monitoring	These include modelling and monitoring of surface and groundwater data and information to inform water management planning, implementation, and compliance and enforcement decisions.	70%	▼ W01 – Surface water monitoring ▼ W02 – Groundwater monitoring ▼ W03 – Water take monitoring ▼ W04 – Water modelling and impact assessment
Licensing and approvals (including customer service)	These include the costs associated with the administration of all water licensing information, and customer and billing management.	100%	▼ W08 – Water regulation management (except sub code W08-03) ▼ W09 – Water consents transactions ▼ W10 – Business and customer services
Compliance and enforcement	These include the costs associated with ensuring that license holders comply with the regulatory framework for water and the enforcement of compliance actions where necessary.	100%	▼ W08 – Water regulation management (W08-03 Compliance management only)

Source: Aither, *Rural water cost sharing review Final Report*, January 2019, pp 74-77.

B Application of the impactor pays principle to activities

This appendix details the rationale and application of the impactor pays principle to each of WAMC and WaterNSW's current activities. Our draft decision on the cost share ratios for both WAMC and WaterNSW reflect the rationales discussed below.

Table B.1 Assessment of activity codes for WAMC (operating and capital expenditure)

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
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 stations to the corporate database; and the maintenance and operation of surface water monitoring stations.	70%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* monitoring water height and flow data is required to operate river systems and support water planning, management and regulation. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	50%	*In a world without high consumptive water use* the government is likely to require some form of reporting to disseminate information to the public. *With high consumptive water use* additional reporting is required to manage water sharing and monitor the impacts of water use. **Therefore the joint impactors are both the NSW Government on behalf of the wider NSW and consumptive users.**	50%
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.	50%	*In a world without high consumptive water use* the government is likely to monitor water quality for non-consumptive purposes. *With high consumptive water use* river regulation and water extraction can impact water quality making this the primary driver of the activity.	60%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
			Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.	
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.	50%	*In a world without high consumptive water use* the risk of toxic blue-green algae blooms exists in waterways as it is a natural occurrence in all freshwater sources. Making this the primary driver of the activity *With high consumptive water use* the occurrence of outbreaks could increases because high consumptive use has an effect on water availability and water temperature. **Therefore the major impactors is the NSW Government on behalf of the broader community and the minor impactors are the consumptive users.**	40%
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.	50%	*In a world without high consumptive water use* it is likely that monitoring the health of water sources, including floodplains and wetlands would occur. *With high consumptive water use* increased monitoring would need to be conduction to ensure that adverse environmental impacts of high consumptive use is mitigated. **Therefore the joint impactors are both the NSW Government on behalf of the wider NSW and consumptive users.**	50%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* monitoring groundwater quantity is undertaken to monitor water use to protect water property rights from over extraction. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* monitoring groundwater quantity is undertaken to monitor water use to protect water property rights from over extraction. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* monitoring groundwater quantity is undertaken to monitor water use to protect water property rights from over extraction. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water meters and the collection of data from these meters is required to monitor water use and protect water property rights from over extraction. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water meters and the collection of data from these meters is required to monitor water use and protect water property rights from over extraction. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	50%	*In a world without high consumptive water use* there is likely to exist level of water modelling to facilitate compliance with inter-state water sharing agreements. *With high consumptive water use* modelling is required to ensure sustainable long-term extractive use, making this the primary driver. **Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.**	80%
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.	100%	*In a world without high consumptive water use t*his activity would not be required. *With high consumptive water use* groundwater modelling is undertaken to monitor water use and protect water property rights from over extraction.	100%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
			Therefore the need to undertake this activity is driven solely by consumptive users.	
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water resource accounting is required to monitor and manage the risk of over consumption from users. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* this is required to monitor and manage the risk of over consumption from users. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	50%	*In a world without high consumptive water use* the risk of toxic blue-green algae blooms exists in waterways as it is a natural occurrence in all freshwater sources. Making this the primary driver of the activity *With high consumptive water use* the occurrence of outbreaks could increases because high consumptive use has an effect on water availability and water temperature. **Therefore the major impactors is the NSW Government on behalf of the broader community and the minor impactors are the consumptive users.**	40%
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.	0%	*In a world without high consumptive water use* there is no need to store and deliver water for extractive users therefore there is no impact on environmental flows and no need to undertake environmental water management. *With high consumptive water use* and associated development of infrastructure that regulates water flow this activity is required to manage the impact on the environment, making this the primary driver. **Therefore the need to undertake this activity is driven by consumptive users.**	80%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
			To the extent that flood management services are also provided through river regulation, **the NSW Government on behalf of downstream communities would be a minor impactor of these costs.**	
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.	50%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water management plans are used to facilitate water use by customers. Subsequently, the Government requires performance assessments and evaluations of these plans to ensure broader policy objectives are met. **Therefore the joint impactors are both the NSW Government on behalf of the wider NSW and consumptive users.**	50%
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 the coastal water sources.	70%	*In a world without high consumptive water use* it would not be necessary to develop water plans. There may be some high level planning undertaken for broader policy objectives. *With high consumptive water use* developing water plans, reviewing, amending and replacing water management plans are required to manage water, making the primary driver of this activity. **Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.**	70%
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 the inland water sources.	70%	*In a world without high consumptive water use* it would not be necessary to develop water plans. There may be some high level planning undertaken for broader policy objectives. *With high consumptive water use* developing water plans, reviewing, amending and replacing water management plans are required to manage water, making the primary driver of this activity. **Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.**	70%
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.	0%	*In a world without high consumptive water use* broad land management planning is likely to occur. There is no direct link between this activity and water consumption. **Therefore the need to undertake this activity is driven solely by the NSW Government.**	0%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
W06-04 Drainage management plan development	The development, review, amendment, and extension or replacement of Drainage Management Plans, to address water quality problems associated with drainage systems.	0%	*In a world without high consumptive water use* broad land management planning is likely to occur. There is no direct link between this activity and water consumption. **Therefore the need to undertake this activity is driven solely by the NSW Government.**	0%
W06-05 Regional planning and management strategies	The review of planning instruments, and the development evaluation, review and stakeholder engagement of planning and management strategies for water sharing and water plans (where the water market alone will not provide for economic or urban growth).	70%	*In a world without high consumptive water use* it would not be necessary to develop water plans. There may be some high level planning undertaken for broader policy objectives. *With high consumptive water use* developing water plans, reviewing, amending and replacing water management plans are required to manage water, making the primary driver of this activity. **Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.**	70%
W06-06 Development of water planning and regulatory framework	The development of the operational and regulatory requirements and rules for water access.	75%	*In a world without high consumptive water use* some level of planning is likely to exist. *With high consumptive water use* increased planning and regulatory frameworks are required to facilitate water access making this the primary driver. **Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.**	80%
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.	50%	*In a world without high consumptive water use* there is likely to be some cross-border and national commitments undertaken by the government. *With high consumptive water use* additional activity is required to facilitate water sharing arrangements which protect water property rights from over consumption. **Therefore the joint impactors are the consumptive users and the NSW Government.**	50%
W07-01 Water management works	The undertaking of water management works to reduce the impacts arising from water use or remediate water courses.	50%	*In a world without high consumptive water use* some level of water management works is be required to protect life and property from the effects of flooding. *With high consumptive water use* additional activity is required to rectify or remediate the damage caused by consumptive water use to ensure a healthy river system, making this the primary driver.	80%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
			Therefore the major impactors are the consumptive users and the minor impactors are the NSW Government.	
W08-01 Regulation systems management	The management, operation, development and maintenance of the register for access licences, approvals, trading and environmental water.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* regulation systems management is required to monitor and manage the risk of over consumption from users. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* this activity is required to monitor and manage the risk of over consumption from users. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* this activity is required to monitor and manage the risk of over consumption from users. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
W08-99 Water consents overhead	The administrative overhead costs associated with water consent transactions, which are passed on to customers in the water management tariff.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water licence and the monitoring and management of licences are required. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
W09-01 Water consents transaction	Transactions undertaken on a fee for service basis; including dealings, assessments, change of conditions and new applications for water licence and graphs.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water licence and the monitoring and management of licences are required. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%

Activity	Description	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water licence and the monitoring and management of licences are required. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
W10-02 Business governance and support	The business systems and processes that support organisation-wide activities; including asset management, annual reporting and pricing submissions to IPART.	70%	This does not relate to an activity but is a type of costs. The costs associated with this activity is required to be able to undertake each of the activities WAMC needs to deliver its services. As a way to allocate support costs Aither have recommended an average of the remaining activity codes.	80%
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.	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* water licence and the monitoring and management of licences are required. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%

Source: Aither, *Rural water cost sharing review Final Report, January 2019*, pp 99-118.

Table B.2 Assessment of activity codes for WaterNSW

Activity	Description	Category of expenditure	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
Customer support	The management and administration of the CAG's, customer education and support materials.	Operating	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* customer support is required in the provision of water storage and delivery services. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
Customer billing	Customer enquiries, transaction and complaints services (Helpdesk), invoicing, receipting, debtor management, system administration, postage to collect regulated revenue.	Operating	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* customer billing is required in the provision of water storage and delivery services. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
Metering and compliance	Customer water ordering, customer water accounting management, customer site surveillance, compliance reporting, meter reading, system management and usage apportionment, licensing issues resolution.	Operating	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* metering and compliance is required in the provision of water storage and delivery services. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%
Water delivery and other operations	The water release from dams to customers. Including normal environment and system flows (includes supplementary flow management), short-term and long-term demand forecasting and resource assessment. Works approval and other compliance reporting. Use of SCADA and manual work required to release water from dams, weir and regulators.	Operating and capital	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* this activity is required to service demand requirements for customers, which is the primary driver of this activity. Additionally, dam infrastructure has created the opportunity for ancillary services such as recreational services. The impactor of the additional cost to providing this service would be the other users for example, recreational users. **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government on behalf of recreational users or basic land holder rights.**	95%
Flood operations	Flood staff training and Onsite works required for flood operations.	Operating and capital	50%	*In a world without high consumptive water use* this activity would not be undertaken. (Noting that there would still exist flood risk.)	80%

Activity	Description	Category of expenditure	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
				With high consumptive water use water storage is required to service demand requirements for customers. The existence of the infrastructure leads to greater risk to downstream communities from risk of floods, which is the primary driver of this activity. These assets can also be used to manage the natural occurrence of floods which involves additional costs. **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government on behalf of downstream communities who receive flood management services.**	
Hydrometric monitoring	The monitoring of the availability and condition of surface water by measuring water level, stream flow, rainfall and key water quality indicators.	Operating and capital	90%	*In a world without high consumptive water use* it is likely that some level of hydrometric monitoring may exist (such as monitoring stream and rainfall) for flood management purposes. *With high consumptive water use* this activity is required as the information facilitates the management of water delivery making it the primary driver. **Therefore the major impactor is the consumptive users and the minor impactor the NSW Government on behalf of downstream communities who receive flood management services.**	90%
Water quality monitoring	The water quality monitoring and reporting for storage water. This includes the Fish River water quality management plan.	Operating and capital	50%	*In a world without high consumptive water use* this activity would not be undertaken. Although we note the risk of blue green algae would exist. *With high consumptive water use* water storage is required to service demand requirements for customers, creating the need for water quality monitoring, which is the primary driver. However, monitoring of blue green algae is undertaken on behalf of other users such as recreational, users. **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government**	80%
Direct insurances	Insurance such as public liability and building and other asset insurance.	Operating and capital	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* WaterNSW is required to own and operate dams for water consumption. Insurance is a cost of operating its business. **Therefore the need to undertake this activity is driven solely by consumptive users.**	100%

Activity	Description	Category of expenditure	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
Corrective maintenance	This includes the breakdown maintenance of assets which provide services to customers and other water users.	Operating and capital	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* WaterNSW is required to undertaken maintenance in order for it to continue to provide its services, making this the primary driver. Additionally, dam infrastructure has created the opportunity for ancillary services which driver increased maintenance cost. The impactor of this additional cost is the other users for example, recreational users **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government on behalf of recreational users or basic land holder rights.**	95%
Routine maintenance	The planned or condition-based maintenance of assets which provide services to customers and other water users.	Operating and capital	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* WaterNSW is required to undertaken maintenance in order for it to continue to provide its services, making this the primary driver. Additionally, dam infrastructure has created the opportunity for ancillary services which driver increased maintenance cost. The impactor of this additional cost is the other users for example, recreational users **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government on behalf of recreational users or basic land holder rights.**	95%
Asset management planning	The asset planning, including safety and maintenance planning, asset condition auditing, operational risk and incident management. It also includes the related procurement, dam safety compliance and operations.	Operating and capital	100%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* WaterNSW is required to undertaken asset management planning across all of its assets. We recognise that the majority of WaterNSW's assets related to the provision of services to customers, making this the primary driver. In addition a small proportion of assets are used to provide other services to other users making this the secondary driver. **Therefore the major impactor is the consumptive users and the minor impactor is the NSW Government on behalf the broader community.**	95%

Activity	Description	Category of expenditure	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
Dam safety compliance	The dam surveillance and dam safety inspections, reviews, audits and associated risk assessment.	Operating and capital	50%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* infrastructure is required to service customers. The development of this infrastructure leads a number of regulatory and compliance standards which WaterNSW must meet, making this the primary driver. **Therefore the need to undertake this activity is driven by consumptive users.** To the extent that flood management services are also provided through river regulation, **the NSW Government on behalf of downstream communities would be a minor impactor of these costs.**	80%
Dam safety compliance pre-1997 capital projects	The dam surveillance and dam safety inspections, reviews, audits and associated risk assessment based on 1997 standards of service.	Capital	0%	This activity is a legacy costs and therefore we do not apply the impactor pay principle. Rather the costs are allocated to the NSW Government.	0%
Environmental planning and protection	The environmental management which includes strategic and specific planning and assessment, fish passages, carbon neutrality and cold water pollution.	Operating and capital	50%	*In a world without high consumptive water use* this activity would not be required. *With high consumptive water use* infrastructure is required to service customers. The development of this infrastructure leads a number of regulatory and compliance standards which WaterNSW must meet, making this the primary driver. **Therefore the need to undertake this activity is driven by consumptive users.** To the extent that flood management services are also provided through river regulation, **the NSW Government on behalf of downstream communities would be a minor impactor of these costs.**	80%
Corporate systems	This system is responsible for the delivery of information services, major projects and improvement initiatives. Some systems provide services to customers and stakeholders.	Operating and capital	100%	This does not relate to an activity but is a type of costs. The costs associated with this activity is required to be able to undertake each of the activities WaterNSW needs to deliver its services. As a way to allocate support costs Aither have recommended an average of the remaining activity codes.	80%

Activity	Description	Category of expenditure	Current customer share (%)	How we have identified the impactor	Updated customer share (%)
Irrigation Corporation District (ICD) rebates	This is a rebate paid to ICDs based on avoided cost incurred in relation to activity 'customer billing and 'metering and compliance'.	Operating and capital	100%	This is not covered by the cost sharing framework.	100%
Renewals and Replacement	This activity includes repairs for expected wear and tear and usage of water infrastructure.	Operating and capital	90%	This rationale is the same as WaterNSW's corrective maintenance activity.	95%
Risk Transfer Product	Cost of insurance product to manage revenue volatility arising from tariff structure.	Operating	100%	This is not covered by the cost sharing framework. Water customers fund 100% of these costs.	100%

Source: Aither, Rural water cost sharing review Final Report, January 2019, pp 85-98.

C Impacts of our decision by valley

This appendix presents the estimated impacts of our decisions by valley. It is important to note that the estimated impact of our draft changes to each of the valley's customer share of WAMC and WaterNSW's efficient costs is based on the current allocation of costs over the 4 year period from 2018-2021. Therefore, the estimated impact on the customer share is illustrative only and may differ if costs are allocated differently in future determination periods.

Table C.1 Impact of our decisions on WAMC's customer shares by valley

Valley	Current (%)	IPART Decision (%)	Increase (decrease) in customer share (%)
Border	71.4	80.0	8.6
Gwydir	66.0	77.3	11.2
Namoi	71.3	81.6	10.3
Peel	71.6	84.8	13.2
Lachlan	73.4	83.1	9.7
Macquarie	72.2	82.8	10.7
Far West	62.2	77.0	14.9
Murray	65.8	77.3	11.5
Murrumbidgee	65.3	76.9	11.5
North Coast	74.9	87.7	12.8
Hunter	77.0	85.5	8.4
South Coast	71.4	78.4	7.0
Inland (Groundwater)	95.3	95.7	0.4
Coastal (Groundwater)	97.6	97.7	0.1
Total	**76.3**	**84.2**	**7.9**

Note: customer prices in the North Coast and South Coast valleys are currently set below full cost recovery. Numbers may not add due to rounding.

Source: IPART analysis.

Table C.2 Impact of our decisions on WaterNSW's customer shares by valley

Valley	Existing (%)	IPART Decision (%)	Increase (decrease) (%)
Border	86.6	91.3	4.6
Gwydir	91.9	90.6	(1.3)
Namoi	46.1	45.1	(1.0)
Peel	84.6	87.0	2.4
Lachlan	89.8	91.2	1.4
Macquarie	89.4	91.2	1.8
Murray	94.5	93.5	(0.9)
Murrumbidgee	91.8	92.9	1.1
Lowbidgee	100.0	100.0	0.0
North Coast	85.2	90.3	5.2
Hunter	86.7	91.1	4.4
South Coast	84.8	90.7	5.9
Fish River	100.0	100.0	0.0
Total	**83.5**	**84.2**	**0.7**

Note: customer prices in the North Coast and South Coast valleys are currently set below full cost recovery. Numbers may not add due to rounding.

Source: IPART analysis.

D Summary of key developments in IPART's rural water cost sharing framework

We developed our customer cost shares at an activity level, designating each activity with a code. Both WaterNSW and WAMC present their costs in line with these activity codes. For each activity code we determine a customer / NSW Government cost shares based on the impactor pays principle which is that the party that causes the need to undertake an activity and incur the cost of an activity should pay the cost of that activity. Once we have determined the efficient cost of each activity, we apply the customer cost shares to determine the user and NSW Government shares of the regulated business' total efficient costs. For example, if we determine an activity code has an efficient cost of $1,000 and that the customer/NSW Government cost share of that activity is 50/50, the customer and NSW Government shares of this cost will be $500 each.

This appendix provides a brief history of the key developments in our cost sharing framework, including the key concepts used in our approach.

D.1 2001 bulk water price determination

In our 2001 bulk water price review, we engaged ACIL Consulting to review (then named) State Water's water management costs and to provide a framework for allocating these costs between users and the NSW Government.[112] ACIL developed a conceptual framework for allocating costs that was based on the 'impactor pays' principle, and that excluded legacy costs.[113] In general, we adopted the principles that underpinned this approach.[114]

Specifically, in our 2001 bulk water price determination, we moved from a 'beneficiary pays' approach to an 'impactor pays' approach. (Box D.1 describes the difference between these approaches.) Our earlier cost shares reflected a mixture of the two approaches.

Box D.1 The 'beneficiary pays' and 'impactor pays' principles

- 'Beneficiary pays' – users pay charges on the basis on benefiting from the service
- 'Impactor pays' – those ultimately responsible for create the costs, or the need to incur the costs, pay the costs.

In recommending the application of the 'impactor pays' principle, ACIL defined 2 key concepts[115]:

112 IPART, *Department of Land and Water Conservation Bulk Water Prices*, October 2001, p 27.
113 ACIL Consulting, *Review of Water Resource Management Expenditure in the NSW Department of Land and Water Conservation and State Water business*, July 2001, pp 42-43.
114 IPART, *Department of Land and Water Conservation Bulk Water Prices*, October 2018, p 30.
115 ACIL Consulting, *Review of Water Resource Management Expenditure in the NSW Department of Land and Water Conservation and State Water business*, July 2001, p xiii.

- **Legacy costs:** These principally current and future costs are attributable to past activities. Current and future water users should not have to meet the expenditure caused by past users
- **Impactor pays:** Non-legacy costs should be allocated to current stakeholders in proportion to the contribution of their current and future actions to the need for these expenditures.

ACIL's approach would fully allocate all legacy costs to the NSW Government, and would allocate all forward looking costs according to the 'impactor pays' principle.[116] For some costs, the 'impactor' would be both the NSW Government and extractive users. Under this framework, WaterNSW's total costs were broken down according to their associated key activities (for example, dam safety compliance and water quality monitoring). Within each of these activities, costs that related to past users were regarded as legacy costs and fully allocated to the NSW Government. Future expenditure that related to current or future users was allocated according to whichever party (users of the community) created the costs or the need to incur the costs (the 'impactor pays' principle).

Our decision

After considering ACIL's recommendations and stakeholder submissions made in response to our draft report, we came to the following decisions:

- To determine legacy costs, it is more appropriate to draw a line in the sand at a particular date and to consider only expenditure required to meet standards established at or before that date. We drew a line in the sand at July 1997, so the NSW Government bore all legacy costs incurred before that date[117]
- The 'impactor pays' principle should be applied to allocate bulk water costs, but this process requires a significant level of judgement.[118]

D.2 2006 bulk water price determination

In our 2006 Determination for (then named) State Water, we used the principles for allocating costs between users and the NSW Government that we established in the 2001 Determination (and adopted in the 2005 Determination)[119]. We engaged the Centre for International Economics (CIE) to review the agencies' proposals and to advise appropriate ratios for cost allocation.[120] We also considered stakeholders' views in response to our draft report. While we maintained our general approach to cost shares, we reviewed and changed specific allocations[121]:

116 ACIL Consulting, *Review of Water Resource Management Expenditure in the NSW Department of Land and Water Conservation and State Water business,* July 2001, pp 42-43.
117 IPART, *Department of Land and Water Conservation Bulk Water Prices*, October 2018, p 31.
118 IPART, *Department of Land and Water Conservation Bulk Water Prices*, October 2018, p 33.
119 IPART, *Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, September 2006, p.35.
120 IPART, *Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010*, September 2006, p.37.
121 IPART, *Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010,* September 2006, p.36.

- We agreed with CIE's recommended to continue using the customer cost shares established in 2001 with minimal changes. CIE noted that between 2001 and 2006 there were a number of new regulatory changes such as the establishment of the water sharing plans and the National Water Initiative, however, they concluded that the Tribunals principles for cost allocation are robust enough to apply to any new activities
- We reduced the users share for capital projects related to flood mitigation from 100% to 90% recognising the expenditure is primarily to maintain flood mitigation assets, but users also derive some benefit from the flood mitigation works[122]
- We increased the user share of costs for hydrometric monitoring from 70% to 90%, because these activities play some role in flood mitigation, rather than the 100% user share that we adopted in our draft determination.[123]

Table below shows IPART's decision on the customer cost shares.

Table D.1 IPART's 2006 findings and decisions on cost shares (%) for State Water

Product	2001 IPART Determination	State Water submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
Capital expenditure					
Asset management planning	100	100	70-100	100	100
Plant and equipment	100	100	70-100	100	100
Dam safety compliance capital costs – pre 1997	0	0	0	0	0
Dam safety compliance capital projects – post 1997	50	50	0-50	50	50
MPM capital projects	100	100	70-100	100	90
Structure enhancement capital projects	100	100	100	100	100
OH&S compliance system	50	100	50	50	50
Fish passage works	50	50	0	50	50

122 IPART, Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010, September 2006, p.40.

123 IPART, Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010, September 2006, p.39.

Product	2001 IPART Determination	State Water submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
Cold water impacts mitigation works	50	50	50	50	50
Salt inception schemes	10	10	10	10	10
Fish River Supply Scheme	NA	100	100	100	100
Operating expenditure					
Customer support	100	100	100	100	100
Hydrometric monitoring	70	100	70-100	100	90
Water quality monitoring	50	100	50	50	50
River operations	100	100	70-100	100	100
Dam safety compliance O&M	50	100	50	50	50
Preventative maintenance	100	100	70-100	100	100
Billing & receipts	100	100	100	100	100
Insurance	100	100	50	100	100
Metering	100	100	100	100	100
Salt inception schemes	10	10	10	10	10
Fish River Supply Scheme	NA	100	100	100	100

Source: IPART, *Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010,* September 2006, p 43.

Table D.2 IPART's 2006 findings and decisions on cost shares (%) for DNR

Activity	IPART 2001 Determination	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
C01-01 Surface water quantity monitoring/reporting/information provision	70,80,0,50	90	70	70	70
C01-02 Surface water state-wide data management	0,0	90	50	50	50
C01-03 Surface water quality monitoring/reporting/information provision	50,50,0,50	63	50	50	50

Activity	IPART 2001 Determination	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
C01-04 Surface water ecology/biology information provision	50	63	0	50	50
C01-05 Surface water quality state-wide database management	50,0	63	50	50	50
C01-06 Surface water asset management quantity/quality information provision	70,80,50,50	90	50-70	70	70
C02-01 Groundwater quantity monitoring/reporting/information provision	100,100	100	70-100	100	100
C02-02 Groundwater quality monitoring/reporting/information provision	100,100	100	70-100	100	100
C02-03 Groundwater state-wide corporate database management	100	100	70-100	100	100
C02-04 Groundwater asset management quantity/quality information provision	100,100,100,100	100	70-100	100	100
C03-01 Coastal and estuary monitoring and information provision	70,80,50,50	0	0	0	0
C03-02 Coastal and estuary asset management quantity and quality monitoring	70	0	0	0	0
C04-01 Analytical services for water quality programs	50	81	50	50	50
C05-01 Water projects sharing/accounting	50,100	100	0-30	50	50
C05-02 Water assessments	0,10,100	50	0-30	30	30
C05-03 Water balances/accounting	100,100,100	100	100	100	100
C05-04 Groundwater balances/accounting	100,100,100	100	100	100	100
C06-01 Environmental water provisions (Parts 3 & 5)	NA	100	0	0	0
C06-02 Limits to availability of water (Parts 5 & 8)	NA	100	70-100	100	100
C06-03 Rules for managing access licences (Parts 5 & 9)	NA	100	100	100	100
C06-04 Access dealing rules (Parts 5 & 10)	NA	100	100	100	100
C06-05 System operation rules (Part 12)	NA	100	100	100	100

Activity	IPART 2001 Determination	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
C06-06 Monitoring and Reporting (Parts 5 &13)	NA	100	0	50	50
C06-07 Plan amendments (Part 14)	NA	100	50	50	50
C07-01 Water sharing plan development	100,100,100	100	50	70	70
C07-02 Water use plans		100	50-70	70	70
C07-03 Drainage plans		0	0	0	0
C07-04 Floodplain plans	0	0	0	0	0
C07-05 Floodplain harvesting plans	100	100	70-100	100	100
C07-06 Environmental water management planning	0	100	0	0	0
C07-07 Water savings planning		100	0	0	0
C07-08 Delivery capacity rights planning	100,100,100	100	70-100	100	100
C07-09 Wetland recovery plan major initiative	0	100	0	0	0
C07-10 NSW wetland policy implementation		80	0	0	0
C07-11 NRC reviews and support of water sharing plans		100	0	50	50
C07-12 CMA support for environmental water programs		50	0	0	0
C07-13 River health and water quality plans	0	90	0	0	0
C07-14 Impact of dams on water quality	0	0	0	0	0
C07-15 Blue-green algae operational planning	0,0,0	0	0	50	50
C07-16 Bacterial, chemical, salinity and other regional operational planning	0	0	0	0	0
C07-17 Interstate and national commitments	50	20	0	50	50
C08-01 River management works planning	100	100	50	50	50
C08-02 River bank and river bed remediation	100	100	50	50	50
C09-01 Head office systems and administration	80,100	100	100	100	100
C09-02 Regional administration	80,100,100	100	100	100	100
C09-03 Head office register administration	100,100,100	100	100	100	100

Activity	IPART 2001 Determination	DNR submission	CIE recommendation	Tribunal's draft finding	Tribunal's finding
C09-04 Licence cleansing	100,100,100	100	100	100	100
C09-05 Town water supply entitlements	100,100	100	100	100	100
C09-06 Compliance	100,100	100	100	100	100
C09-07 Systems development		100	100	100	100
C10-01 Water Act 1912 consents transactions	100,100,100,100,100, 100	100	100	100	100
C10-02 Water Management Act 2000 consents transactions	100,100,100,100,100, 100	100	100	100	100
C11-01 Metering and billing water usage	100,100	100	100	100	100
C11-02 WRM business development	100	100	70	70	70
C11-03 Financial administration	50,80	80	70-100	100	100
C12-01 Metering and monitoring of water use systems on unregulated rivers and groundwater	90,90	100	70	90	90
C12-02 IMEF	0	100	0	0	0
C12-03 Groundwater monitoring network for water sharing plans and extension of surveillance and salinity network	100,100	100	70	70	70
C12-04 Integrated corporate water and ecological databases	80,50	50	30	50	50
C12-05 Water and wetland recovery management	0	100	0	0	0

Note: In its proposal DNR submitted new activity codes. The IPART 2001 Determination column maps the 2001 Determination cost shares against DNR's submission. For example, activity code C01-01 is a consolidation of 4 activity codes in the 2001 Determination, hence 4 different cost share ratios are allocated within the IPART 2001 Determination column.

Source: IPART, *Bulk water prices for State Water Corporation and Water Administration Ministerial Corporation from 1 October 2006 to 30 June 2010,* September 2006, p.42.

D.3 2017 State Water price determination

In the 2017 WaterNSW price review, IPART made the decision to maintain the customer cost shares determined in 2001 and amended in 2006. This was consistent with WaterNSW's proposal to maintain the existing customer shares as applied by the ACCC in its 2014 Decision.[124]

[124] IPART, WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021, June 2017, p. 97.

In 2012, the NSW Government asked IPART to conduct a review into bulk water charges to identify options for determining the NSW Government's cost share for bulk water charges in NSW. IPART recommended the continuation of the existing approach to determining NSW Government cost shares, using the cost allocation ratios determined in 2001 and 2006 until 1 July 2017. IPART recommended a review of the cost shares every second pricing determination.[125] Given this, IPART engaged consultant Frontier Economics to review the cost shares framework proposed by WaterNSW for the 2017 determination period.[126] Frontier Economics report identified a number elements of how the application of the impactor pays principle and legacy costs in the current cost sharing framework may limit the effectiveness of the framework and its ability to meet IPART's objectives.[127]

To improve the cost sharing framework, Frontier Economics recommended that IPART adopt a service-based cost sharing framework. However, they outlined a number of pre-conditions required for their proposed service-based cost sharing framework to be implemented. This included:

- A range of detailed information covering:
  - Description of WaterNSW's services in order to allocate costs to each of them
  - A detailed register of dedicated and shared assets and activities, and
  - A clear and well-documented process (including specification of an appropriate causal allocator), for allocating the costs of shared assets and activities across impactors and services.
- Potential changes to the current information collection and billing systems
- Potential legislative, policy of regulatory changes to enable the allocation of costs to unbilled impactors, and
- Broader consultation and stakeholder engagement to ensure that the cost sharing framework is both a long-term and sustainable approach.[128]

Given these pre-conditions and time constraints during a price review, IPART decided that it was not feasible to implement aspects of Frontier's recommendations in the 2017 determination period. We made the decision to conduct an extensive review of the cost sharing framework including the cost shares before the 2021 determination.[129]

125 IPART, Review of rural water charging systems – Final Report, August 2012, p.8.
126 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016.
127 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, pp 53-55.
128 Frontier Economics, *Review of WaterNSW cost shares: Report prepared for IPART*, December 2016, p 51.
129 IPART, *WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, June 2017, pp 101-102.

E Summary of water management and rural bulk water services

We determine prices for monopoly water management services for WAMC and monopoly rural bulk water services for WaterNSW. WAMC's prices are also currently set under a 4-year determination period, but from 1 July 2016 to 30 June 2020 (the 2016 Determination). WaterNSW's prices are currently set under a 4-year determination period, from 1 July 2017 to 30 June 2021 (2017 Determination).

IPART aims to set prices that allow both WAMC and WaterNSW to recover customers' share of the efficient costs of providing monopoly services. Prices that reflect customers' share of the efficient cost provide price signals to customers that encourage the efficient use of these services.

For both WAMC's 2016 Determination and WaterNSW's 2017 Determination, we started by making a decision on the scope of the monopoly services provided by the respective businesses, which were then subject to our pricing functions. We then set prices based on: a) our understanding of the efficient costs of the activities involved in providing these services and b) our customer cost shares which specify what percentage of each activity is to be recovered from customers through regulated prices. This appendix summarises WAMC's and WaterNSW's monopoly services, which are subject to our price determinations.

E.1 WAMC services and customers

WAMC is the legal entity that is responsible for water management in NSW. Water management services involve protecting water users' property rights through management of the water entitlement and licensing system. WAMC's key activities include:[130]

- Developing Water Sharing Plans
- Determining volumes of water available for allocation
- Management of registers and trading
- Monitoring water quantity, quality and environmental health, and
- Collecting data on water take.

There are three categories of WAMC's prices that we set in the 2016 Determination:[131]

- **Water management prices** – annual prices which recover the costs of water planning and management and apply to all categories of water access licences. These prices include entitlement ($ per ML of entitlement) and water take ($ per ML of water take) prices, and a minimum annual charge

130 IPART, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016*, June 2016, p 35.

131 IPART, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016*, June 2016.

- **Consent transaction charges** – which recover the costs of one-off services such as amending water access licences, performing water allocation assignments and issuing works approvals
- **Meter service and reading charges** – annual charges for maintaining and reading water meters.

WAMC's water management services are currently delivered on behalf of WAMC by the Department of Industry (Water), WaterNSW, and the Natural Resource Access Regulator (NRAR).

E.2 WaterNSW's services and customers

WaterNSW was formed on 1 January 2015 under the *Water NSW Act 2014* (NSW) (the Act). The Act provided for the former State Water Corporation to become WaterNSW. It also abolished the former Sydney Catchment Authority (SCA) and transferred its functions to WaterNSW.

WaterNSW supplies raw water to, and develops and delivers raw water infrastructure solutions for, rural NSW and the Greater Sydney area.[132] Cost-shares discussed in this Issues Paper refer to services provided by WaterNSW to its rural customers (ie, the former State Water Corporation component of WaterNSW).

In rural NSW, WaterNSW maintains, manages and operates major infrastructure to deliver bulk water to licensed water users on the State's regulated rivers. There are about 6,300 customers in 14 regulated river systems. WaterNSW owns and operates 20 dams and more than 280 weirs and regulators to deliver water for town water supplies, industry, irrigation, stock and domestic use, riparian use and environmental flows. It provides services to various customers including irrigation corporations, country town water supply authorities, farms, mines and electricity generators.[133]

The scope of WaterNSW's services has evolved over time, as has the type of users of these services and the nature of their use. The roles and responsibilities of WaterNSW are prescribed by the Act. Under section 6 of the Act, WaterNSW is required to meet the following primary objectives:[134]

- Capture, store and release water in an efficient, effective, safe and financially responsible manner
- Supply water in compliance with appropriate standards of quality
- Ensure that declared catchment areas and water management works in such areas are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment
- Provide for the planning, design, modelling and construction of water storages and other water management works, and

132 WaterNSW, *WaterNSW Annual Report 2015-16*, 2016, pp 6-7.
133 WaterNSW, *pricing proposal to IPART*, June 2016 p 12.
134 *Water NSW Act 2014*, section 6(1).

- Maintain and operate the works of WaterNSW efficiently and economically and in accordance with sound commercial principles.

Other objectives of WaterNSW include: to be a successful business; exhibit a sense of social responsibility towards the community and regional development; and conduct its operations in compliance with the principles of ecologically sustainable development.[135]

WaterNSW provides services in the Murray-Darling Basin (MDB) and Coastal valleys. WaterNSW is also responsible for the Fish River Water Supply Scheme (FRWS), which sources water from Oberon Dam and supplies bulk water to four major customers (EnergyAustralia, Lithgow City Council, Oberon Council and WaterNSW Greater Sydney) and approximately 280 smaller customers.[136]

WaterNSW also recovers a portion of the NSW Government's contributions to the Murray Darling Basin Authority (MDBA) and the Border Rivers Commission (BRC) through its water prices. The MDBA and the BRC have responsibility for coordinating and managing water resource management and water storage and delivery-related activities where they involve more than one state, with the costs of managing and maintaining assets under these arrangements jointly paid for by the signatory states.

WaterNSW's rural bulk water charges for its monopoly services comprise:

- **Water charges,** for the storage and delivery of water on regulated rivers, which:
  - are set on a valley basis
  - are generally comprised of two-part tariffs: $ per ML of water entitlement and $ per ML of water taken , and
  - for some valleys (ie, Border, Murray and Murrumbidgee), include the addition of MDBA and BRC costs.

Miscellaneous charges, to recover the cost of non-routine services. They include meter service charges, which WaterNSW may levy on users of WaterNSW-owned meters on regulated rivers, to recover the costs of maintenance and administration related to WaterNSW-owned meters.

135 *Water NSW Act 2014*, section 6(2).
136 WaterNSW *pricing proposal to IPART*, June 2016, p 11.

Glossary

2010 Determination	*Review of bulk water charges for State Water Corporation from 1 July 2010 to 30 June 2014,* June 2010 (Determination No. 2, 2010)
2016 Determination	*Water Administration Ministerial Corporation Maximum prices for water management services from 1 July 2016*, 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 (WAMC)
2017 Determination	*WaterNSW prices for rural bulk water services from 1 July 2017,* June 2017
2017 determination period	The period commencing 1 July 2017 to 30 June 2021, as set in the 2017 Determination (WaterNSW)
ACCC	Australian Consumer and Competition Commission
ACCC's Pricing Principles	*Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011
Beneficiary pays	Where the costs of a service or activity are allocated to those who benefit from the service or activity
BRC	Border Rivers Commission
CSO	Community Service Obligation
Customer share	The share of the revenue requirement that is recovered from the customer, determined according to the 'impactor pays' principle. We have decided to refer to what has previously been known as the 'user share of costs' as the 'customer share of costs', given that there are users of rural bulk water services (eg, the community at large), that do not contribute to the recovery of WaterNSW's NRR
DoI – Water	Department of Industry and Water (formerly the Department of Primary Industries Water)
Entitlement	ML of entitlement under the *Water Act 1912* (NSW) or unit shares under the *Water Management Act 2000* (NSW)

FRWS	Fish River Water Supply Scheme
Government share	The share of the revenue requirement that is recovered from the NSW Government, determined according to the 'impactor pays' principle.
Greater Sydney area	Water catchments that service WaterNSW storages including the Blue Mountains, Shoalhaven, Warragamba, Upper Nepean and Woronora catchments
Impactor pays	Where the costs of a service or activity are allocated to those who create the need to incur the costs
IPART	Independent Pricing and Regulatory Tribunal of NSW
IPART Act	*Independent Pricing and Regulatory Tribunal Act 1992* (NSW)
Legacy cost	Costs of activities or services that would still be required even if there was no demand for the regulated service
MDB	Murray Darling Basin
MDBA	Murray Darling Basin Authority
ML	Megalitre
NRAR	Natural Resources Access Regulator
NRR	Notional revenue requirement. Revenue requirement set by IPART that represents the efficient costs of providing WaterNSW's regulated monopoly services and/or WAMC's water management services
NSW	New South Wales
SCA	Sydney Catchment Authority (now part of WaterNSW)
State Water	Former State Water Corporation (now part of WaterNSW)
WAMC	Water Administration Ministerial Corporation
Water Act	*Water Act 2007* (Cth)
WaterNSW	WaterNSW is the organisation responsible for managing raw water supply across NSW by bringing together the Sydney Catchment Authority (SCA) and State Water Corporation (State Water) (at 1 January 2015)