



## Pricing proposal

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Submission to IPART for prices from 1 July 2021 for water management services provided by Department of Planning, Industry and Environment—Water and the Natural Resources Access Regulator on behalf of the Water Administration Ministerial Corporation

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### **More information**

Department of Planning, Industry and Environment—Water, and the Natural Resources Access Regulator

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## A message from Deputy Secretary, Water and Chief Regulatory Officer

We are pleased to present our proposed expenditure program and prices for the regulatory period from 2021 to 2025.

We are making this proposal in a time of persistent drought, after a summer of unprecedented fires, and within the ongoing limitations and economy-wide effects of the COVID-19 pandemic. Our proposal takes into account these effects on people and businesses across regional communities all over NSW.

Our program of work will make a real difference to service levels for the delivery of water across NSW and will support the recovery and growth of businesses in regional NSW.

In the period soon after IPART last set prices in 2016, we as government agencies delivering water management services across regional NSW were understandably criticised, investigated, reviewed and held to account for the way in which we had been undertaking those services.

We accepted the recommendations of independent inquiries and have responded by improving and increasing the services we deliver to meet our statutory obligations, while also finding efficiencies in the way we do them. The task of improving water resource management and our performance is not yet complete, but substantial progress has been made. With this progress comes substantially increased costs and the need for additional funding. Our costs cannot reduce to previous levels if we are to maintain the progress we have made.

Importantly, with the establishment of the independent Natural Resources Access Regulator (NRAR) in early 2018, NSW now has in place compliance and enforcement arrangements that will restore community confidence in water compliance. NRAR has adopted a 'boots on the ground' approach to monitoring compliance to re-establish a visible compliance presence throughout NSW, enabling us to respond promptly to community concerns about compliance with water laws.

Much work has been done to get NRAR's operations underway and delivering results. We are undertaking more compliance work across NSW than ever before. We have more than 60 compliance staff in the field and more than 90 frontline staff in total. Their work is assisted by the use of innovative techniques and new technology. This improves the effectiveness and efficiency of our effort. We are getting more from every hour spent in the field than in the past. This is borne out by the compliance outcomes since our establishment: 3,300 alleged breaches of water law logged, over 1500 compliance actions completed and nearly 2,000 investigations finalised.

NRAR will continue its progress towards being a best practice, modern regulator over the next regulatory period. We will do this by using a wide array of proactive compliance tools that encourage voluntary compliance through increased intelligence led monitoring, audit, education, engagement and communication campaigns. This approach will continue to be underpinned by an effective enforcement capability for serious and deliberate non-compliance that also serves as a strong deterrent to non-compliance for all water users.

This necessarily brings with it significantly greater resourcing costs for compliance and enforcement. NRAR will minimise its costs by making efficiency improvements from increased use of technology such as satellite imagery and drones, increasing staff capability, continuously refining procedures within a structured quality management system and through a progressive shift towards more proactive compliance that increasingly utilises more cost-efficient tools such as monitoring, audit, education, engagement and communications.

This approach will benefit water users and the community of NSW by restoring confidence in enforcement of the water management framework, ensuring fair access to our precious water

resources by all water users, protecting the asset value of water entitlements held by water users, and protecting the sustainability of water resources for the whole NSW community.

Along with establishing NRAR to enforce compliance with NSW water laws and regulations, we have been setting in place plans that shape the way water is to be used in regional NSW. These enduring but adaptive plans provide rules that clearly set out the conditions under which water can be extracted from our waterways, how much can be extracted and how water will be saved for environmental use, creating greater certainty and fairness for users and the community through knowing that precious water resources will not be misused and will exist into the future.

We are preparing a series of regional water strategies that will cover NSW, looking out to the next 20 to 40 years' water needs, future demand, the challenges and choices involved in meeting those needs, and the actions we can take to manage risks to water availability. These strategies respond to water users telling us that they want us to be accountable for our decisions and transparent in our decision-making, and to use strong evidence for our decisions. Implementation of the strategies will do that, because they will make our approach clearer to water users and the wider public and allow us to help water users while better managing the state's resources. The regional water strategies will be based on the best available evidence about climate risk, underpinned by new climate data and modelling that will improve our understanding of past climate conditions and plausible climate futures. This will give us a more accurate picture of the frequency, duration and magnitude of extreme climate events such as droughts, which are the largest risk to our water supplies.

We have finalised the Floodplain Harvesting Action Plan for the Northern Darling Basin and are preparing to issue licences as scheduled by July 2021. We will use the best available facts, data and scientific analysis to underpin the licensing framework, and to explain what we are doing to stakeholders. We are working to increase our ability to measure and report transparently on floodplain harvesting take in near real-time. The science and modelling we have undertaken to date, which will significantly improve estimates of floodplain harvesting, has been independently acknowledged.

We have prepared 20 water resource plans for the Murray-Darling Basin that set out how each region will balance their specific community, cultural, environmental and economic water needs and uses. Water users will benefit from clear rules about how water will be used, how much water can be taken from the river, what annual limits will exist and how the river's health will be maintained and can plan their business activities accordingly. Details and rules about how water is to be shared between users and the environment is also set out in our state-required water sharing plans, which now cover all inland surface and groundwater sources in NSW. A clear plan of action during the next regulatory period comes from these adaptive plans, as we systematically audit and review them, allowing us to update them with what is known about the relevant water resource using current data, technology and modelling capabilities, and allowing us to make improvements reflecting what we've learnt about how these plans best work. Water users will benefit from the ongoing improvements we will make to keep the plans meaningful.

We are working with water users on new metering requirements, where installation of meters that will accurately measure water taken from rivers, creeks and groundwater will be compulsory for most water take. By late 2023, 95% of water use across regional NSW will be measured accurately, which will reduce overuse of water, increase water available to downstream users and allow us to better manage water for the environment.

We are being more transparent, which is demonstrated by increased visibility of what we are doing and how we are doing it. We are sharing information, assumptions and methodologies publicly already, and pledge to continue to find ways to share meaningful information with water users, stakeholders and the wider community.

We are well advanced to meeting the commitments set out in the Water Reform Action Plan, mandated by our legislation and expected by our stakeholders, community and the NSW



Government as demonstrated by a recent independent review. In the 2021 regulatory period, we will build on what we have been doing since 2017.

Our ability to undertake the water management activities delegated to us, to the standards expected by stakeholders, community and the NSW Government, is substantially reliant on resourcing. This Pricing Proposal sets out the resourcing and consequential expenditures we need to provide efficient water resource management and to meet those required standards.

We are not proposing that the very significant step change increase in the efficient costs of water resource management is passed onto water users already impacted by extended drought, bushfires and the COVID-19 pandemic in full as of July 2021, as that would cause bill shocks that may delay the recovery of regional economies. While recognising that this is a decision to be made by IPART, we propose most price increases be capped at 5% a year through to mid-2025. This will result in a period of lower levels of cost recovery from water users of the significantly increased cost base that is necessary for us to deliver NSW water management services to the standards expected by stakeholders, community and the NSW Government.



Grant Barnes  
Chief Regulatory Officer  
Natural Resources Access Regulator



Jim Bentley  
Deputy Secretary, Water  
Department of Planning, Industry and  
Environment

## About this document

This Pricing Proposal is a relatively concise, accessible summary of the complex range of services we, the Department of Planning, Industry and Environment—Water and the Natural Resources Access Regulator (NRAR), propose to provide on behalf of the Water Administration Ministerial Corporation (WAMC) over the period from 1 July 2021 to 30 June 2025 (the 2021 regulatory period) and what we have provided since IPART last determined our prices, starting on 1 July 2016 and lasting until the 2021 regulatory period commences (the 2016 regulatory period.) We have included what it will cost us to provide those services and the prices we propose the Independent Pricing and Regulatory Tribunal (IPART) determines for them.

Each of the department, NRAR and WaterNSW carry out water management activities under Chapter 3 of the *Water Management Act 2000* and in relation to the services listed under the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004*. We call these water management activities throughout this submission.

IPART determines the maximum prices for our activities. Our submission of this Pricing Proposal marks the start of IPART's review process where, over the next 12 months, they will review the nature of the expenditures we propose, assess whether they are prudent and efficient and decide on prices that will allow us to recover a portion of those costs from water users. IPART's process will give stakeholders opportunities to have their say during the review before IPART determines final prices to apply from 1 July 2021. We encourage stakeholders to take advantage of those opportunities.

This Pricing Proposal is supported by 11 Detailed Papers that contain in-depth information on the specific elements of our proposal. It is also supported by an Administrative Information document that sets out useful material for readers including abbreviations, some key assumptions used throughout the submission, a guide to the location of IPART's comprehensive information requirements and quality assurance statements about the information contained in the Pricing Proposal, Detailed Papers and Administrative Information document.

# 1 Context

This is a proposal for water user prices, fees and charges to recover the costs of efficient water management that reflect the services that customers, government and the broader NSW community have indicated are most important to them.

It describes how we have administered water planning, management, compliance and enforcement services since 2016 and how we propose to do so in the future. It also outlines the expenditures we expect to incur in doing this and proposes prices that will recover water users' share of the service costs from 1 July 2021 to 30 June 2025 (the 2021 regulatory period).

It balances three elements:

- how we can better meet the government's and community's expectations about how regional water resources should be managed
- improvements in transparency and accountability for our activities
- moderation of bill impacts for water users.

Much has changed since 2016, resulting in the costs of water resource management increasing in response to expectations, investigation and amended legislation. We propose that the impacts of these cost increases are transitioned to water licensees in the form of annual caps on price increases, given the economic hardship currently being experienced in regional NSW due to drought, bushfires and COVID-19.

## 2016–20: investigations, legislative changes and what we've been doing

Since 2016 when WAMC prices were last determined, there has been significant water user, community and government concern about and critical external reviews on, water resource management in NSW.

Several independent investigations into water management in NSW since 2016 found that our compliance and enforcement over our water resource management was deficient. The investigations found that arrangements then in place for management of extractions were inadequate. They also found that frequent changes in administrative structures had had detrimental effects on staff, water resource expertise and the ability to maintain management and information systems effectively.

We were criticised for:

- underperformance in developing and implementing water sharing and resource plans
- having inadequate and inefficient systems
- lack of visibility over our decision-making and expenditures
- ineffective oversight of floodplain harvesting
- under-delivery on Murray–Darling Basin commitments, and more.

We acknowledge that, the then department was not meeting stakeholder and community expectations in the way it managed water resources early in the 2016 regulatory period. As is detailed in this submission, an array of new measures has been, and continue to be, implemented in response, so that water resources are better managed. One of the independent reviewers, Ken Matthews<sup>1</sup>, found:

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<sup>1</sup> Mathews, Ken, November 2017, Independent investigation into NSW water management and compliance

- the overall standard of NSW compliance and enforcement work had been poor and funding for these activities had been too low
- arrangements for metering, monitoring and measurement of water extractions, especially in the Barwon–Darling river system, were not at the standard required for sound water management and expected by the community
- certain individual cases of alleged non-compliance had remained unresolved for far too long
- there was little transparency to members of the public of water regulation arrangements in NSW, including the compliance and enforcement arrangements which should underpin public confidence.

Mr Matthews referred to ‘serious shortcomings’, that ‘community concern about compliance shortfalls had, if anything, intensified’ in the three months between his interim and final reports and that ‘decisive action is expected, and will be widely supported’. He also noted that there was ‘strong and broad-based stakeholder support for firm and speedy action to fix the compliance and enforcement system.’<sup>2</sup>

The NSW Government responded with major reform commitments to provide greater accountability and transparency in water management activity delivery. In 2018, it passed a package of legislative amendments that reinforced NSW’s water management framework, creating the impetus to restore public confidence in our credibility, the effectiveness and fairness of water management and the government’s ability to ensure compliance. This legislative reform and more rigorous implementation of existing laws and regulations, along with our redoubled efforts in setting up and implementing a better system for managing water, underpin the significant step change in expenditures proposed in this submission for the 2021 regulatory period.

Our initial response to the feedback we received from the various investigations and the community about our past failure and to the government’s legislative changes, was to put in place a four-pronged Water Reform Action Plan.<sup>3</sup> This set out how we would:

- introduce best practice in water management
- build a compliance and enforcement regime that ensures strong and certain regulation
- ensure transparency in how we share, allocate and manage water
- build our capability to support implementation of water reforms.

We are well underway in carrying through on the actions of that plan, as illustrated by the recent independent audit of progress.<sup>4</sup>

The Natural Resources Access Regulator (NRAR), an independent body that has strong powers to oversee the compliance and enforcement of water regulation in NSW, started operations in early 2018. Tasked with rebuilding community trust in the management of water use and access, it has adopted a ‘boots on the ground’ approach to monitoring alleged illegal activity. This has already effectively re-established a compliance presence that affirms the value of water as an asset, protected from those who attempt to obtain it unlawfully.

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<sup>2</sup> Mathews, Ken, November 2017. *Independent investigation into NSW water management and compliance – Final Report*, page 2

<sup>3</sup> <https://www.industry.nsw.gov.au/water-reform>

<sup>4</sup> In 2019, the NSW Government commissioned an independent review of progress in the implementation of the Water Reform Action Plan and published the review report. Alluvium, April 2020, *Independent Review of Progress of the NSW Water Reform Action Plan and related NSW Water Reform Commitments* [https://www.industry.nsw.gov.au/data/assets/pdf\\_file/0016/307042/wrap-review-2020.pdf](https://www.industry.nsw.gov.au/data/assets/pdf_file/0016/307042/wrap-review-2020.pdf)

NRAR has built up to a current workforce of over 90 compliance staff<sup>5</sup>, many recruited over the last two years, who enable a visible compliance and enforcement presence. Along with using remote sensing, satellite imagery and drones, increased staff levels have bolstered our capability to detect breaches of water rules and enforce them. Water investigation rates have dramatically increased. The 20<sup>th</sup> prosecution commenced in May 2020, almost triple the rate of prosecution immediately before NRAR's establishment, and clearly reflecting our resolve to enforce compliance with the rules. This increased staffing level and 'boots on the ground' approach requires greater expenditures than had previously been incurred.

To lessen inadvertent non-compliance, NRAR is making information available to water users that helps them navigate the complex laws and regulations for water use and meeting with water users to explain those laws and regulations. We recognise that most water users want to comply, but the regime is complicated and, recognising that, we are putting resources towards explaining the law.

NRAR is also involved in the rollout of new metering rule reforms that will provide better accounting for and transparency over water takes, as part of the 'no meter, no pump' principle proposed by Ken Matthews.

NRAR is already effectively delivering on commitments under the Water Reform Action Plan and meeting legislative requirements. The additional resources required to do this has been significant, and much of this higher level of resourcing must be maintained.

## We are preparing and implementing 12 regional water strategies

We are preparing a series of regional water strategies for 12 regions across NSW. The strategies look to the next 20 to 40 years and determine how much water each region will need to meet future demand, the challenges and choices involved in meeting those needs, and the actions we can take to manage risks to water availability.

Water users have told us they want us to be accountable for our decisions and transparent in our decision-making, and to use strong evidence for our decisions. Implementation of these regional water strategies over the next regulatory period will do that, because as overarching documents, they will make our approach clearer to water users and the wider public and allow us to help water users while better managing the state's regional water resources. The strategies will do this by:

- bringing together several reforms that have already begun to meet the commitments made in the Water Reform Action Plan and help identify and address any outstanding gaps
- setting out the way reforms should be ordered, sequenced and integrated in each region, and describing how best to coordinate between the various inter-jurisdictional bodies, independent statutory bodies and corporations that manage water resources in NSW
- using and informing, working with or recommending changes to, other existing water management institutional structures in NSW, including the *Water Management Act 2000*, the 58 NSW water sharing plans that set rules for water sharing and water priorities and implement water extraction limits, integrated water cycle management plans prepared by local water utilities, the *Murray–Darling Basin Plan 2012* and the 20 water resource plans that implement it and several other plans and policies.

Users will benefit from the strategies through better interaction and engagement between agencies that will result in better coordination and consistency between the existing myriad water management documents and rules, and a clear long-term plan.

The regional water strategies are being developed in stages, commencing with the Greater Hunter, followed by three priority regions of Macquarie, Gwydir and Lachlan, with draft strategies for these last three to go on public exhibition in July 2020. We expect to publish drafts for the remaining

<sup>5</sup> Not all of whom are employed on water management activities that are funded through WAMC prices; further information is contained under activity W08-03 in Detailed Paper E that is part of this submission.

regional strategies by the end of 2020 and finalise all twelve strategies by December 2021. Implementation of the Greater Hunter Strategy has already commenced.

## **Evidence we will use in the strategies to guide water resource management**

The strategies will be based on the best available evidence about climate risk. They will be underpinned by new climate data and modelling that will improve our understanding of past climate conditions and plausible climate futures. The strategies will provide a more accurate picture of the frequency, duration and magnitude of extreme climate events such as droughts, which are the largest risk to our water supplies.

Our modelling integrates complex interactions between the natural (inflows, losses, evaporation, and plant water use) and human-constructed (storages, water sharing, demand and diversions) environments. The strategies will help us understand the whole waterway system and a region's water security, by looking at storage volumes and what happens depending on frequency and size of released water flows and by predicting water availability from surface and groundwater storages. They will help us and water users to understand climatic patterns by using the 130 years of data we have, adding knowledge from between 500 and 1,000 years of paleoclimatic data (tree rings, cave stalactites and stalagmites, river sediments, soil patterns and ice cores), extending that to a 10,000 year climate period using stochastic modelling, then using that historical information to predict future climate characteristics.

A panel of international experts commissioned by the NSW Chief Scientist and Engineer at the request of the Minister for Water, Property and Housing characterised this modelling as best practice and a major advance on existing practices.<sup>4</sup>

## **We are managing environmental water and floodplain harvesting better**

We have finalised the Floodplain Harvesting Action Plan for the Northern Basin Floodplain Harvesting Plan that was introduced in 2013.

Key to the plan is using the best available facts, data and scientific analysis to underpin the licensing framework, and to explain what we are doing to stakeholders. We will set clear rules, consult about the rules and make sure the rules are followed. This plan started in September 2019 and we expect to publish draft floodplain harvesting entitlements by the end of 2020, finalise them by mid-2021, and commence the licensing regime including measurement and compliance later in 2021.

We are working to increase our ability to measure and report transparently on floodplain harvesting take in near real-time. The science and modelling we have undertaken to date, which will significantly improve estimates of floodplain harvesting, has been independently acknowledged.<sup>6</sup>

A major component of our floodplain harvesting reforms has to date been funded by the federal government to bring NSW into compliance with the Murray–Darling Basin Cap. This funding will end from 30 June 2020. Further funding through WAMC prices is necessary to allow us to continue to improve the pace of work that we have instigated over recent years. And that funding should come from water users and the NSW Government on behalf of the broader community, consistent with IPART's impactor pays principle.

We are improving the way we manage environmental water in the Northern Murray–Darling Basin to maximise environmental outcome and improve water systems. We restricted floodplain harvesting in the Northern Basin in early 2020 by putting in place a series of temporary water restrictions after northern NSW experienced significant rainfall, to manage first flows and secure

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<sup>6</sup> Alluvium Consulting, Independent review of NSW floodplain harvesting policy implementation draft report for consultation by the independent reviewers Tony Weber and Greg Claydon, 8 April 2019



water for critical human needs. As a result, large inflows to Menindee Lakes and the Lower Darling occurred.

## We are on track with water resource plan development for the Basin

We have allocated considerable staff resourcing to developing 20 water resource plans that comply with the *Murray–Darling Basin Plan 2012*. This includes putting significant resources into updating and enhancing the models we use for these plans and undertaking extensive stakeholder consultation so that local issues are suitably reflected in them.

The water resource plans set local rules on how much water can be taken from the system, how much water will be made available to the environment, how water quality standards can be met and ensuring sustainable diversion limits are not exceeded over time.

In doing this, the plans set out how each region will balance their specific community, environmental, economic and cultural outcomes. Water users benefit from clear rules about how water will be used, how much water can be taken from the river, what annual limits will exist and how the river's health will be maintained and can plan their business activities accordingly. The plans give both users and Basin communities certainty and therefore greater confidence in the system, and the plans give business investors in water-dependent industries greater security.

These water resource plans were due for submission to the Murray–Darling Basin Authority by 31 December 2019; we decided to extend that date because of the drought and our decision to do more consultation and incorporate feedback into final plans. Groundwater resource plans have now been submitted to the Murray–Darling Basin Authority, albeit slightly late, and we anticipate submitting final surface water resource plans by 30 June 2020.

We acknowledge the extended period and delays in getting to this stage. Our efforts to get back on track in the current regulatory period, particularly the development of the eight water resource plans, were in part funded by the Australian Government, funding that will cease from 30 June 2020. To maintain momentum in implementing these plans and continue producing our same standard of work during the 2021 regulatory period, we will need funding greater than was included in prices by IPART back in 2016.

## Reviews and audits of water sharing plans are identifying and incorporating improvements into the plans

Water sharing plans that set out how water is to be shared between users and the environment now cover all inland surface and groundwater sources in NSW. Between 2017 and 2019, we finalised plans for the eight water sources that did not have them in place when the 2016 regulatory period started.

And, most importantly, audits and reviews of the 20 NSW water sharing plans are now occurring in a timely manner (having previously run well behind schedule.) The importance of audits and reviews is that they allow the adaptive water resource plans to be brought up to date for what is known about the relevant water resource using current data, technology and modelling capabilities, and allow us to make improvements reflecting our experience in developing plans.

The water sharing plan process involves an audit five years into the 10-year plan cycle and a review at the end of the 10 years, both conducted independently by the Natural Resources Commission, but with our input and assistance. We use the outcomes of the audits to inform the work we will do at the ten-year review.

Water users benefit from the adaptive nature of water sharing plans and the ongoing improvements we make to keep them meaningful.

Finalising the plans and our participation in the cycle of reviews and audits, as well as providing data and support to the process of improvement, has required considerable resourcing, and we will

need ongoing funding to maintain the standard of work we have achieved in the 2016 regulatory period.

## We are implementing new metering laws

We are working to implement new metering laws passed in December 2018. These will require meters to be installed that will accurately meter water taken from rivers, creeks and groundwater, so that 95% of water use will be measured accurately. This will help reduce overuse of water, increase water available to downstream users and better manage water for the environment.

In addition, we have commissioned development of a cloud-based data acquisition service to receive data from telemetry-equipped meters that will be used by the department's Water group, NRAR and WaterNSW. Telemetry will be mandatory for all surface water works 200 mm or larger. Availability of the data from this cloud service will aid us considerably in efficiencies and accuracy in targeting non-compliance.

However, greater benefits will accrue to water users over time because the new metering laws' effect is that a great many licensees will move from unmeasured to measured water takes and therefore move from a one-part tariff to a two-part tariff. One-part tariffs are simply an entitlement charge with no reference to water volumes, whereas two-part tariffs consist of a fixed entitlement charge along with a water take charge. The latter's volumetric component means it better reflects costs, sending a clearer pricing message about the cost of using water, giving users more incentive to control their take in line with what they are willing to pay (to the extent they are capped by their entitlement and allocation). Consequently, users will be able to make more informed decisions about the value of water to their business, and therefore their efficient level of water use.

Because the metering rollout will be staged between December 2020 and December 2023, those benefits will be seen progressively during the 2021 regulatory period.

Compliance benefits from this metering reform include efficiencies, as NRAR can better target its compliance efforts using data rather than relying solely on reports, and a lower risk of illegal take. Consequently, water users and the community will have greater confidence that we are managing water fairly and in accordance with water sharing plans and licence conditions.

## We are being more transparent

Our willingness to be transparent is demonstrated in the increased visibility we are giving to the public over what we are doing and how we are doing it. We are sharing information, assumptions and methodologies publicly. This is evidenced by the following examples:

- the commitments in our Floodplain Harvesting Action Plan to publish model build reports for each valley, that will be independently reviewed and will include a wide range of inputs and assumptions including rainfall information for each valley, estimates of breakout volumes where available, information about uncertainties and sensitivity testing. That plan also commits to communicate and confirm with landholders specific information that will provide greater transparency about how entitlements are calculated
- the independent review we commissioned from legal firm Maddocks of our floodplain harvesting licensing works approval process. Maddocks' report<sup>7</sup>, which we made publicly available, found that the licensing processes used were lawful, well documented and that the eligibility criteria were consistently applied
- the Great Artesian Basin Bore Inspection Reports we issued in 2019 to all individual landholders who agreed to be a part of a study

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<sup>7</sup> Maddocks, March 2019, Floodplain harvesting project – Probity advice, <https://www.industry.nsw.gov.au/water/plans-programs/healthy-floodplains-project/harvesting>



- publication of the independent audit of progress in the implementation of our Water Reform Plan<sup>8</sup>
- publication of data relating to reporting tools used in our surface water ecological condition monitoring activity that assesses the health of water sources (in activity W01-05),
- publication of water availability information comprising presentations, fact sheets and forecasts (in activity W05-01), planning documents for water sharing plans to be published on our website (in activity W06-01)
- regular publication of details of upcoming and past engagement activities along with meeting summaries, communiques (for closed meetings) or 'what we heard' documents (for public meetings or roadshows).<sup>9</sup>

## We are finding efficiencies

We are working to ensure efficient interfaces exist between the three entities that manage water resources in NSW—the Department of Planning, Industry, Environment—Water, WaterNSW and NRAR—and within each of those entities. We acknowledge that the extensive reassignment of responsibilities that occurred in 2016 after IPART determined prices for the 2016 regulatory period creates the risk of unnecessary costs, due to duplications and operational inefficiencies.

We have scrutinised our expenditures carefully and identified and removed \$9 million<sup>10</sup> a year that would otherwise have been included in expenditures for the 2021 regulatory period. These proposed expenditures are now subject to the department's internal efficiency and reform program to ensure impacts are not passed onto users.

NRAR is increasing its operational efficiency through greater use of technology such as satellite imagery and drones to better deploy field staff, and improved desk top monitoring approaches such as metering telemetry. NRAR is also progressively increasing efficiency through continuous review of and improvement to procedures and case review processes within a quality management system, and through improved staff capability and experience guided by a capability development plan. The plan is due by the end of 2020.

We are well underway to meeting the commitments set out in the Water Reform Action Plan, mandated by our legislation and expected by our stakeholders, community and the NSW Government. In the 2021 regulatory period, we will build on what we have been doing since 2017.

The various reviews early in the 2016 regulatory period concluded that additional resources were required to deliver effective compliance and enforcement arrangements in NSW. The NSW Ombudsman specifically called us out on this, saying 'evidence showed that [we] failed to adequately resource or secure funding to adequately resource [our] compliance functions'.<sup>11</sup> Our ability to undertake the water management activities delegated to us, to the standards expected by stakeholders, the community and the NSW Government is substantially reliant on resourcing. This

<sup>8</sup> In 2019, the NSW Government commissioned an independent review of progress in the implementation of the Water Reform Action Plan and published the review report. Alluvium, April 2020, *Independent Review of Progress of the NSW Water Reform Action Plan and related NSW Water Reform Commitments* [https://www.industry.nsw.gov.au/data/assets/pdf\\_file/0016/307042/wrap-review-2020.pdf](https://www.industry.nsw.gov.au/data/assets/pdf_file/0016/307042/wrap-review-2020.pdf)

<sup>9</sup> Some examples of these are available at <https://www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/drought-update/critical-water-advisory-panels>, <https://www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/drought-update/information-sessions> and <https://www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/drought-update/information-sessions/outcomes>

<sup>10</sup> All expenditures are expressed in \$2020-21 as described in the Administrative Information document that is part of this submission.

<sup>11</sup> <https://www.ombo.nsw.gov.au/news-and-publications/publications/reports/state-and-local-government/water-compliance-and-enforcement>

Pricing Proposal sets out the resourcing and consequential expenditures we need to provide good water resource management and to meet those required standards.

Our program of work, which since 2016 has already substantially increased in scope to meet legislative requirements along with stakeholder, community and government expectations, has to date been funded in part by the NSW Government. This has been to allow the expanded program of work to start quickly (particularly in setting up the Natural Resources Access Regulator). This has been necessary to provide a rapid response to the many critical reviews and start rebuilding community trust. Our expanded program included considerable work on Murray–Darling Basin frameworks and plans that were funded by the Australian Government, funding that will cease from 30 June 2020. The expanded program of work needs to be sustained, and given the benefits to water users, this should be met through WAMC prices from 2021.

We have started doing what is necessary to provide better compliance, enforcement and management of water resources and will need funding to maintain the level of activity we have in place.

## Most price increases capped to mitigate customer impacts

This Pricing Proposal is based on a commitment to best-practice water pricing as set out in the National Water Initiative, which includes recovery from water users of a share of the cost of the management of water. This follows the principle of impactor or user pays, to secure enough revenue for efficient delivery of the required services.

However, we balance this commitment against our recognition that regional communities and water entitlement holders are experiencing ongoing financial hardship due to external climatic and economic factors, quite outside their control.

We are not proposing that the significant step change increase in the efficient costs of water resource management to water users already impacted by extended drought, bushfires and the COVID-19 pandemic be passed on in full now, as that would cause bill shocks that may delay the recovery of regional economies.

While recognising that this is a decision to be made by IPART, we propose most prices increases be capped at 5% increases a year. This will result in lower recovery from water users of the significantly increased cost base that is necessary for us to deliver NSW water management services legislated through the *Water Management Act 2000*, to the standards expected by stakeholders, community and the NSW Government.

**We provide more information about investigations, legislation changes and climate and economic effects in Detailed Paper A – Context.**

## 2 Higher proposed expenditures, revenue and prices

Due to the increase in our activity as set out above—the establishment of NRAR; putting in place strategies and plans; introducing better metering; meeting expectations of our customers and the community—our forecasts of the prudent and efficient expenditure needed to provide the services required of us are significantly higher than the expenditures used by IPART when it set the prices to apply from 2016. That substantial change in our expenditures results from the significant step change improvement in the way we are managing regional water resources in NSW.

Our forecast average annual expenditure for the 2021 regulatory period is \$56.8 million,<sup>12</sup> an increase of 49% over expenditures IPART considered efficient for the 2016 regulatory period for the same set of activities, as set out in the following table.

Water management activities in NSW are also undertaken by WaterNSW, which is making a separate submission. We provide the expenditures WaterNSW will propose in their submission in the following table, for transparency.

**Table 1. Average annual expenditure in 2016 regulatory period (\$2020–21, \$000)**

Agency	2016 regulatory period (used by IPART in determining WAMC prices)	2021 regulatory period (proposed)	Change
DPIE Water*	23,044	33,938	+10,894
NRAR <sup>^</sup>	4,823	16,343	+11,520
MDBA and Border Rivers Commission (BRC)	10,154	6,472	-3,682
<b>Total this submission</b>	<b>38,021</b>	<b>56,753</b>	<b>+18,732</b>
WaterNSW	25,141	29,507	+4,366
<b>Total WAMC expenditure</b>	<b>63,162</b>	<b>86,261</b>	<b>+23,099</b>

\*DPIE—Water = The Department of Planning, Industry and Environment's Water group

<sup>^</sup>The 2016 regulatory period average annual represents IPART's forecast costs of activities split between agencies (as at July 2016). It does not represent the historical actual cost of activities delivered by agencies. For example, it does not consider the establishment and maturation of the Natural Resources Access Regulator.

Note: Activity costs that are recovered on a fee-for-service basis are not included in this table.

Our proposed expenditures in each year of the proposed 2021 regulatory period, equivalent to our required revenue, are shown in the following table.

**Table 2. WAMC revenue requirement proposed in this submission (\$2020-21, \$000)**

Agency	2016–17 to 2019-20 actual annual average	2021–22 proposed	2022–23 proposed	2023–24 proposed	2024–25 proposed	Total proposed
DPIE Water	24,086	34,921	34,916	32,976	32,939	135,753

<sup>12</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.

Agency	2016–17 to 2019-20 actual annual average	2021–22 proposed	2022–23 proposed	2023–24 proposed	2024–25 proposed	Total proposed
NRAR	19,379	16,560	16,560	16,126	16,126	65,373
MDBA and BRC	11,416	6,427	6,487	6,487	6,487	25,888
<b>Total (this submission)</b>	<b>54,881</b>	<b>57,909</b>	<b>57,963</b>	<b>55,589</b>	<b>55,552</b>	<b>227,014</b>

Note: NRAR average annual actual costs in 2016 regulatory period is the average over 2018–19 and 2019–20 to better reflect the period of time since NRAR was established in April 2018.

Activity costs that are recovered on a fee-for-service basis are not included in this table.

IPART's pricing framework recognises that a proportion of the costs of water management result from effects on the whole community. Therefore, a proportion of the costs of each activity is paid for by the NSW Government on behalf of the community. The balance, or the user share, forms the basis of calculating the water management tariffs to be charged to water licence holders.

Our full revenue requirement, or our total forecast prudent and efficient expenditure, is shared between water users and the NSW Government (on behalf of other users and the broader community) in proportions based on IPART's 'impactor pays' principles. The division between user share and government share is shown in the following table. If IPART determines to limit annual price increases as we have proposed, then the proportion of the total cost expected to be paid by users will decrease and the amount expected to be paid by government will increase.

**Table 3. User share and government share of our revenue, based on impactor pays principle (\$2020–21, \$000)**

Share	2021–22	2022–23	2023–24	2024–25	Total
Impactor pays user share	45,141	45,183	43,829	43,852	178,005
Impactor pays government share	12,767	12,780	11,760	11,701	49,008
<b>Total (this submission)</b>	<b>57,909</b>	<b>57,963</b>	<b>55,589</b>	<b>55,552</b>	<b>227,014</b>

Note: 2019–20 comparison is not included in total. 2019–20 actuals do not include DPIE–CAPEX reported in W02–02.

Note that the IPART-determined shares for 2019-20 are user share \$28,564,879 and government share \$7,998 for a DPIE, NRAR, MDBA and BRC IPART- determined total of \$36,522.

Activity costs that are recovered on a fee-for-service basis are not included in this table.

Because water management activities in NSW are also undertaken by WaterNSW, and for transparency, we provide in the following table the proposed revenue shares based on IPART's impactor pays principle. The table has been prepared to illustrate the sharing of costs, before decisions are made by IPART on price structures and customer impacts. If IPART determines to limit annual price increase, then the amount of total cost expected to be paid by users will decrease and the amount expected to be paid by government will increase.

**Table 4. User share and government share of revenue proposed by NSW water management agencies, based on impactor pays principle (\$2020–21, \$000)**

Share	2021–22	2022–23	2023–24	2024–25	Total
Impactor pays user share (this submission)	45,141	45,183	43,829	43,852	178,005
Impactor pays user share WaterNSW	24,739	26,696	28,312	29,444	109,191
<b>Total impactor pays user share</b>	<b>69,881</b>	<b>71,879</b>	<b>72,141</b>	<b>73,295</b>	<b>287,196</b>
Impactor pays government share (this submission)	12,767	12,780	11,760	11,701	49,009
Impactor pays government share WaterNSW	2,141	2,206	2,246	2,246	8,839
<b>Total impactor pays government share</b>	<b>14,908</b>	<b>14,986</b>	<b>14,006</b>	<b>13,947</b>	<b>54,848</b>
<b>Total</b>	<b>84,789</b>	<b>86,865</b>	<b>86,141</b>	<b>87,242</b>	<b>345,055</b>

Note: 1. Activity costs that are recovered on a fee-for-service basis are not included in this table.

2. If IPART's accepts the proposal to cap annual price increases the amount of total cost expected to be paid by users will decrease and the amount expected to be paid by government will increase.

IPART's 2016 WAMC price determination resulted in additional NSW Government funds being required to support a number of pricing water sources. IPART assessed in its 2016 Final Report that the price increases required to recover the prudent and efficient costs of water management during the 2016 regulatory period would result in unacceptable price increases for those specific

water sources and consequently set a price ‘glide path’ to full cost recovery over that period, or, in some cases, into subsequent regulatory periods.<sup>13</sup>

Whilst we propose a significant step change increase in expenditures from 2021 for those used by IPART to set our prices in 2016, we also propose that most price rises be limited to 5% each year, which means that users will not pay the amounts required for full cost recovery in some valleys until the following 2025 price determination period. This will mitigate otherwise large water price shocks for regional economies that are already dealing with the impacts of drought, bushfires and the COVID-19 pandemic. It is up to IPART to decide whether our proposal to cap price rises at 5% is appropriate.

## Categories of prices that will increase

We propose revised charges for three categories of WAMC’s prices:

- **water management prices**—annual prices that recover the costs of water planning and management and apply to all categories of water access licences. These prices include entitlement and water take prices, and a minimum annual charge
- **consent transaction charges**—that 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.

These charges are proposed for 26 different water sources across three water types: regulated rivers (11 valleys), unregulated rivers (12 valleys) and groundwater (three areas).

## Price structures

We propose to maintain price structures in accordance with those determined by IPART in 2016.<sup>14</sup>

We have modelled prices (using the principles set out below) to recover our target revenue requirement with fixed (entitlement) and variable (water take) charges recovering a 70:30 revenue split in all water types. The only exception to this is the North Coast regulated river, which will continue the 92:08 revenue split used by IPART in calculating tariffs in its previous WAMC price determinations.

## Principles for pricing

In our price modelling, we have continued to adopt most principles used by IPART when determining our prices in 2016, the key ones of which are:

- a single price will apply for each water source, which covers the combined expenditures of the department’s Water group, NRAR and WaterNSW (although the prices we propose in this Pricing Proposal and in the Detailed Papers that also form part of this submission are based only on the expenditures of the department and NRAR)

<sup>13</sup> IPART, 2016, Review of prices for the Water Administration Ministerial Corporation – Final Report, p20

<sup>14</sup> Water Administration Ministerial Corporation, Maximum prices for water management services from 1 July 2016, June 2016 available at <https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/Prices-for-WAMCs-water-management-services?qDh=2>

- a four-year regulatory period, balancing a period of price stability for water access licence holders and other considerations, including the level of confidence in our forecasts and the risk of structural changes in the industry
- the activities described are WAMC monopoly services as previously decided by IPART<sup>15</sup>
- the principles of the National Water Initiative are applied
- IPART's 'impactor pays' pricing principles are applied
- the ratio of fixed to variable water management charges determined by IPART in 2016 remains the same,
- use of W-codes for activities, albeit with some minor modifications,
- only prudent and efficient expenditures to undertake water management activities are included
- contributions from the Australian Government and other sources are offset against related expenditures
- a glide path to full cost recovery is appropriate (although we propose setting a cap on price increases at 5% per year for the 2021 regulatory period)
- fee-for-service charges (consents transaction charges and meter reading and service charges) continue to be established on a cost-recovery basis and are not capped.

We propose some changes, though, including that:

- the user share of the costs of delivering each activity will continue to be based on IPART-determined cost shares; however, we have applied the new proportions IPART determined in 2019<sup>16</sup>
- new cost drivers are applied, particularly in relation to the allocation of costs associated with NRAR, to better reflect how costs are actually incurred
- increases in prices are capped at 5% per year.

**We provide more information about the principles we have used in preparing our expenditures, revenue and prices in Detailed Paper D – Principles.**

## Pricing scenarios for cost recovery

To ensure price increases are set at affordable levels over the short term to support the recovery of regional economies, we are proposing that all WAMC prices (excluding fee-for-service and meter charges) rise by 5% each year.

By capping price rises to a maximum of 5% a year, we ensure that WAMC bills would rise by no more than 22% over the four-year price path (with constant annual water usage).

However, some valleys would see WAMC bill increases of less than 22%. This is because they are already at, or close to, full cost recovery of the users' share and prices in these valleys would need to rise by less than 5% a year to recover the costs that are allocated to them. Valleys at, or close to, full cost recovery prices will be identified during IPART's pricing review and IPART will determine their prices for the 2021 regulatory period.

Full cost recovery prices would see prices in some valleys rise by over 100% over the 2021 regulatory period.

<sup>15</sup> IPART, Review of Prices for the Water Administration Ministerial Corporation - Final Report, February 2011, Appendix – L

<sup>16</sup> IPART's report is available at <https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/Rural-Water-Cost-Shares>



## Proposed prices

We propose that most prices increase by 5% per year.

Our calculations for our proposed prices use the IPART-supplied tariff calculation model, which allocates the user share of the total revenue requirement by charge type and billing valley. The total user share revenue requirement is allocated across the pricing valleys and water sources based on cost drivers described in the brief section later in this document that sets out the principles we have used, and in full in Detailed Paper D – Principles.

We have not provided a list of every tariff in this Pricing Proposal because the lists are lengthy. However, as an example, the water management entitlement and usage prices for regulated rivers for the first and last year of the 2021 regulatory period are shown in Table 5. The full lists of prices we propose water users pay in the 2021 regulatory period, along with prices that have already been determined by IPART for 2019–20 and 2020–21, are provided in full in Detailed Paper I – Tariffs by water source, which is part of this submission.

The following table shows prices in real dollars for the year in which they will be incurred by the user.

**Table 5. Samples of proposed tariffs by water source—regulated rivers entitlement and usage (\$2020-21)**

	Entitlement Charge			Usage Charge		
	Current 2020-21	2021-22	2024-25	Current 2020-21	2021-22	2024-25
Border	2.28	2.39	2.77	1.78	1.87	2.16
Gwydir	1.62	1.70	1.97	1.40	1.47	1.70
Namoi	2.73	2.87	3.32	1.84	1.93	2.24
Peel	2.67	2.80	3.25	4.76	5.00	5.79
Lachlan	1.43	1.50	1.74	1.92	2.02	2.33
Macquarie	1.71	1.80	2.08	1.85	1.94	2.25
Murray	1.54	1.62	1.87	1.10	1.16	1.34
Murrumbidgee	1.41	1.48	1.71	0.94	0.99	1.14
North Coast	3.97	4.17	4.83	6.12	6.43	7.44
Hunter	3.12	3.28	3.79	2.14	2.25	2.60
South Coast	3.34	3.51	4.06	5.32	5.59	6.47

The minimum annual charges paid by the majority of water users across NSW are shown in the following table.



**Table 6. Proposed minimum annual charge, number of customers and revenue (\$2020-21)**

	2020-21	2021-22	2022-23	2023-24	2024-25
MAC	\$213.74	\$224.43	\$235.65	\$247.43	\$259.81
Number of customers	24,389	24,389	24,389	24,389	24,389
% customers paying the MAC	64%	64%	64%	64%	64%
MAC Revenue	\$5 212 978	\$5 473 627	\$5 747 308	\$6 034 674	\$6 336 407
% total revenue	12%	12%	12%	13%	13%

**We provide more information about these tariffs and how they were derived in Detailed Papers H and I.**

### 3 What our stakeholders want

During the 2016 regulatory period, we have conducted wide-ranging consultation with stakeholders, including customers (water licence holders and users), traditional landowners, and many other stakeholders and interested parties. We have implemented a Community Engagement Policy, established Stakeholder Advisory Panels, published an Engagement Register on our website and introduced an engagement software system that helps plan, monitor and record engagement activities.

With the assistance of an independent consultant, Kathy Jones and Associates (KJA), we undertook a review of the extensive consultation and engagement activities that we have undertaken over the last four years to better understand expectations for water management activities. Four themes were identified in this review across the more than 1,300 engagement activities we had carried out over four years. These themes, and key priorities identified by stakeholders under each theme, are:

- **clear and transparent enforcement of the water management framework** to ensure consistency and compliance. Customers indicated strong support for a robust compliance and enforcement regime. More engagement and transparency, as well as adequate resourcing, particularly in relation to the number of compliance officers, were identified as customer priorities in this area
- **monitoring that customers can trust across programs and water sources.** This includes suggested improvements to current technology as well as reporting requirements. Feedback from customers was that this would allow for fair and consistent rule-enforcement, based on accurate information. Customers also want accurate and reliable data to provide them with certainty and to inform decisions about how to manage their water entitlements
- **improved accountability for water management decisions** through greater transparency and strong evidence. Customers requested more technical reports and scientific analysis to provide evidence to support the department's decisions and proposals, as well as to inform customer feedback on these
- **improving the information available to customers** to provide certainty, help better inform their decisions, their feedback to the department on specific issues and their understanding of the water management system.

A March 2020 survey by NRAR sought feedback from nine Customer Advisory Groups about the importance of NRAR's compliance, customer management and water consent activities, finding

that around three-quarters of the respondents rated its activities as either important or very important.

Given the depth of consultation activities undertaken over the regulatory period, the breadth of engagement activities being undertaken in the first quarter of 2020 in relation to drought, regional water strategies, metering, floodplain harvesting and water resource plans, and then the emergence of COVID-19, we have not undertaken further consultation specifically on draft prices. Rather, this proposal has been prepared, in large part, as a response to the expectations of stakeholders, external reviewers and legislators, expressed consistently over the regulatory period.

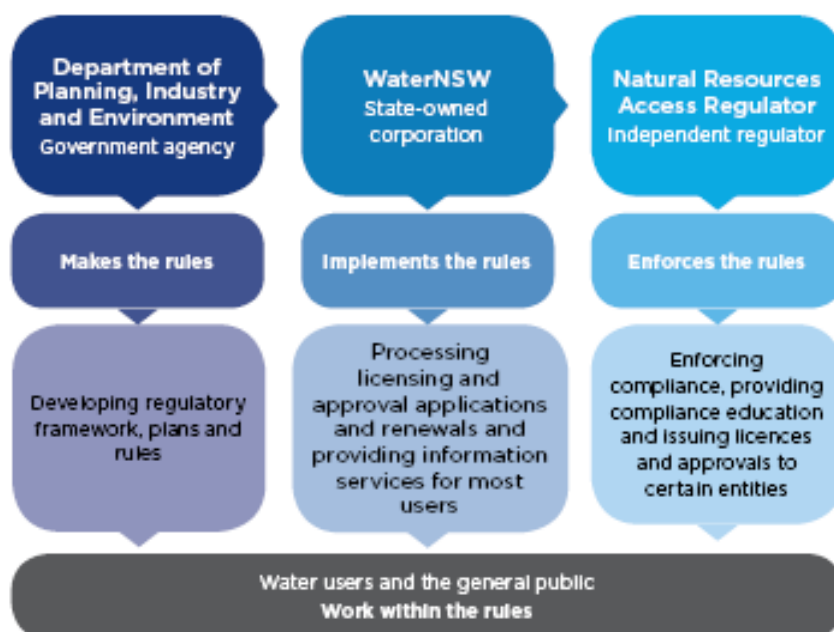
**We provide more information about this in Detailed Paper B – What our stakeholders have told us and how we have responded.**

## 4 Who we are and what we do

This is a joint submission by the Department of Planning, Industry and Environment—Water and NRAR on behalf of WAMC for the water management activities we undertake. IPART sets the maximum prices we can charge for these WAMC monopoly services.

WaterNSW, which also carries out water management activities conferred on it, will make a separate submission.

Since IPART last determined WAMC prices in 2016, an extensive reassignment of water management roles and responsibilities between NSW water agencies has occurred. The way water management activities are now carried out by each of the three agencies is set out in the following figure.



**Figure 1. NSW Government agencies engaging with water users and communities on licensing and compliance**

The department's Water group is responsible for planning, policy development and establishing the regulatory frameworks for regional and metropolitan water in NSW and setting mandatory licensing

conditions resulting from water-sharing plans. It is responsible for some transactions under Chapter 4 of the *Water Management Act 2000*.

The Natural Resources Access Regulator (NRAR) is responsible for the compliance and enforcement actions of the regulatory framework for water, including management rules and conditions in licences and approvals. NRAR has delegated responsibility to administer licence and approval transactions for certain entities, including government agencies, irrigation corporations and mining. NRAR is also responsible for transactions related to chapter 4, part 1 Irrigation Corporations in the *Water Management Act 2000*.

WaterNSW supplies the state's bulk water needs, operates the state's river systems and provides services to customers for licensing and approvals not issued by NRAR, water allocation trades, water licence trades and water resource information. WaterNSW has retained some enforcement powers under the *Water Management Act 2000* necessary for billing and revenue protection purposes.

**We provide more information about this in Detailed Paper C Who we are and what we do that is part of this submission.**

## 5 Services and expenditures by activity

We propose revenues in the 2021 regulatory period of \$56.8 million on average per year. This is to implement the government's priorities to restore public and users' confidence in water management and implement measures to provide accountability and transparency in service delivery. These revenues are derived from our prudent and efficient expenditures on the water management activities that have been delegated to us.

Water management responsibilities that are funded through WAMC prices are costed to 10 activity groups, which are subdivided into 33 activities. This activity structure was put in place at the start of the 2016 WAMC pricing review, and with minor modifications is proposed for the 2021 regulatory period.

The department's Water group costs, forecasts, records and reports on 16 WAMC water management activity codes across six activity groups and NRAR does the same for two WAMC activity codes across two groups.

WaterNSW uses the same activity code structure, and its separate submission will set out proposed expenditures on the water management activities it undertakes.

### Our expenditures

This submission covers both DPIE Water and NRAR. This section discusses the expenditures of each organisation.

The department's activities account for \$135.8 million of the proposed revenue for the 2021 regulatory period, an average annual expenditure of \$33.9 million. This is an increase of 41% over our actual average annual expenditure in the 2016 regulatory period of \$24.1 million. In determining prices for the 2016 regulatory period, IPART used an average annual expenditure of \$23.0 million.

The key drivers of cost increases in the department's activities that have emerged during the 2016 regulatory period and hence are not reflected in current prices include:

- management of environmental water and floodplain harvesting more effectively
- review, change and implementation of water sharing plans and water resource plans including improving our knowledge base to ensure critical water management decisions are

based on accurate and timely evidence, and management decisions and frameworks can be evaluated as required by law

- implementation of the regional water strategies to deliver secure, reliable and resilient water sources to support existing regional economies and growth in regional NSW and deliver environmental and Aboriginal outcomes over the next 20 years, based on the best available climate evidence.

The compliance activities delivered by NRAR account for \$65.4 million of the proposed expenditures for the 2021–2025 regulatory period, an average annual expenditure of \$16.3 million. This is 3.4 times the average annual amount IPART considered to be efficient in 2016, but 10% less than the average annual spend for the two full years since NRAR’s establishment.

NRAR’s compliance activities will restore community confidence and address major compliance and enforcement issues identified in a number of independent investigations and reviews during the 2016 regulatory period.

NRAR’s ‘boots on the ground’ compliance enforcement activities are a key part of its expanded and improved approach to ensuring NSW has accountable, transparent and effective compliance and enforcement that maintains public confidence in water laws. This improved approach is designed to provide greater certainty about lawful access to available water for productive activity, improved guidance to help people voluntarily comply with water laws, protection of water users’ property rights and improved compliance, which will improve public confidence in the water management framework in NSW.

Our total operating cost for water management at an activity-group level for each pricing water source, and the annual actual expenditure at an activity level compared with the amounts IPART used in setting prices in 2016, are shown in the following table. The table also includes expenditures for monitoring, the Murray-Darling Basin Authority (MDBA) and the Border Rivers Commission (BRC) that are proposed to be included our revenue; further detail on these are provided later in this document, and the expenditures are provided in this table so that we provide a full build-up of our proposed revenue based on all expenditures.

**Table 7. Proposed expenditures by activity (\$2020–21, \$000)**

Activity	Average annual used by IPART in 2016	Average annual actual in 2016 regulatory period <sup>^</sup>	2021 regulatory period					
			2016–17 to 2020–21	2021–22	2022–23	2023–24	2024–25	total
W01-05 surface water ecological monitoring	295	271	314	314	314	281	1,222	305
W04-01 surface water modelling	3,363	2,591	3,558	3,558	3,558	3,558	14,231	3,558
W04-02 groundwater modelling	815	841	1,071	1,071	1,071	1,071	4,283	1,071

Activity	Average annual used by IPART in 2016	Average annual actual in 2016 regulatory period^	2021 regulatory period					
W04-03 water resource accounting	465	725	602	602	602	602	2,409	602
W05-01 systems operation & water availability charge	2,707	2,865	2,755	2,755	2,755	2,755	11,021	2,755
W05-03 environmental water management	1,044	469	1,129	1,129	1,129	1,129	4,515	1,129
W05-04 water plan performance and assessment evaluation	2,633	962	3,661	3,661	3,661	3,661	14,646	3,661
W06-01 water plan development (coastal)	1,653	1,259	1,752	1,752	1,752	1,752	7,009	1,752
W06-02 water plan development (inland)	2,925	3,579	2,976	2,976	2,976	2,976	11,905	2,976
W06-03 floodplain management plan development	46	68	2,172	2,172	1,547	1,469	7,360	1,840
W06-04 drainage management plan development	33	1	543	542	542	542	2,169	542

Activity	Average annual used by IPART in 2016	Average annual actual in 2016 regulatory period <sup>^</sup>	2021 regulatory period					
W06-05 regional planning management strategies	2,056	2,189	6,614	6,614	5,292	5,292	23,811	5,953
W06-06 development of water planning and regulatory framework	2,427	1,710	2,278	2,278	2,278	2,278	9,113	2,278
W06-07 cross border and national commitments	931	1,640	1,981	1,971	1,971	2,037	7,961	1,990
W07-01 water management works	994	1,058	2,872	2,878	2,884	2,891	11,525	2,881
W08-02 consents management & licence conversion	0	821	643	643	643	643	2,574	643
W08-03 compliance management*	4,539	16,732	15,975	15,975	15,541	15,541	63,031	15,758
W10-01 customer management	284	1,950	585	585	585	585	2,342	585
MDBA	9,748	10,887	5,668	5,727	5,727	5,727	22,849	5,712
BRC	405	529	760	760	760	760	3,038	760
Total	37,362	51,145	57,909	57,963	55,590	55,553	227,013	56,754

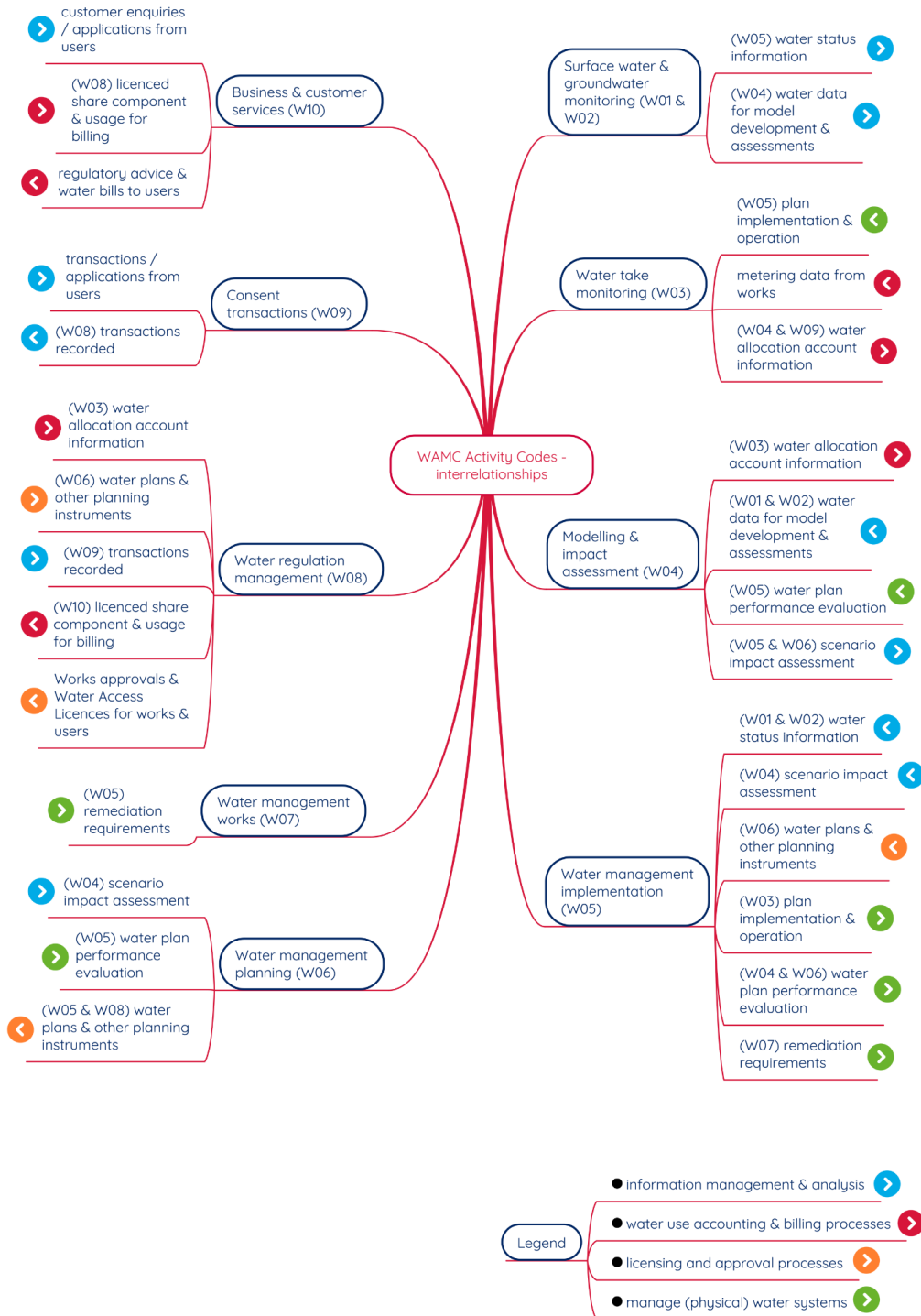
Note: The 2016 regulatory period average annual represents IPART's forecast costs of activities split between agencies (as at July 2016). It does not represent the historical actual cost of activities delivered by agencies. For example, it does not consider the establishment and maturation of the Natural Resources Access Regulator.

<sup>^</sup> excluding expenditures funded by external funding

\* NRAR average annual actual costs in 2016 regulatory period is calculated as the average over 2018–19 and 2019–20 to better reflect the period of time since NRAR was established in April 2018.

Activities that are charged on a fee-for-service basis are not included in this table (for example, water consent transactions W09-01)

The inter-relationship of the WAMC monopoly service activity codes to each other and their role in delivering water management activities are shown in the following figure.



**Figure 2. Inter-relationship of WAMC’s monopoly service water management activity codes**

Details of planned future services for the activities and their associated expenditures are outlined below. The details provided include strategies involved in delivering the future activity, changes



from the existing service provided, the proposed future service level and its appropriateness and why the future water planning and management activity is required.

## Surface water ecological condition monitoring W01-05

This activity is undertaken by the department and comprises 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 (RCI) for rivers, floodplains and wetlands.

It is a critical part of our ability to make evidence-based decisions. Our proposal provides enough resources to further develop, populate and publicly share a group of essential reporting tools.

Through our customer engagement over the 2016 regulatory period, we have heard that customers want monitoring they can trust, and that improved accountability for and transparency about water management decisions is a priority. The water quality and quantity monitoring we do in W01-05 provides robust data that we use to make well-informed decisions. We make the information and methodology we use publicly available. We propose some changes to improve what we do, to better meet these customer priorities.

Our proposed expenditure includes an initial small increase to achieve specific expansions in service, comprising incorporation of water quality data into the RCI and preparing new information to be included in the coastal High Ecological Value Aquatic System work, and specific consideration of how surface water ecological condition monitoring data could be used in the review of the Barwon–Darling water sharing plan. Once those improvements are done, we will revert to what we expect will be the resourcing we need.

We propose to maintain expenditures in line with actuals across the past four years, spending a total of \$1.2 million<sup>17</sup> in the 2021 regulatory period on this activity, as set out in the following table.

**Table 8. Expenditure on surface water ecological condition W01-05 (\$2020–21, \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	
IPART 2016 determination	302	297	293	288	284					
Actual DPIE Water operating expenditure	319	239	287	237						
Proposed DPIE Water operating expenditure						314	314	314	281	281

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs

<sup>17</sup> All expenditures are expressed in \$2020–21 as described in the Administrative Information document that is part of this submission.



are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Surface water modelling W04-01

This activity is undertaken by the department and comprises 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.

In the 2016 regulatory period we have developed and continue to maintain and use our computer-based models to simulate the behaviour of many river systems in NSW. Using our sophisticated models, we can simulate river behaviours such as flow routing in tributaries, rivers, effluents, and channels, irrigation demand and water use, urban water supply and other consumptive uses, water quality and groundwater/surface water interaction.

In the 2021 regulatory period we will be increasing our sustainable diversion limit (SDL) compliance modelling, after commencement of the water resource plans, which will include the newly created floodplain harvesting diversions. We will be implementing our floodplain harvesting monitoring strategy and as it, is supplemented with satellite imagery of crop areas and data, models will need to be revised and reviewed where results change materially.

The internal quality assurance, and stringent review and update processes will instil confidence in our models and facilitate a greater level of model sharing to a wider range of authorised users. Our collaborative undertakings allow other users to develop their own insights into river system response to internal and external drivers. This is an important component of our commitment to stakeholders for greater transparency and accountability.

Stakeholders have asked for improved accountability for water management systems and information available to customers. Customers expect more reporting, more information and improved timeliness of information being provided.

We propose to spend a total of \$14.2 million<sup>18</sup> or \$3.6 million on average annually in the 2021 regulatory period, an increase of only 6% over the amount IPART found to be prudent and efficient for this activity in 2016. We have spent a total of \$10.4 million or \$2.6 million on average annually in the four years so far of the 2016 regulatory period, 23% less than IPART's prudent and efficient amount for the same period. In the 2016 regulatory period, we have also received \$2.6 million in externally funded operating expenditure and \$5.1 million in capex that has benefited this activity. This is set out in Table 9.

**Table 9. Expenditure on groundwater modelling W04-01 (\$2020–21, \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25
IPART 2016 determination	3,259	3,508	3,406	3,279	3,080					

<sup>18</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
Actual DPIE Water operating expenditure	3,680	2,726	1,967	1,991						
Actual externally funded operating expenditure	219	885	855	685						
Actual externally funded capex	886	780	1,557	1,907						
Proposed DPIE Water operating expenditure						3,558	3,558	3,558	3,558	3,558

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Groundwater modelling W04-02

This activity is undertaken by the department and comprises development, upgrade, update and use of groundwater resource management models for water sharing and management applications while providing resource impact and balance assessments.

This is an increasingly important focus for us, given model refinements driven by community expectations for increased rigour of modelling outputs and by recalibrations needed to reflect climate changes. Additionally, increased demand for groundwater resources during the recent drought conditions demonstrates the importance of understanding the capacity of groundwater resources to aid the climate resilience of towns, agriculture and other industries.

The focus of our work over the 2016 regulatory period was on the Murray–Darling Basin models to support water resource plan development. Other recent work has focused on updating and maintaining models and creating tools that enabled rapid interrogation of model results. Use of the Pawsey supercomputer in the 2021 regulatory period will allow us to perform future uncertainty analysis on many key inputs to increase certainty about the models and provide efficiency gains and increased ability to fulfil modelling requests.

Demand for information from our modelling capability and for continuous improvement has increased over the last six years, and is expected to expand in the foreseeable future, especially as greater awareness about climate change and the impact of devastating drought occurs. Regular prioritisation of this work is necessary to meet the increasing demand with the available resources. The experience from historic service has highlighted that at current resourcing levels only the highest priority models can be attended to. We propose significantly greater expenditure in the 2021 regulatory period, to allow better integration of groundwater modelling outputs with our policy, planning and resource management activities.

To balance this, we have taken steps to develop a modelling strategy and to champion a modelling and monitoring hub to prioritise and attain maximum efficiency within NSW Government modelling, and to maximise the benefits of this additional investment.

Stakeholders have asked for more information about water management that is accurate and easy to access. This has driven model refinements and increased rigour of modelling outputs.

During the 2016 regulatory period, we have spent almost precisely what IPART found to be prudent and efficient when setting our prices in 2016; however, in order to service increased demand and keep our modelling up to date, in the 2021 regulatory period we propose an increase of around one-third over the current period's spend, as set out in the following table.

**Table 10. Expenditure on groundwater modelling W04-02 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	
IPART 2016 determination	834	820	808	797	791					
Actual DPIE Water operating expenditure	896	1,054	737	676						
Actual externally funded operating expenditure	-	-	251	120						
Proposed DPIE Water operating expenditure						1,071	1,071	1,071	1,071	1,071

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Water resource accounting W04-03

This activity is undertaken by the department and comprises 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.

We provide transparency and access to detailed annual information of water resource availability, changes to these water resources, and the management of the resources under water sharing plan rules. We consolidate water information from a wide range of sources to provide consistent and validated information to drive the water planning, policy and statutory reporting requirements of the state.

The validated information sets form the basis for all our water resource accounting-based statutory reporting requirements. Given the complexity and diversity of accounting rules and water information within NSW and the evolving environmental water activities, it is imperative that our reporting output is efficient, high-quality and consistent.

In the 2016 regulatory period, we have produced nine 'General Purpose Water Accounting Reports' annually over the 2016 regulatory period, covering the eleven Murray–Darling Basin regulated water sources of NSW. We have included a suite of data analysis products and modelled water balances for eight major groundwater alluvial water sources. We have given the public access to more data and information and developed numerous reports and dashboards that deliver what our stakeholders say they need. In the 2021 regulatory period, we will continue to deliver the high-quality reports we have developed, which provide the required data and information at an appropriate service level.

We propose to spend a total of \$2.4 million in the 2021 regulatory period on this activity, or an annual amount of \$0.6 million. Average annual expenditure in the 2016 regulatory period is \$0.7 million compared with the \$0.5 million IPART considered prudent and efficient when it set our prices in 2016.

**Table 11. Expenditure on water resource accounting W04-03 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	2025–26
IPART 2016 determination	474	469	463	453	450					
Actual DPIE Water operating expenditure	985	549	621	745						
Proposed DPIE Water operating expenditure						602	602	602	602	602

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Systems operation and water availability management W05-01

This activity is undertaken by the department and comprises 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.

We monitor water availability conditions and forecasts and make Available Water Determinations (AWD), then use this information to credit bulk and private water users' accounts.

We are responsible for implementing water management plans and ensuring users comply with those plans.

The drought has required us to increase our work on how remaining supplies are managed. We signal worsening conditions and identify increased drought measures to prioritise water for critical needs, including making and implementing temporary water restriction orders. The drought has also required increased levels of consultation across agencies on drought management and with water users and communities on both actions being undertaken and the need for water users to develop contingency arrangements.

In the 2021 regulatory period, we plan to introduce greater sophistication in AWD analyses, and we will engage with water users to better provide useful information to meet their changing information needs.

We propose to complete development of and start an implementation program for water sharing plans under Section 51 of the *Water Management Act 2000*. This is to provide rigour, transparency and accountability across water sharing plan implementation activities conducted by each of the Department of Planning, Industry and Environment—Water, WaterNSW and NRAR.

We propose to spend a total of \$11.0 million in the 2021 regulatory period on this activity, or annually \$2.8 million, which is the same as the amount IPART decided was prudent and efficient when determining our prices in 2016. Average annual expenditure in the 2016 regulatory period is \$2.9 million.

**Table 12. Expenditure on systems operation and water availability management W05-01 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period					
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25	
IPART 2016 determination	2,774	2,725	2,684	2,646	2,729						
Actual DPIE Water operating expenditure	3,150	3,303	2,346	2,662							
Actual externally funded operating expenditure	139	272	467	424							
Proposed DPIE Water operating expenditure						2,755	2,755	2,755	2,755	2,755	

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Environmental water management W05-03

This activity is undertaken by the department and comprises development and collaborative governance of environmental flow strategies and assessments; and the use of environmental water to achieve environmental outcomes.

Throughout the 2021 regulatory period, we will continue to implement the significant environmental work program that commenced following Ken Matthews' Independent Investigation into NSW Water Management and Compliance in 2017, focusing on better management of environmental water in the northern NSW Murray–Darling Basin. The critical nature of this work has been reinforced by the Independent Assessment of the 2018–19 fish deaths in the lower Darling (March 2019) led by Professor Robert Vertessy and the 2019 Natural Resources Commission review of the Water Sharing Plan for the Barwon–Darling Unregulated and Alluvial Water Sources 2012. Both these reviews highlighted the need to protect low flows and improve connectivity in the northern Basin for the environment and downstream water users.

We will continue to improve the structural governance of environmental water management in NSW, which will deliver a more effective and coordinated effort across government agencies managing water in NSW.

We propose to spend a total of \$4.5 million in the 2021 regulatory period on this activity, or \$1.1 million annually, which is 8% more than the amount IPART decided in 2016 was prudent and efficient. Average annual expenditure in the 2016 regulatory period is \$0.5 million. An additional \$4.6 million in funding from the Australian Government in 2018–19 and 2019–20 (funding that will cease from 30 June 2020) was spent on tasks related to this activity during the 2016 regulatory period.

**Table 13. Expenditure on environmental water management W05-03 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	2025–26
IPART 2016 determination	1,068	1,051	1,036	1,020	1,009					
Actual DPIE Water operating expenditure	775	820	107	176						
Actual externally funded operating expenditure	-	-	2,636	1,990						
Proposed DPIE Water operating expenditure						1,129	1,129	1,129	1,129	1,129

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs

are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Water plan management W05-04

This activity is undertaken by the department and comprises assessment, audit and evaluation of water management plan appropriateness, efficiency and effectiveness in achieving environmental, social and economic objectives.

Knowledge acquisition, knowledge update, environmental condition assessments and changes to environmental conditions (used to inform the update and development of plans or the understanding of plans) underpin this activity. It is fundamental to our evaluation reporting commitments, providing a robust evidence base particularly in times of water scarcity, and helping us identify what we can learn from implementation of water management plans.

We are forecasting a considerable increase in expenditure relative to historical expenditures, because we need to invest in a formalised socio-economic monitoring program, increase the number of evaluation reports produced, and complete risk assessments for coastal water sharing plans.

In the 2021 regulatory period, we will continue the work we have been doing between 2016 and 2020, namely undertaking research and technical assessments, reviewing and improving performance indicators and preparing risk assessments as a component of plan evaluation. We have spent less in the 2016 regulatory period than the amount used by IPART in setting prices in its 2016 determination, because staff resources have been diverted to Basin Plan activities, which have been funded by the Australian Government. This redeployment meant that some services were sacrificed, evaluation reports were delayed and fewer reports were produced than targeted over the current period. We propose that more resources will be required for W05-04 from 2021, because we must increase the number of evaluations we produce. We also propose to set up a formalised socio-economic monitoring program, increase the number of evaluation reports produced and complete risk assessments for coastal water sharing plans and update risk assessments for inland water sharing plans.

We propose to spend a total of \$14.6 million<sup>19</sup> in the 2021 regulatory period on this activity, or \$3.7 million annually. In the 2016 regulatory period, we spent \$3.8 million from 2016 to 2020, with the addition of \$14.8 million externally funded expenditure, bringing total expenditure to \$18.6 million. When setting our prices in 2016, IPART decided that a spend of \$10.5 million on this activity over four years would be prudent and efficient, or \$2.6 million average annual.

**Table 14. Expenditure on water plan management W05-04 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25
IPART 2016 determination	2,719	2,662	2,604	2,546	2,646					

<sup>19</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.



Expenditure	2016 regulatory period				Extension	2021 regulatory period				
Actual DPIE Water operating expenditure	1,630	733	675	810						
Actual externally funded operating expenditure	4,296	5,848	2,888	1,751						
Proposed DPIE Water operating expenditure						3,661	3,661	3,661	3,661	3,661

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Coastal water plan development W06-01

This activity is undertaken by the department and comprises 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.

Delivering water plans is fundamental to our obligations under the *Water Management Act 2000* and the Murray–Darling Basin Agreement. All coastal water sharing plans have been in place since prior to the start of the 2016 regulatory period, so our work in this activity since 2016 has been on audits, reviews, remakes of the plans, adapting them for up-to-date data, technology and modelling capabilities, and improving them based on our better understanding of what is useful and what works in the plans.

The proposed expenditure reflects our expectation that it will be 'business as usual' from now on, as plans continue to require reviewing, amending, replacing and extending the coastal water sharing plans. These plans are the key tool for users, stakeholders and us to understand how water is to be shared across NSW, and our efforts in the 2021 regulatory period will focus on keeping them relevant and informative. We have resourced the program to ensure we can deliver the plans to schedule. We have also developed process improvements that deliver better mid-term reporting and resolve outstanding issues as they arise.

We propose to spend a total of \$7.0 million in the 2021 regulatory period on this activity, or \$1.8 million on average annually. Average annual expenditure in the 2016 regulatory period is \$1.3 million, or three quarters of the \$1.8 million average annual amount IPART considered to be prudent and efficient when setting our prices in 2016.

**Table 15. Expenditure on coastal water plan development W06-01 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	



Expenditure	2016 regulatory period				Extension	2021 regulatory period				
IPART 2016 determination	1,653	1,653	1,653	1,653	1,653					
Actual DPIE Water operating expenditure	2,015	698	647	1,675						
Proposed DPIE Water operating expenditure						1,752	1,752	1,752	1,752	1,752

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Inland water plan development W06-02

This activity is undertaken by the department and comprises development, review, amendment, and extension or replacement of water management plans; the development of additional planning instruments to comply with the *Water Act 2007 (Commonwealth)*, and the consultation activities associated with developing these plans for the inland water sources.

We propose to spend a total of \$11.9 million in the 2021 regulatory period on this activity. Over the four years from 2016 to 2020, we have spent \$14.3 million on this activity, along with a further \$27.9 million in external funding, totalling \$42.2 million, on water plans. That very substantial expenditure has resulted in water sharing plans now being in place across all NSW regional water sources, and water resource plans either lodged with the MDBA or about to be lodged. Having water sharing plans in place is particularly important because it allows for audits and reviews of the plans to occur, allowing them to be adapted and brought up-to-date for what is known about the relevant water resource using current data, technology and modelling capabilities, and for improvements to be made to them based on our better understanding of what is useful and what works in the plans.

Our proposed expenditure is still substantial, but less than our expenditure in the current period. Water sharing plans are the key tool for users, stakeholders and us to understand how water is to be shared across NSW, and our efforts in the 2021 regulatory period will focus on auditing, reviewing and remaking them to keep them relevant and informative. We have resourced the program to ensure we can deliver the plans to schedule. We have also developed process improvements that deliver better mid-term reporting and resolve outstanding issues as they arise.

**Table 16. Expenditure on inland water plan management W06-02 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25
IPART 2016 determination	2,925	2,925	2,925	2,925	2,925					

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
Actual DPIE Water operating expenditure	3,486	4,380	3,539	2,912						
Actual externally funded operating expenditure	7,936	4,667	7,323	7,942						
Proposed DPIE Water operating expenditure						2,976	2,976	2,976	2,976	2,976

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

The proposed expenditure reflects our expectation that it will be 'business as usual' from now on, as plans continue to require reviewing, amending, replacing and extending. We do not propose to increase our full-time equivalent staff requirements. Review and remaking of water sharing plans will continue during the 2021 regulatory period as an ongoing activity.

### Floodplain management plan development W06-03

This activity is undertaken by the department and comprises development, review, amendment and extension or replacement of Floodplain Management Plans in collaboration with the former Office of Environment and Heritage (OEH), now known as the Environment, Energy and Science group within the Department of Planning, Industry and Environment.

Over the next price path, we will need to deliver the required flood modelling work to support floodplain management plan development.

Floodplain Management Plans (FMPs) establish a framework for the coordinating of flood works within designated floodplains, whether such works be for flood management or other purposes, such as water storage, that impact on the flow of water across the floodplain. They are part of the transition of water management from the provisions of the *Water Act 1912* to the provisions of the *Water Management Act 2000*. Critically, the FPMs and associated designation of a floodplain underpin the ability of the state to implement floodplain harvesting entitlements, which are the mechanism for managing water take and growth in water take from floodplains.

Six new FMPs for five northern inland valleys have been developed and will have commenced within the current price path. These FMPs result in the designation of six rural floodplains in the northern Murray Darling Basin, with FMPs for Gwydir, Barwon Darling and upper Namoi commenced, and FMPs for the Lower Namoi, Border Rivers and Macquarie catchments nearing completion.

Previous approaches to floodplain management have been piecemeal. Incomplete information has prevented us from effectively linking floodplain management to improved river and healthy

floodplains outcomes. Implementation of valley-wide, *Water Management Act 2000*-compliant FMPs addresses this issue. Differences between the new and old FMPs reflect:

- better and more integrated information about floodplain characteristics, flood flows and structures within the floodplain
- the more specific requirements of the *Water Management Act 2000*
- the impact of structures within the floodplain on safety, property, environmental and cultural outcomes
- more specific requirements of the *Water Management Act 2000*.

In setting WAMC prices in 2016, IPART allowed \$0.2 million for this activity across the four years from 2016 to 2020. To accelerate our program, we spent \$0.4 million across those 4 years, and an additional \$10.7 million in external funding on developing floodplain management plans. This was essential to underpin work currently underway to determine entitlements for floodplain harvesting licences within the Northern Basin by June 2021.

We propose to spend a total of \$7.4 million in the 2021 regulatory period on this activity. This amount allows FMPs to be developed for the Lachlan, Murrumbidgee and the Murray catchments, with commencement of these plans-anticipated to be completed within 4 years.

We agree with IPART's decision<sup>20</sup> that the user share for this activity should be zero, because this activity deals with legacy issues and resolving them will have significant benefits for both the NSW Government and regional economies.

**Table 17. Expenditure on floodplain management plan development W06-03 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	
IPART 2016 determination	85	34	34	33	33					
Actual DPIE Water operating expenditure	102	-	90	79						
Actual externally funded operating expenditure	2,452	3,385	2,243	2,631						
Proposed DPIE Water operating expenditure						2,172	2,172	1,547	1,469	1,469

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and

<sup>20</sup> IPART, 2019, Rural Water Cost Shares, p72

NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Drainage plan development W06-04

This activity is undertaken by the department and comprises development, review, amendment, and extension or replacement of Drainage Management Plans, to address water quality problems associated with drainage systems.

In this activity we are preparing a drainage management framework to cut red tape and deliver improvements in estuarine health. Without improvements to drainage management, water quality in estuaries will continue to decline and the productivity of land will decrease, which will have economic, social and cultural impacts on regional and rural communities.

During the 2016 regulatory period, we have started developing a drainage management framework that will meet our defined objectives. The framework is being developed in conjunction with other key departmental divisions and the NSW Department of Primary Industries—Fisheries. It will cover each of the seven catchments identified as priority catchments for action under the Marine Estate Management Strategy 2018–28.<sup>21</sup>

From 2020–21 to 2024–25, we propose to finalise that framework and deliver up to seven plans for priority areas that will improve the management of coastal floodplain drainage impacts. Seven plans will be developed if catchment-level planning is necessary and drainage management plans under the *Water Management Act 2000* considered the best tool to deliver those improvements. If not, one plan with rules that apply across all seven catchments—and possibly other coastal catchments—will be developed, or another more appropriate tool or set of tools used to achieve the outcomes.

We propose to spend a total of \$2.2 million in the 2021 regulatory period on this activity, which is substantially higher than the \$132,000 IPART considered to be prudent and efficient in 2016.

We agree with IPART's decision<sup>22</sup> that the user share for this activity should be zero because this activity deals with legacy issues and resolving them will have significant benefits for both the NSW Government and regional economies.

**Table 18. Expenditure on drainage plan development W06-04 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	
IPART 2016 determination	34	33	33	32	32					
Actual DPIE Water operating expenditure	-	-	2	-						

<sup>21</sup> Further information is available at [https://www.marine.nsw.gov.au/data/assets/pdf\\_file/0007/815596/Marine-Estate-Management-Strategy-2018-2028.pdf](https://www.marine.nsw.gov.au/data/assets/pdf_file/0007/815596/Marine-Estate-Management-Strategy-2018-2028.pdf)

<sup>22</sup> IPART, 2019, Rural Water Cost Shares, p73

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
Actual externally funded operating expenditure	-	-	100	125						
Proposed DPIE Water operating expenditure						543	542	542	542	542

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Regional planning and management strategies W06-05

This activity is undertaken by the department and comprises the development, coordination, implementation, evaluation and review of state, regional and metropolitan strategies, providing full coverage across the state, and the associated stakeholder engagement. Throughout our submission, we refer to this activity as the Water Strategy Program.

The Water Strategy Program is a planning framework that will set the strategic direction for water resource management and the water sector in NSW. It includes a new State Water Strategy, regional water strategies and metropolitan water strategies.

The Premier<sup>23</sup>, ICAC<sup>24</sup>, the NSW Productivity Commission<sup>25</sup> and the NSW Auditor General<sup>26</sup> have all indicated that they require the department to have in place a strategic planning framework for water resource management in NSW.

The Water Strategy Program meets these requirements. The State Water Strategy is being developed to set out a vision that reflects the objects of the *Water Management Act 2000* and the over-arching strategic outcomes, priorities and targets for the management of the NSW's water sources, and associated organisations that have a role in water management. Twelve regional water strategies, the Greater Sydney Water Strategy and the Lower Hunter Water Security Plan will underpin the State Water Strategy.

The suite of strategies in the Water Strategy Program will guide how NSW water agencies meet water management obligations and priorities, and ensure they are delivered in the most coordinated, effective and efficient ways over a 20 to 40 year horizon. The strategies will also provide the strategic framework for managing future droughts, and a monitoring and evaluation framework to track performance of water utilities and government in delivering these strategies.

<sup>23</sup> DPIE Portfolio priorities.

<sup>24</sup> Draft Corruption Prevention Submissions, ICAC, Operation Avon. Recommendation 1: *The NSW Government sets out its water strategy, objectives and priorities for the use and management of NSW's water resources in a manner consistent with the priorities of the Water Management Act 2000,*

<sup>25</sup> Kickstarting the productivity conversation, NSW Productivity Commission, October 2019

<sup>26</sup> Auditor General Regional Town Water Audit. Criteria 3(a) There are defined *objectives for strategic planning, with aligned priorities at a local, regional and state-wide level.* 3(b) *There are clear plans to engage local stakeholders on town water infrastructure issues when developing state and regional water strategies.*

When IPART last determined our prices, the regional water strategies program was in its infancy. In 2018, the NSW Government expanded the objectives of the strategies, which resulted in a more complex development process and more comprehensive engagement. This has led to higher costs of delivering water management services under this WAMC activity code. We will require significant increases in revenue from water prices, in combination with supplementary funding from external sources to complete delivery and implementation of the strategies.

We propose to spend a total of \$23.8 million in the 2021 regulatory period on this activity, an annual average of \$6.0 million.

During 2016–2020 we have spent \$8.8 million, or \$2.2 million on average each year (6% higher than the amount IPART decided was prudent and efficient in 2016). The expanded regional water strategies program has received additional external funding, with \$5.7 million expenditure reported over the current period from a range of NSW funding sources.

The proposed total expenditure over the 2021 regulatory period will be a 172% increase compared to the total expenditure so far during the 2016 regulatory period.

**Table 19. Expenditure on regional planning and management strategies W06-05 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	2025–26
IPART 2016 determination	2,313	2,454	2,187	1,269	1,269					
Actual DPIE Water operating expenditure	2,755	1,400	2,168	2,432						
Actual externally funded operating expenditure	-	-	1,612	4,079						
Proposed DPIE Water operating expenditure*						6,614	6,614	5,292	5,292	5,292

\* Lower Hunter Water Plan costs are charged to DPIE by Hunter Water on a fee-for-service basis and so have not been included in actuals or proposed costs as they are net zero \$

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Development of water planning and regulatory framework W06-06

This activity is undertaken by the department and comprises development of the operational and regulatory requirements and rules for water access.

The expenditure proposed for this activity will support a significant reform program over 2021 regulatory period, particularly to respond to new risks being realised through the current drought and the need for significant statutory and policy responses. Detailed analysis and long-term strategic planning within other WAMC activity codes is identifying risks and opportunities to substantially increase the long-term resilience of NSW's water sources. Statutory and policy reform will be key activities in being able to realise these improvements.

In the context of the current drought, we are fast-tracking a number of these initiatives under Water Supply (Critical Needs) reforms, to respond to immediate risks to key regional town water supplies, including at Orange, Bathurst and Tamworth.

Other initiatives will extend across the 2021 regulatory period, including:

- Regional Water Strategies within activity W06-05, which will identify risks and solutions to address drought and improve water resilience in regional NSW
- an Aboriginal Water Strategy, which we will co-design in partnership with key Aboriginal bodies, to improve access to water for Aboriginal nations.

Most of these initiatives are also critical outside the drought context to build longer term resilience to respond to other pressures, such as growing populations and industry needs across major metropolitan and regional centres.

Updated modelling and other analysis being undertaken through other activities is providing a much clearer understanding of the risks and options to respond to these. We expect that a number of these responses will require planning and regulatory framework reforms.

A key component of this activity is the wide consultation we undertake as part of developing regulatory frameworks and instruments to ensure that, as far as possible, what we develop is fit for purpose and meets key stakeholder and/or community needs.

Under-resourcing of this area in the past has meant that it has not been possible to proactively drive these types of reforms. We have now resourced this activity adequately and developed expertise amongst our staff so that their experience enables them to more proactively drive reform. A reduction in capacity and capability at this stage would jeopardise our ability to respond effectively to risks and effectively improve the water management framework. We would continue to respond to the 'squeaky wheel' and miss more important opportunities to drive reform that delivers benefits to users and the community.

We propose to spend a total of \$9.1 million<sup>27</sup> in the 2021 regulatory period on this activity. Our proposed average annual expenditure is \$2.3 million, which is 6% less than the average annual amount IPART used to determine our prices in 2016 (and assessed by IPART then as being prudent and efficient). We have spent \$6.4 million on this activity between 2016–17 and 2019–20 (an average of \$1.6 million annually) and have used a further \$9.9 million in that period from federal funding.

**Table 20. Expenditure on development of water planning and regulatory framework W06-06 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25

<sup>27</sup> All expenditures are expressed in \$2020-21 as described in the Administrative Information document that is part of this submission.



Expenditure	2016 regulatory period				Extension	2021 regulatory period				
IPART 2016 determination	2,458	2,453	2,416	2,380	2,344					
Actual DPIE Water operating expenditure	2,839	1,762	759	1,042	2,839					
Actual externally funded operating expenditure	822	1,794	1,628	5,667	822					
Actual NRAR operating expenditure	-	107	178	-						
Proposed DPIE Water operating expenditure						2,278	2,278	2,278	2,278	2,278

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Cross border and national commitments W06-07

This activity is undertaken by the department and comprises development of interstate water sharing arrangements and the implementation of operational programs to meet national and interstate commitments.

The activity ensures that NSW access to water is protected and not eroded through activities conducted and managed in other jurisdictions. A complex task that seeks to protect the starting volume of water that can be shared by licence holders across much of NSW, it requires us to negotiate with Queensland, Victoria, South Australia, ACT and the Australian governments about the rules governing NSW users' access to surface and groundwater across our shared boundaries.

External stakeholders have made clear that they are often unsure of roles and responsibilities for managing Murray–Darling Basin water resources. They are concerned about the lack of engagement with the high-level committees and transparency in decision making. The public debate around Basin management has become heated, fuelled by the complexity of decision-making, misinformation, uncertainty and drought. NSW cannot act alone in water management. We are working with our interjurisdictional colleagues to improve transparency and implement recommendations to improve governance and transparency.

We propose to spend a total of \$8.0 million<sup>28</sup> in the 2021 regulatory period on this activity, or \$2 million on average annually. In the four years from 2016 to 2020, we have spent \$6.6 million, 76% more than the amount IPART found to be prudent and efficient when setting our prices in 2016. Our proposal for the 2021 regulatory period is over twice IPART's prudent and efficient amount for 2016 to 2020.

**Table 21. Expenditure on cross border and national commitments W06-07 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	2025–26
IPART 2016 determination	900	886	873	1,066	1,055					
Actual DPIE Water operating expenditure	1,468	1,421	1,528	2,092						
Actual externally funded operating expenditure	-	-	40	64						
Proposed DPIE Water operating expenditure						1,981	1,971	1,971	2,037	2,037

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Water management works W07-01

This activity is undertaken by the department and comprises undertaking water management works to reduce the effects arising from water use or to remediate water courses.

In this activity, we reduce erosion and salinity effects, and restore riverbank stability. Erosion effects are addressed by restoring river frontage through structural erosion controls, such as log and rock revetment, fencing to exclude stock and protect revegetation, and assistance with off-stream stock watering and planting of local native species. Salinity effects on surface water are mitigated by the operation of salt interception schemes.

<sup>28</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.

Throughout the 2016 regulatory period, we have delivered significant river works that assist in maintaining channel capacity and stabilising riverbanks. We have commissioned asset management systems<sup>29</sup> and undertaken trials in salinity interception schemes<sup>30</sup>.

During the 2021 regulatory period, we aim to deliver projects to meet our obligations under the *Basin Salinity Management 2030*<sup>31</sup> strategy.

We propose a substantial increase in the amount we spend in the 2021 regulatory period to maintain the level of activity in salinity management that we have undertaken during the 2016 regulatory period. We propose to spend a total of \$11.5 million,<sup>32</sup> an average annual amount of \$2.9 million, in the 2021 regulatory period. That is slightly lower than the amount of \$11.6 million that has been spent on this activity in the four years from 2016 to 2020 (\$4.2 million spent by the department and \$7.4 million in external funding.) In 2016, IPART found that an average annual amount of \$1.0 million would be prudent and efficient; we have actually spent \$1.1 million on average per year during that period, with additional Commonwealth funding also used for tasks relating to this activity.

**Table 22. Expenditure on water management works W07-01 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	2025–26
IPART 2016 determination	1,017	1,001	986	972	965					
Actual DPIE Water operating expenditure	1,028	1,165	992	1,047						
Actual externally funded operating expenditure	-	-	2,253	5,151						
Proposed DPIE Water operating expenditure						2,872	2,878	2,884	2,891	2,891

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019–20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

<sup>29</sup> <https://essolutions.com.au/projects/river-murray-works-unit/>

<sup>30</sup> Basin salinity management 2030, Summary report 2017–18 – 2018-19,

<https://www.mdba.gov.au/publications/mdba-reports/basin-salinity-management-2030>

<sup>31</sup> Further information is available at <https://www.mdba.gov.au/publications/mdba-reports/basin-salinity-management-2030>

<sup>32</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.

## Consents management and licence conversion W08-02

This activity is undertaken by both the Department of Planning, Industry and Environment—Water and WaterNSW and comprises transcribing of water sharing provisions, as plans are remade or amended, into licence conditions and the conversion of licences under the *Water Act 2012* to licences under the *Water Management Act 2000*.

WaterNSW will set out its service standards and expenditures for this activity in its own separate submission.

We expect to substantially finalise conversion of licences that are held under the *Water Act 1912* to Water Access Licences under the *Water Management Act 2000* by 30 June 2021. This is because the water sharing plans that set out allocation rules and conditions that are then incorporated into licences in the water source covered by each plan, are now in place. As a consequence, while the task of licence conversion has been a substantial driver of expenditure over the 2016 regulatory period, little expenditure for this task is forecast for the 2021 regulatory period.

The main body of work for consents management during the 2021 regulatory period involves transcribing water sharing provisions into licence conditions and then maintaining those conditions on licences in response to ongoing changes made to water management plans. This is an ongoing body of work as each of the 20 water sharing plans are reviewed every ten years. Water sharing plans are also updated more frequently than their once-a-decade review; they're designed to be adaptive, so that they can be brought up to date for what is known about the relevant water source using available data, technology and modelling capabilities and incorporating what we have learnt about better plans. It is critical that these changes are transcribed into licences for compliance regime, communication and market confidence reasons. Accurate records of entitlements and security interests that have been granted provide water users and the wider public with confidence in the stability of the licence regime, and also for water to be traded as required under the National Water Initiative.

Consents management and licence conversion has been a shared responsibility between the department and WaterNSW since late 2019, when we took on parts of this activity.

We are aware of the risks of duplicative costs and are working to ensure efficient interfaces exist between the water entities. We have commenced a joint working group with WaterNSW to review work processes. We will identify opportunities to improve services and timeliness and reduce costs. We anticipate that the outcomes of that internal review will be available by the end of 2020.

IPART found that expenditure of \$1.2 million<sup>33</sup> annually on average was prudent and efficient when it determined WAMC prices in 2016 and allocated all of that to WaterNSW. For most of the 2016 regulatory period, we were not responsible for delivering this activity, incurring relatively small expenditures for the first three years because most tasks were undertaken by WaterNSW. Since we have now assumed responsibility for parts of this activity, we propose recovering our costs during the 2021 regulatory period. We propose expenditures of \$0.6 million per year.

WaterNSW will also seek recovery of its costs for its parts of this activity during the 2021 regulatory period. For transparency, we also show the costs that WaterNSW will propose in its separate submission, along with the expenditure IPART found to be prudent and efficient in 2016 and allocated to WaterNSW.

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<sup>33</sup> All expenditures are expressed in \$2020-21, as described in the Administrative Information document that is part of this submission.  
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**Table 23. Expenditure on consents management and licence conversion W08-02 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020-21	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2021-22	2022–23	2023–24	2024–25	
IPART 2016 determination DPIE Water <sup>^</sup>	-	-	-	-	-					
Actual DPIE Water operating expenditure	302	1	0	259						
Actual NRAR operating expenditure	-	-	112	147						
Proposed DPIE Water operating expenditure						643	643	643	643	643
<i>IPART's 2016 final report allocated to NSW provided for transparency<sup>^</sup></i>	1,279	1,260	1,241	1,222	1,204					
<i>Proposed WaterNSW operating expenditure provided for transparency<sup>*</sup></i>						747	766	768	742	753

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

<sup>^</sup> The expenditure IPART found to be prudent and efficient in 2016 was allocated to WaterNSW

<sup>\*</sup>WNSW forecast expenditure for W08-02 was provided to DPIE-Water by WNSW

## Compliance management W08-03

This activity is undertaken by the Natural Resources Access Regulator (NRAR) and comprises on-ground and remote monitoring activities (including investigations and taking statutory actions) to ensure compliance with legislation, including licence and approval conditions.

NRAR, an independent body that has strong powers to oversee compliance with and enforcement of water regulation in NSW, started operations in early 2018. Tasked with rebuilding trust in the community around water use and access, it has adopted an out and about 'boots on the ground'

approach to monitoring alleged illegal activity that already has effectively re-established a compliance presence that affirms the value of water as an asset, protected from those who attempt to obtain it unlawfully.

NRAR has built up to a current workforce of 94 compliance staff, many recruited over the last two years, who enable a visible compliance and enforcement presence. Along with using remote sensing, satellite imagery and drones, increased staff levels have bolstered our capability to detect breaches of water rule and enforce the rules. Water investigation rates have dramatically increased. The 20th prosecution commenced in May 2020, almost triple the rate of prosecution immediately prior to NRAR's establishment, and clearly reflecting our resolve to enforce compliance with the rules. The staffing levels required by NRAR's 'boots on the ground' approach to compliance and enforcement, necessarily brings additional costs.

To lessen inadvertent non-compliance, we are making available to water users material that helps them navigate the complex laws and regulations around water use, and meeting with water users to explain those laws and regulations. We recognise that most water users want to comply, but the regime is complex.

We are also involved in the roll out of new metering rule reforms that will provide better accounting for and transparency of water take, as part of the 'no meter, no pump' principle proposed in Ken Matthews' Independent Investigation into NSW Water Management and Compliance.<sup>34</sup>

We are already effectively delivering on commitments under the Water Reform Action Plan and meeting legislative requirements.

We are committed to transparency and publish our progress and outcomes via Annual Progress Reports.

NRAR did not exist at the time of the NSW Department of Primary Industry—Water's submission to IPART for WAMC prices in 2016. The significant increase in funding for NRAR above that sought in 2016 for compliance management comes from a greatly increased scope of activities, because of deficiencies in the way compliance had been undertaken and resulting community concern, that was pointed out in a number of investigations that took place during the 2016 regulatory period (more details of which are provided in Detailed Paper A that is part of this submission).

Our workload has been increasing annually since we started operations, and is forecast to increase further over the 2021 regulatory period as a result of high public expectations expressed through reporting of alleged breaches to NRAR, government reforms to the water management framework, and our commitment to increased levels of monitoring and audit. We will manage this increasing workload with the same resources that we have in 2019–20, demonstrating a considerable efficiency over the price determination period.

NRAR will achieve these efficiencies through:

- progressively adopting a proactive, intelligence-led approach that drives voluntary compliance, and which is underpinned by strong enforcement where necessary for serious and deliberate breaches of the law
- continuously reviewing and improving procedure within a structured quality management system
- increasing staff capabilities and addressing capability gaps by implementing a capability development plan
- by trialling and increasingly using new technologies such as satellite imagery, drones and telemetered metering data to deploy staff and to design efficient compliance response campaigns.

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<sup>34</sup> Matthews, K 2017, Independent Investigation into NSW Water Management and Compliance. [https://www.industry.nsw.gov.au/data/assets/pdf\\_file/0016/120193/Matthews-interim-report-nsw-water.pdf](https://www.industry.nsw.gov.au/data/assets/pdf_file/0016/120193/Matthews-interim-report-nsw-water.pdf)

NRAR is focused on being a best-practice, modern regulator that delivers compliance management in an effective, efficient, transparent, and accountable manner. It will drive voluntary compliance through progressively sophisticated, intelligence-led audit, monitoring, communication and education programs that ensure the regulated community is aware of and understands how to comply with the law and appreciates the benefits of a well-regulated water management framework.

This approach will be underpinned by a continued enforcement presence that provides a deterrence through penalties for serious and deliberate non-compliance.

Public confidence will be earned through a more visible on-ground presence and broader stakeholder engagement and communications.

We propose a total of \$63.0 million<sup>35</sup> or \$15.8 million in average annual expenditure during the 2021 regulatory period, compared with the actual annual average spend in 2018–19 and 2019–20 (the two full years of the 2016 regulatory period since NRAR was established) of \$16.3 million. IPART found in 2016 that an annual average expenditure of \$4.5 million for this activity would be prudent and efficient; the need for more than triple this amount to undertake this activity in the future is set out in greater detail in Detailed Paper E that is part of this submission.

**Table 24. Expenditure on compliance management W08-03 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
	2016–17	2017–18	2018–19	2019–20		2020–21	2021–22	2022–23	2023–24	2024–25
IPART 2016 determination	4,542	4,554	4,565	4,496	4,429					
Actual DPIE Water operating expenditure	335	1,421	115	44						
Actual NRAR operating expenditure	-	1,189	13,969	18,537						
Actual externally funded operating expenditure	-	-	49	-						
Proposed NRAR operating expenditure						15,975	15,975	15,541	15,541	15,541

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and

<sup>35</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.



NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Customer management W10-01

This activity is undertaken by NRAR and WaterNSW and comprises 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.

WaterNSW will set out its service standards and expenditures for this activity in its own separate submission.

NRAR's survey of stakeholders undertaken in early 2020 showed 70% of respondents identified NRAR's customer management activity as either 'very important' or 'important'. And in our review of stakeholder engagement over the 2016 regulatory period, the feedback received shows that customers expect a higher level of service from activities such as this one, and lists some specific work that could be undertaken to do so, including becoming better customer managers, the need for additional compliance officers to monitor compliance, more transparency in regard to monitoring activities undertaken and work to address feedback from the community and users about pricing and the perception of the work the NRAR undertakes.

We propose considerably lower expenditure in the 2021 regulatory period from that actually spent in the 2016 regulatory period and also that used by IPART when setting WAMC prices in 2016 because, reflecting our compliance management approach to meeting our operational objectives, we will include the costs of several full-time employees in W08-03 compliance management that had previously been accounted for under W10-01 customer management. During the 2016 regulatory period we have continued to account for these resources under W10-01 to be consistent with IPART's 2016 final report.

We propose to spend a total of \$2.3 million<sup>36</sup> or \$0.6 million in average annual expenditure during the 2021 regulatory period, compared with the actual annual average spend in 2018–19 and 2019–20 (the two full years of the 2016 regulatory period since NRAR was established) of \$1.9 million IPART found in 2016 that an annual average expenditure of \$1.9 million for this activity would be prudent and efficient.

**Table 25. Expenditure on customer management W10-01 (\$2020–21 \$000)**

Expenditure	2016 regulatory period				Extension 2020–21	2021 regulatory period				2025–26
	2016–17	2017–18	2018–19	2019–20		2021–22	2022–23	2023–24	2024–25	
IPART 2016 determination <sup>^</sup>	1,937	1,908	1,880	1,851	1,824					
Actual NRAR expenditure	-	377	1,753	2,023	1,819					

<sup>36</sup> All expenditures are in \$2020-21 as described in the Administrative Information document that is part of this submission.

Expenditure	2016 regulatory period				Extension	2021 regulatory period				
Actual DPIE Water operating expenditure	246	-	-	-	-					
Proposed NRAR operating expenditure						585	585	585	585	585

^ Reallocation of revenue from WaterNSW to NRAR in W10-01 (15%) occurred when NRAR was established in 2018 (total annual average W10-01 in IPART's 2016 final report is \$1,894)

Notes: IPART's 2020–21 figure has been provided by IPART; actual operating expenditure is net of externally funded operating expenditure; DPIE Water's 2019–20 actual costs are 12/10 x actual costs for the 10 months to April 2020 and NRAR's 2019-20 actual costs are 12/11 x actual costs to May 2020; 2020–21 actual costs are unknown; 2025–26 costs are provided as required by IPART; please also refer to the Administrative Information document that is part of this submission.

## Output measures

IPART's 2016 Final Report on WAMC's maximum prices included a set of output measures against which we reported in each year of the 2016 regulatory period. Reports of our achievements against these measures can be found on IPART's website.<sup>37</sup>

The output measures relate to a range of activities including surface water and groundwater quantity and quality monitoring, floodplain management plan development and compliance, customer and billing management.

We propose to maintain most of these output measures to ensure continuity in the time series of outputs and outcomes of the water management activities undertaken within WAMC activity codes. We have modified a small number of measures to more accurately reflect the current status of some projects and programs and to continue to strive to achieve stretch targets in our service delivery.

**We provide more information about our services and expenditures for the Department of Planning, Industry and Environment and for NRAR in the 2016 regulatory period and proposed services and expenditures in the 2021 regulatory period in Detailed Paper E – services and expenditure by activity. Detailed Paper E also includes a consolidated list of our proposed output measures for the 2021 regulatory period.**

<sup>37</sup> Available at <https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Rural-Water/Prices-for-WAMCs-water-management-services/29-Mar-2018-WAMC-Output-Measures-for-2016-17/Report-WAMC-Output-Measures-for-2016-17>

## 6 Proposed Murray–Darling Basin Authority and Border Rivers Commission costs

### Murray–Darling Basin Authority

As a signatory to the Murray-Darling Basin Agreement, NSW is committed to contributing a share of the funding required for the Murray-Darling Basin’s Joint Program activities. The Basin Plan itself is wholly funded by the Australian Government, but the Joint Program, which consists of natural resource management of the environmental consequences of water use in the Basin, along with construction and management of joint assets (dams, weirs and locks) and managing the river for irrigation, town and industrial uses, is funded in agreed shares by the states.

The department’s contribution is for Joint Program natural resource management activities, which are broken into functions of:

- the Living Murray Program, restoring health of the River Murray system
- environmental monitoring and evaluation
- basin salinity management
- water resource modelling
- metrological assessment
- water markets and inter-state trades
- Indigenous engagement in the Basin.

The scope and expenditures for the MDBA’s Joint Program of works is agreed by the states. The NSW governance process for this agreement, which is made annually, culminates in approval by the Minister for Water, Property and Housing, following scrutiny, review and endorsement by the department’s officials and staff. This gives NSW oversight, through the department, and the means to address issues of efficiency in the scope and cost of work to be undertaken within the Joint Programs.

We recover part of NSW’s contribution to the water resource management component of the Joint Program from water users through prices determined by IPART. The amount we recover relates to protection of NSW interests—economically and environmentally—and the integration of the Joint Program with the NSW policy and legislative framework. User shares and the distribution of costs across the relevant valleys are modelled in line with IPART endorsed cost-drivers and user shares.

In its 2016 final report, IPART accepted that the MDBA Joint Program activities were water management services that were government monopoly services as defined in the IPART (Water Services) Order 2004 and therefore allowed the Department of Primary Industries—Water to recover a share of the costs of the water management activities funded through the MDBA Joint Program from water users<sup>38</sup>.

The following table sets out the contributions to the Murray–Darling Basin Authority Joint Programs that we propose to include in our forecast water management prices.

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<sup>38</sup> IPART, 2016, Review of prices for the Water Administration Ministerial Corporation – Final Report, p38

**Table 26. Murray–Darling Basin Authority Joint Programs expenditure contributions**

	2016-17 to 2019-20	2021-22	2022-23	2023-24	2024-25	2021-22 to 2024-25*	Change
	Average Annual	Proposed	Proposed	Proposed	Proposed	Average Annual	Average Annual
Total NSW MDBA contribution	31,265	30,954	33,126	33,126	33,126	32,583	+4%
WAMC contribution	10,380	5,668	5,727	5,727	5,727	5,712	–45%
User share of WAMC contribution	5,750	4,005	4,047	4,047	4,047	4,036	–30%

We will provide further operating and financial information to IPART in confidence to support these expenditures.

## Border Rivers Commission

We share equally with the Queensland Government the costs of the Border Rivers Commission, which exists to control and coordinate water available from the rivers around the border of the two states by:

- maintaining surface and groundwater monitoring systems
- determining the anticipated quantity of water available from the system and notifying each states of the amount of water they may divert and use
- controlling construction, operation and maintenance of works
- reporting and make recommendations to governments of NSW and Queensland about water sharing matters.

The following table sets out our share of the costs of the Border Rivers Commission.

**Table 27. Border Rivers Commission expenditure contributions**

	2016–17 to 2019–20	2021–22	2022–23	2023–24	2024–25	2021–22 to 2024–25	Increase
	Average Annual	Proposed	Proposed	Proposed	Proposed	Average Annual	Average Annual
Total NSW BRC Contribution	1,241	1,801	1,801	1,801	1,801	1,801	+45%
WAMC Contribution	485	760	760	760	760	760	+57%

	2016–17 to 2019–20	2021–22	2022–23	2023–24	2024–25	2021–22 to 2024–25	Increase
User share of WAMC	331	718	718	718	718	718	+117%

We provide more information about the services and expenditures of MDBC and BRC in the 2016 regulatory period and proposed services and expenditures in the 2021 regulatory period in Detailed Paper F – Murray-Darling Basin Authority and Border Rivers Commission.

## 7 Notional Revenue Requirement

We have calculated our Notional Revenue Requirement as the sum of:

- an allowance for operating expenditure for each of the activities in which the department's Water group and NRAR provide services
- allowances for contributions to the MDBA (\$5.7 million average annual) and the BRC (\$0.8 million average annual).

Expenditures are initially forecast for the whole state as most water management activities are performed by the department and NRAR on a state-wide basis, and subsequently allocated to pricing water sources (a combination of water type and location) using a primary cost driver for each water management activity to derive costs by sources and then prices for each of those sources.

We describe our principles for allocating our costs between the community and users and, subsequently, between users, earlier in this Pricing Proposal and in Detailed paper D that is part of this submission. This section provides information on the total costs only.

### Operating expenditure

The following table shows the operating costs proposed by the department and NRAR to deliver water management activities during the 2021 regulatory period.

The forecast revenue requirement for the 2021 regulatory period is approximately 31% more than that last determined by IPART in 2016 (for the same subset of WAMC services). In 2016, based on the information then available to IPART, a 2019–20 operating expenditure allowance of around \$59.3 million.

**Table 28. Total operating expenditure: the department and NRAR (\$2020–21 '000)**

Expenditure	2021–22	2022–23	2023–24	2024–25	Average Annual
DPIE	34,921	34,916	32,976	32,939	33,938
NRAR	16,560	16,560	16,126	16,126	16,343
MDBA/BRC	6,427	6,487	6,487	6,487	6,472

Does not include revenue from water consent transactions that are fee-for service activities undertaken by NRAR

## Capital expenditure and regulatory asset base

Under the transfer of functions from our predecessor NSW Department of Primary Industries to WaterNSW in 2016, the WAMC asset base was transferred to WaterNSW. Ownership of the capex we have incurred during the 2016 regulatory period has also been transferred to WaterNSW. We are not forecasting user-funded, WAMC-related capital expenditure over the 2021 regulatory period.

We have not included allowances for a return of assets (regulatory depreciation), tax obligations, a return on working capital or an allowance for a return on the regulatory asset base. In our revenue requirement.

We refer the reader to the separate WaterNSW WAMC submission for detailed discussion on the WAMC asset base and the calculation of capital-related revenue requirement.

**We provide more information about the transfer of the asset base and our capital related expenses in Detailed Paper G – Notional revenue requirement.**

## 8 Licences and volumes

The calculation of prices for the water management charge in each pricing water sources is underpinned by three demand forecast components:

- quantity of licensed share component for licences that are subject to an annual entitlement charge
- volume of water take for all licences that are subject to a water take charge
- number of licences that are subject to a minimum annual charge.

Methodologies to forecast water take to calculate prices are limited by data availability challenges. Complete water take data is available for most regulated water sources, but there are somewhat less complete datasets for groundwater sources and even less complete dataset for unregulated water sources.

We engaged a consultant, the Centre for International Economics (CIE), to identify and analyse methods to help forecast water take given those dataset challenges. The purpose was to provide a set of robust estimates that can be used as inputs to price modelling. In its approach, the CIE considered:

- historical levels of usage by two-part tariff customers across charge areas and licences categories
- the split of entitlement between two-part and one-part tariffs, including the impact of the NSW non-urban water metering framework.<sup>39</sup>

Usage by one-part tariff customers has not been estimated, since no data is available to indicate their usage and one-part tariff usage is not required for tariff modelling.

The review considered the split of entitlement between two-part and one-part tariffs and geographically. It also considered the effect of the government's metering policy on the volume of measured usage and the number of water users on one- and two-part tariffs.

The CIE report is included in full as Detailed Paper H – Licences and volumes.<sup>40</sup>

<sup>39</sup> NSW Government 2018, *NSW non-urban water metering framework*, which is available at <https://www.industry.nsw.gov.au/water-reform/metering-framework>

<sup>40</sup> The Centre for International Economics 2020, *Forecasting water take, Prepared for Department of Industry—Water*, 18 June 2020

## Entitlement volumes

We assume that total entitlements for regulated water sources remain constant over the forecast period at their 2018–19 level; these are shown in the following table. This is because changes in entitlement associated with cancellations or similar factors cause only slight changes in entitlement volumes and are difficult to predict.

For our unregulated and groundwater customers we have incorporated the introduction of the government's metering policy as outlined in the section below.

**Table 29. Total regulated entitlement volumes (ML) (2018-19)**

Charge valley	Regulated		Unregulated		Groundwater	
	2-part	1-part	2-part	1-part	2-part	
Border	265,334	26,119	15,530	n/a	n/a	
Gwydir	535,601	34,350	18,556	n/a	n/a	
Namoi	264,329	138,332	23,262	n/a	n/a	
Peel	46,826	15,634	2,320	n/a	n/a	
Lachlan	686,431	46,246	9,064	n/a	n/a	
Macquarie	671,271	209,676	86,829	n/a	n/a	
Far West	n/a	87,936	144,539	n/a	n/a	
Murray	2,337,493	24,572	27,609	n/a	n/a	
Murrumbidgee	2,698,407	68,238	29,111	n/a	n/a	
North Coast	9,261	162,801	112,042	n/a	n/a	
Hunter	206,219	161,591	513,581	n/a	n/a	
South Coast	14,869	98,313	1,158,822	n/a	n/a	
Inland	n/a	n/a	n/a	1,217,769	1,219,458	
Coastal	n/a	n/a	n/a	121,222	26,368	
<b>Total</b>	<b>7,736,040</b>	<b>1,073,807</b>	<b>2,141,263</b>	<b>1,338,991</b>	<b>1,245,826</b>	

Source: DPIE Water's Water Accounting System

## Impact of the metering policy

The rollout of the metering policy will result in licences moving from one-part to two-part tariffs within unregulated and groundwater supplies. The CIE used the following assumptions to forecast the impact of this policy. Since the primary purpose of forecasting water take is as an input to tariff modelling, the split of entitlement between one-part and two-part tariff licences is important to forecast. To forecast entitlement in each tariff category (to which we will apply utilisation rates to forecast two-part tariff usage), we need to project the impact of the metering policy on the split



between tariff categories. Assumptions used by the CIE to estimate the proportion of two-part tariff entitlements by valley for unregulated and groundwater licenses follow.

The introduction of the metering program will occur in the following stages:

- stage 1: Surface water users with pumps of 500 mm or larger must comply by 1 December 2020. Not applicable to groundwater.
- stage 2: Remaining users in northern inland regions must comply by 1 December 2021 (2021–22 financial year).
- stage 3: Remaining users in southern inland regions must comply by 1 December 2022 (2022–23 financial year).
- stage 4: Remaining users in the coastal regions must comply by 1 December 2023 (2023–24 financial year).

For the purpose of determining the timing of the metering rollout for each unregulated surface water charge valley, valleys are allocated to regions as follows:

- Border, Gwydir, Namoi, Peel, Macquarie and Far West as 'Northern Inland',
- Lachlan, Murray, Murrumbidgee as 'Southern Inland' and
- North Coast, Hunter, and South Coast as 'Coastal'.

Using these assumptions, the proportion of two-part tariff entitlements are calculated by valley for:

- local water utilities and town water suppliers (Table 30) – unregulated rivers,
- all other unregulated river licences, excluding major water utilities, such as stock and domestic (Table 31) and
- groundwater licences (Table 32)

Using these assumptions, we calculate the following shares of entitlement that are on two-part tariffs as a share of total entitlement by valley.

**Table 30. Unregulated river shares of entitlement that are on two-part tariffs by valley—Local water utilities and town water supplies (2019–20 to 2024–25)**

Valley	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Border	0.30	0.55	0.55	0.55	0.55	0.55
Gwydir	0.09	0.18	0.18	0.18	0.18	0.18
Namoi	0.00	0.00	0.00	0.00	0.00	0.00
Peel	0.00	0.00	0.00	0.00	0.00	0.00
Lachlan	0.53	0.53	0.53	0.53	0.53	0.53
Macquarie	0.87	0.91	0.91	0.91	0.91	0.91
Far West	0.86	0.86	0.86	0.86	0.86	0.86
Murray	0.09	0.09	0.09	0.09	0.09	0.09
Murrumbidgee	0.49	0.49	0.49	0.49	0.49	0.49

Valley	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
North Coast	0.76	0.77	0.79	0.80	0.80	0.80
Hunter	1.00	1.00	1.00	1.00	1.00	1.00
South Coast	0.97	0.97	0.97	0.97	0.97	0.97

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020.

**Table 30. Shares of entitlement that are on two-part tariffs as a share of total entitlement by valley – other unregulated water source types (excluding major utilities) (2019-20 to 2024-25)**

Valley	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
Border	0.56	0.66	0.66	0.66	0.66	0.66
Gwydir	0.51	0.62	0.62	0.62	0.62	0.62
Namoi	0.36	0.44	0.44	0.44	0.44	0.44
Peel	0.19	0.19	0.19	0.19	0.19	0.19
Lachlan	0.14	0.23	0.31	0.31	0.31	0.31
Macquarie	0.55	0.78	0.78	0.78	0.78	0.78
Far West	0.65	0.69	0.69	0.69	0.69	0.69
Murray	0.62	0.73	0.84	0.84	0.84	0.84
Murrumbidgee	0.40	0.45	0.49	0.49	0.49	0.49
North Coast	0.22	0.23	0.24	0.25	0.25	0.25
Hunter	0.13	0.15	0.17	0.20	0.20	0.20
South Coast	0.45	0.47	0.49	0.51	0.51	0.51

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020.

**Table 31. Groundwater shares of groundwater entitlement that are on two-part tariffs as a share of total entitlement by charge area (2019–20 to 2024–25)**

Region	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio
<b>Major aquifers</b>						
Inland	0.94	0.95	0.97	0.97	0.97	0.97
Murrumbidgee	0.95	0.95	0.95	0.95	0.95	0.95
Coastal	1.00	1.00	1.00	1.00	1.00	1.00
<b>Minor aquifers</b>						
Inland	0.68	0.75	0.83	0.83	0.83	0.83
Murrumbidgee	0.93	0.95	0.97	0.99	0.99	0.99
Coastal	0.32	0.37	0.43	0.48	0.54	0.54

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020.

## Forecast water take

### Regulated

As recommended by the CIE, we have projected water take/usage of regulated water sources by assuming that take in future years will be equal to the long-run average of water take for the most recent 20 years of available data. This approach is consistent with the forecasting approach used for the previous regulatory period.

**Table 32. Forecast regulated usage by charge valley**

Valley	Long-run average and forecast usage from 2019–20 onwards (ML)
Border	147,948
Gwydir	239,365
Namoi	149,925
Peel	12,686
Lachlan	191,214
Macquarie	249,042
Murray	1,419,325

Valley	Long-run average and forecast usage from 2019–20 onwards (ML)
Murrumbidgee	1,593,152
Lowbidgee	36,530
North Coast	574
Hunter	121,447
South Coast	3,946
<b>Total</b>	<b>4,165,155</b>

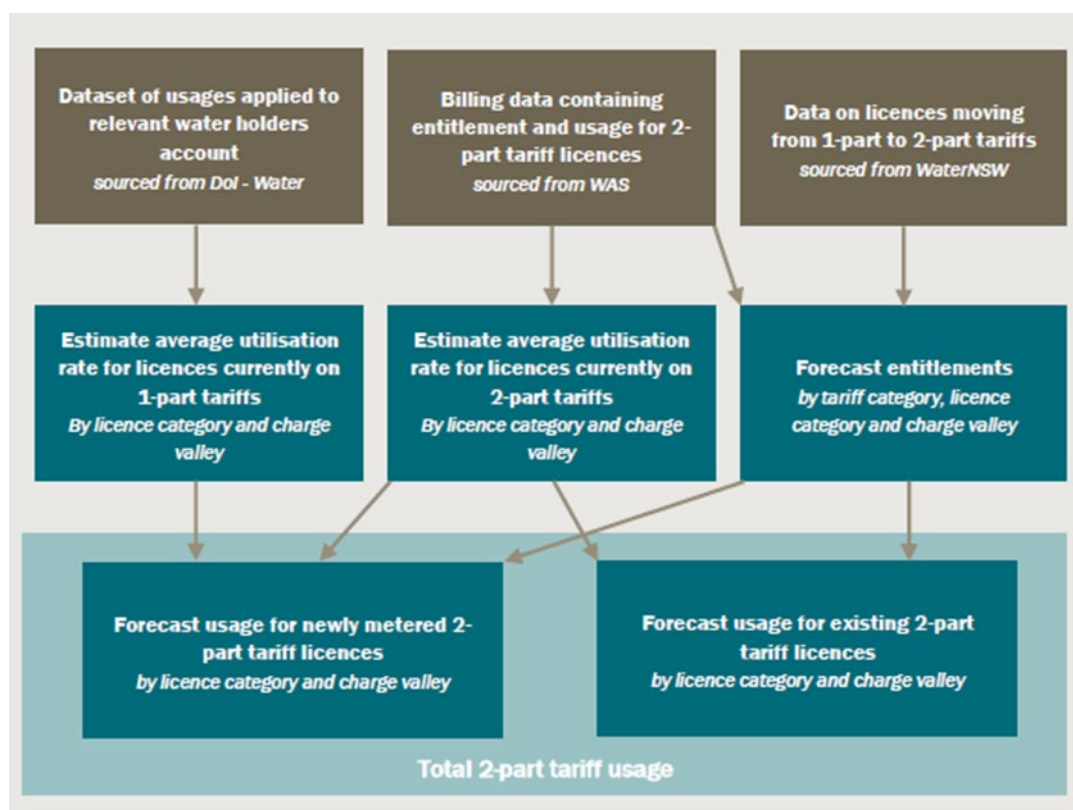
Note: Forecasts of the Lowbidgee supplementary usage are based on usage data since only 2012–13 and North Coast and South Coast valleys usage are based on usage from 2004-05, as a longer time series is not available for these water sources.

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020.

## Unregulated

For unregulated water sources, estimates are less certain as, until recently, there has been less available data upon which to base future forecasts. However, significantly more complete unregulated usage data is now available, and stored in the Water Accounting System (WAS). This simplifies the process of obtaining data inputs and reduces the need for extrapolation of limited data to a wide range of water sources.

The CIE used the following approach to recommend usage forecasts for unregulated two-part tariff customers.



### Figure 3. Forecasting unregulated two-part tariff usage excluding major utilities

Note. Brown boxes indicate inputs and data sources while blue boxes are processes/steps of the methodology.

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020

### Forecasts of water take

We have included the following forecasts of water take by two-part tariff licensees by multiplying the average utilisation rate by entitlement for each valley, licence category, and tariff category in each forecast year.

**Table 33. Forecast unregulated water source take by two-part tariff licences (ML)**

Valley	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
Border	5,357	5,724	5,724	5,724	5,724	5,724
Gwydir	1,421	1,506	1,506	1,506	1,506	1,506
Namoi	3,731	3,942	3,942	3,942	3,942	3,942
Peel	575	575	575	575	575	575
Lachlan	3,825	3,937	4,050	4,050	4,050	4,050
Macquarie	51,019	54,931	54,931	54,931	54,931	54,931
Far West	91,933	92,802	92,802	92,802	92,802	92,802
Murray	4,891	5,046	201	5,201	5,201	5,201
Murrumbidgee	8,712	8,892	9,073	9,073	9,073	9,073
North Coast	40,791	40,964	41,138	41,311	1,311	41,311
Hunter	122,987	123,137	123,287	123,438	123,438	123,438
South Coast	650,766	650,896	651,027	651,157	651,157	651,157
<b>Total</b>	<b>986,007</b>	<b>992,353</b>	<b>993,255</b>	<b>993,709</b>	<b>993,709</b>	<b>993,709</b>

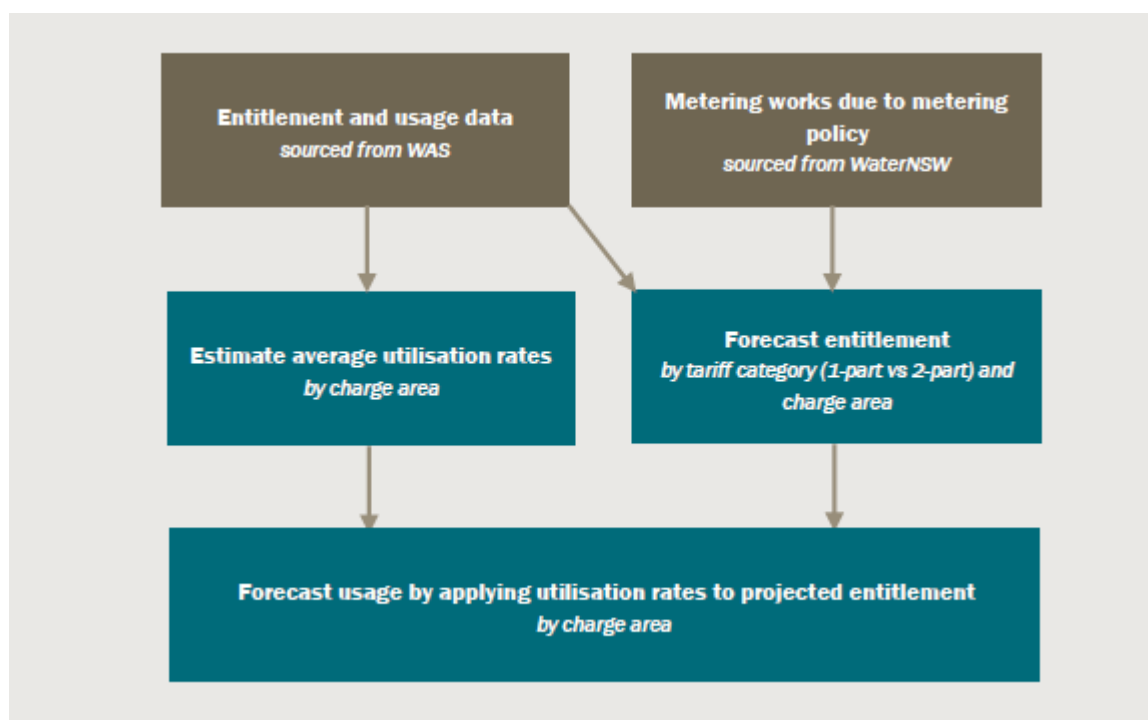
Note: This table includes usage by major utilities, local water utilities, domestic and stock and all other unregulated water licences.

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020

### Groundwater

To estimate groundwater take forecasts for two-part customers, the CIE used a similar method to that used by IPART in 2016. However, we have improved the accuracy by estimating different utilisation rates for each charge area, rather than estimating a single utilisation rate across all areas.

The CIE used the approach set out in the figure below to recommend usage forecasts for groundwater two-part tariff customers.



**Figure 4. Forecasting groundwater two-part tariff usage excluding major utilities**

Source: the Centre for International Economics, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020

### Forecasts of water take

We have included the following forecasts of groundwater take by two-part tariff licensees by multiplying the average utilisation rate by entitlement for each valley and tariff category in each forecast year.

**Table 34. Forecast groundwater take by two-part tariff licences (ML)**

Valley	2019–20	2020–21	2021–22	2022–23	2023–24	2024-25
Inland	655,742	690,868	725,994	725,994	725,994	725,994
Murrumbidgee	281,831	283,166	284,501	285,836	285,836	285,836
Coastal	23,524	27,684	31,845	36,005	40,166	40,166
HWC	8,353	8,353	8,353	8,353	8,353	8,353
<b>Total</b>	<b>969,449</b>	<b>1,010,071</b>	<b>1,050,692</b>	<b>1,056,188</b>	<b>1,060,348</b>	<b>1,060,348</b>

Note: HWC refers to Hunter Water Corporation.

Source: the CIE, Forecasting water take, Prepared for Department of Industry—Water, 18 June 2020

### Floodplain harvesting water take forecasts

We are currently working towards creating floodplain harvesting licences in the following valleys:

- Barwon–Darling
- Border

- Gwydir
- Macquarie
- Namoi.

As identified in our 2015 submission to IPART for WAMC prices, the cost of developing and implementing the floodplain harvesting framework has been funded by the Australian Government as part of the Basin Plan. The activities relating to administering floodplain harvesting licences are incremental to the activities undertaken for other licence administration and are strongly correlated to the level of water take. Therefore, we propose that the floodplain harvesting licences are charged as water take only licences, as was the approach taken by IPART in its 2016 review for WAMC prices.

We have maintained the same approach used by IPART in its 2016 review of WAMC prices, with the addition of floodplain harvesting management costs and water take being added to regulated rivers in most valleys; the exception is the Far West, where water take estimates are added as unregulated. This reflects the type of water source from which the floodplain waters are harvested. For the 2021 regulatory period, we anticipate most floodplain harvesting licences to occur in regulated water sources, except the Barwon–Darling, which is an unregulated water source.

### Forecasts of water take

For the calculation of water take forecasts, we estimate that entitlement volumes are issued at the level of the long-term average diversion limits, as specified in the water sharing plans. It is likely that actual entitlement values will be greater than this and more accurate values will be provided through the review period.

Water take forecasts have been incorporated in our modelling at the level of the long-term average diversion limits that are specified in water sharing plans.

**More information is provided in Detailed Paper H – Licences and volumes.**

## 9 Tariffs by water source

Water users pay a combination of fixed water prices charges, based on licence entitlement, and volumetric usage prices charges (if metered), specific to an area or water source.

Prices and bills vary across valleys and water source types so that revenue raised recovers the user share of costs for that water source/location.

Small users pay a minimum annual charge to reflect the fixed cost of maintaining a licence and protect these customers from unfairly high prices.

There are also fee-for-service charges for specific transactions (for example licence applications). These are not included in bills.

Prices have been limited to a maximum increase of 5% each year. Where current WAMC prices recover the full cost of water management services, or full cost recovery is reached before the end of the 2021 regulatory period, price increases will be lower than 5% in those subsequent years. Limiting price increases, whilst allowing a certain percentage:

- protects consumers of regulated services from unreasonable price hikes
- encourages economic efficiency and improvements in service quality
- ensures financial viability of the three agencies
- considers the impact on customers.



## Regulated water sources

The following table outlines the proposed regulated rivers water management prices. It shows prices for the last year of the 2016 regulatory period and the first and last year of the 2021 regulatory period.

**Table 35. Forecast regulated entitlement and usage water management prices capped at 5% per year (\$2020-21)**

	Entitlement charge			Usage charge		
	2020-21	2021-22	2024-25	2020-21	2021-22	2024-25
Border	2.28	2.39	2.77	1.78	1.87	2.16
Gwydir	1.62	1.70	1.97	1.40	1.47	1.70
Namoi	2.73	2.87	3.32	1.84	1.93	2.24
Peel	2.67	2.80	3.25	4.76	5.00	5.79
Lachlan	1.43	1.50	1.74	1.92	2.02	2.33
Macquarie	1.71	1.80	2.08	1.85	1.94	2.25
Murray	1.54	1.62	1.87	1.10	1.16	1.34
Murrumbidgee	1.41	1.48	1.71	0.94	0.99	1.14
Lowbidgee	1.41	1.48	1.71	0.94	0.99	1.14
North Coast	3.97	4.17	4.83	6.12	6.43	7.44
Hunter	3.12	3.28	3.79	2.14	2.25	2.60
South Coast	3.34	3.51	4.06	5.32	5.59	6.47

## Unregulated water sources

The following table outlines the proposed regulated rivers water management prices. It shows entitlement and usage prices for the last year of the 2016 regulatory period and the first and last year of the 2021 regulatory period, for two-part entitlement licence holders.

The prices for one-part entitlement licence holders are the sum of the two-part entitlement and usage prices.

**Table 36. Forecast unregulated two-part entitlement and usage water management prices capped at 5% each year (\$2020-21)**

	Two-part entitlement charge			Two-part usage charge		
	2020-21	2021-22	2024-25	2020-21	2021-22	2024-25
Border	2.31	2.43	2.81	2.47	2.59	3.00
Gwydir	2.31	2.43	2.81	2.47	2.59	3.00
Namoi	2.31	2.43	2.81	2.47	2.59	3.00
Peel	2.31	2.43	2.81	2.47	2.59	3.00
Lachlan	2.69	2.82	3.27	2.91	3.06	3.54
Macquarie	2.69	2.82	3.27	2.91	3.06	3.54
Murray	2.64	2.77	3.21	4.21	4.42	5.12
Murrumbidgee	3.27	3.43	3.97	5.81	6.10	7.06
Far West	4.13	4.34	5.02	2.53	2.66	3.08
North Coast	4.59	4.82	5.58	4.93	5.18	5.99
Hunter	1.30	1.37	1.58	2.13	2.24	2.59
South Coast	1.75	1.84	2.13	1.49	1.56	1.81

## Groundwater

The following table outlines the proposed regulated rivers water management prices. It shows prices for the last year of the 2016 regulatory period and the first and last year of the 2021 regulatory period.

The prices for one-part entitlement licence holders are the sum of the two-part entitlement prices.

**Table 37. Forecast groundwater two-part entitlement and usage water management prices capped at 5% each year (\$2020-21)**

	Two-part entitlement charge			Two-part usage charge		
	2020-21	2021-22	2024-25	2020-21	2021-22	2024-25

	Two-part entitlement charge			Two-part usage charge		
Inland	3.86	4.05	4.69	3.13	3.29	3.80
Murrumbidgee	2.56	2.69	3.11	2.08	2.18	2.53
Coastal	1.76	1.85	2.14	3.29	3.45	4.00

## Minimum annual charge

If a customer's total bill is calculated to be less than these fixed costs per licence, they will pay the minimum annual charge (MAC) instead of entitlement and usage charges.

We have modelled bill impacts based on our proposal to cap prices at a maximum of 5% each year for a range of entitlement and water take volume combinations. On this basis, we have assumed the following numbers of licence holders will pay the MAC in each year, along with the WAMC revenue that will result.

**Table 38. The Minimum Annual Charge (\$2020-21)**

	2020-21	2021-22	2022-23	2023-24	2024-25
MAC	\$213.74	\$224.43	\$235.65	\$247.43	\$259.81
Number of customers	24,389	24,389	24,389	24,389	24,389
% customers paying the MAC	64%	64%	64%	64%	64%
MAC Revenue	\$5,212,978	\$5,473,627	\$5,747,308	\$6,034,674	\$6,336,407
% total revenue	12%	12%	12%	13%	13%

## Gayini (Nimmie–Caira)

The Gayini Nimmie–Caira project is a supply measure under the sustainable diversion limit (SDL) adjustment scheme. (A supply measure is a project that allows equivalent environmental outcomes to be achieved with less water.<sup>41</sup>)

The infrastructure is owned by WAMC and the ongoing maintenance and management is undertaken by the Nari Nari Tribal Council under an agreement. The Nari Nari Tribal Council will charge the department for undertaking this work and we will record it as a cost to be recovered through WAMC prices.

<sup>41</sup> More information on the sustainable diversion limit adjustment mechanism is available at <https://www.industry.nsw.gov.au/water/plans-programs/water-recovery-programs/sustainable-diversion-limits>

To recover the costs due to be paid to the Nari Nari Tribal Council, we propose that WAMC water management charges for the licence holders in the Murrumbidgee Valley are calculated to recover the costs due to be paid to the Nari Nari Tribal Council through existing fixed and variable charges.

Allocating costs to users within the Murrumbidgee Valley applies the impactor-pays principle reflecting that environmental releases are required within the valley to mitigate against water used by other licence holders. In addition, the Murrumbidgee Valley users receive considerable benefits, through the potential for increased water allocations, due to more efficient use of environmental water. The costs will be included in activity code W07-01, therefore 80% of the costs are allocated to users (according to the principle of impactor-pays) and 20% to the government to reflect the wider benefits to the community generated by the project.

### Efficient costs

We have yet to receive a breakdown of the efficient costs of managing water infrastructure from the Nari Nari Tribal Council. These costs will be provided to IPART prior to 1 September 2020 to allow for adequate stakeholder engagement about this proposed charge.

## Bill impacts

To demonstrate the effects of price increases on water users' bills, we have prepared comparisons of the effects of the price increases for water users:

- in regulated and unregulated rivers and groundwater systems
- across different regions of NSW
- for small, medium and large entitlement holders with assumed water take volumes.

### Regulated bill impacts

**Table 39. Bill impacts for regulated small customers (\$2020–21)**

Small customer (100ML/year – 60% usage)					
	Current	2024–25 5% Cap	2024–25 full cost recovery	5% p.a. increase variance	Full cost recovery variance
North	379	461	498	22%	31%
Southern*	214	260	308	22%	50%
Central	270	328	448	22%	66%
Coastal	619	753	1403	22%	127%

\* Southern small customer bills are below the MAC threshold (current \$205) and have their bills set at the MAC amount of \$213.74

**Table 40. Bill impacts for medium regulated customers (\$2020–21)**

Medium customer (500ML/year – usage 60%)					
	2020-21 (current)	2024-25 5% Cap	2024-25 full cost recovery	5% p.a. increase Variance	Full cost recovery variance

Medium customer (500ML/year – usage 60%)					
North	1,896	2,305	2,488	22%	31%
Southern*	1,025	1,245	1,541	22%	50%
Central	1,351	1,642	2,238	22%	66%
Coastal	3,096	3,764	7,017	22%	127%

**Table 41. Bill impacts for large regulated customers (\$2020–21)**

Large customer (1000ML/year – 60% usage)					
	2020-21 (current)	2024-25 5% Cap	2024-25 full cost recovery	5% p.a. increase Variance	Full cost recovery variance
North	3,792	4,609	4,976	22%	31%
Southern*	2,049	2,491	3,082	22%	50%
Central	2,701	3,283	4,476	22%	66%
Coastal	6,193	7,527	14,034	22%	127%

## Unregulated bill impacts

**Table 42. Bill impacts for unregulated small customers (\$2020–21)**

Small customer (100ML/year – 60% usage)					
	Current	2024-25 5% Cap	2024-25 full cost recovery	5% p.a. increase variance	Full cost recovery variance
North	379	461	1,438	22%	279%
Southern	596	725	2,160	22%	262%
Central	484	588	795	22%	64%
Coastal	426	517	1,043	22%	145%

**Table 43. Bill impacts for unregulated medium customers (\$2020–21)**

<b>Medium customer (500ML/year – 60% usage)</b>					
	2020–21 (current)	2024–25 5% Cap	2024–25 full cost recovery	5% p.a. increase Variance	Full cost recovery variance
North	1,896	2,305	7,188	22%	279%
Southern	2,981	3,623	10,801	22%	262%
Central	2,420	2,942	3,975	22%	64%
Coastal	2,128	2,587	5,215	22%	145%

**Table 44. Bill impacts for unregulated large customers (\$2020–21)**

<b>Large customer (1000ML/year – 60% usage)</b>					
	2020–21 (current)	2024–25 5% Cap	2024–25 full cost recovery	5% p.a. increase Variance	Full cost recovery variance
North	3,792	4,609	14,377	22%	279%
Southern	5,961	7,246	21,603	22%	262%
Central	4,840	5,883	7,950	22%	64%
Coastal	4,257	5,174	10,431	22%	145%

## Groundwater bill impacts

**Table 45. Bill impacts for groundwater small users (\$2020–21)**

<b>Small customer (100ML/year – usage 60%)</b>					
	Current	2024–25 5% Cap	2024–25 full cost recovery	5% p.a. increase Variance	Full cost recovery variance
Inland	574	697	752	22%	31%
Murrumbidgee	381	463	752	22%	97%
Coastal	373	454	1,476	22%	295%

**Table 46. Bill impacts for groundwater medium customers (\$2020–21)**

Medium customer (500ML/year – 60% usage) \$2020-21					
	2020–21 (current)	2024–25 5% Cap	2024–25 Full cost recovery	5% p.a. increase variance	Full cost recovery variance
Inland	2,869	3,487	3,758	22%	31%
Murrumbidgee	1,904	2,314	3,758	22%	97%
Coastal	1,867	2,269	7,379	22%	295%

**Table 47. Bill impacts for groundwater large customers (\$2020–21)**

Large customer (1000ML/year – usage 60%)					
	2020–21 (current)	2024–25 5% Cap	2024–25 full cost recovery	5% p.a. increase variance	Full cost recovery variance
Inland	5,738	6,975	7,517	22%	31%
Murrumbidgee	3,803	4,629	7,517	22%	97%
Coastal	3,734	4,539	14,759	22%	295%

More information on this is provided in Detailed Paper I – Tariffs by water source.

## 10 Other revenue

### Water consent transactions

Water consent transactions (which are also known as WAMC activity W09-01) are fee-for-service activities undertaken by NRAR that manage the issue, trade and amendment of water access licences, water allocations and water approvals.

Users of the transactions pay a fee intended to reflect the costs of the transactions in accordance with the impactor-pays principle.

We have used the same methodology as we used in our submission to IPART's review of prices for the 2016 regulatory period. We have calculated charges by:

1. estimating the time taken to process the transaction
2. calculating labour costs using hourly labour costs
3. adding any direct costs incurred in the transaction

In 2019 we engaged consultants Nous Group to develop a proposed licensing and approvals fee schedule for water consent transactions that more accurately reflects the cost of the work we undertake. We aimed to develop an efficient and equitable licensing and approvals fee schedule



based on an analysis of the costs attributable to each type of water consent transaction. It proposed:

- fee categories reflecting the transaction types we undertake
- fee amounts for each fee category to reflect the costs we incur with our current systems and procedures.

The fees that are proposed are set out in the following table.

**Table 48. Fees proposed for water consent transactions**

Fee Category	Type	Sub-type			Proposed Fees <sup>42</sup>
Flood Work Approvals	New or amend approval	Flood study required	No advertising		\$1,497.94
			Advertising		\$2,311.23
		No flood study required	No advertising		\$1,174.00
			Advertising		\$1,888.43
	Extension of approval				\$961.31
Water Supply Works and Water Use Approvals	New	Surface	Pump	No advertising	\$3,064.47
				Advertising	\$3,741.72
		Water	Dam	No advertising	\$3,033.15
				Advertising	\$3,804.14
		Ground water i.e. bore	No advertising		\$2,490.80
			Advertising		\$2,920.72
	Amend	Specify as inactive			No Charge
		Remove supply work			No Charge
		Update holder contact details, change land description for water use or construct a replacement bore			\$219.93 <sup>43</sup>
		Add and change water supply works, add and change water use or changes to conditions			\$1,927.51
Extension				\$514.23	

<sup>42</sup> Plus two additional fee components: \$20.15 per application for Water Licensing System improvements; and \$49.28 per application for on-line lodgement and payment system.

<sup>43</sup> NRAR does not propose to change the current fee for administrative change as the complexity of this has not changed due to the different applicant base resulting from the transfer of functions. The fee has been escalated by CPI

Fee Category	Type	Sub-type	Proposed Fees <sup>42</sup>	
Water Licences	Zero Shares		\$1,598.88	
	Controlled Allocation Licences		\$2,044.31	
	Specific purpose	Subtract any amount from existing licence		\$1,597.06
		<=10ML	New	\$2,711.09
			Add to existing licence	\$3,455.22
		>10ML	New or add to existing licence	\$3,953.98

The revenue from these proposed fees is estimated to be \$563,043 per year (\$2020-21) on average, if the forecast volumes of water consent transactions occur.

## Water Supply (Critical Needs)

The *Water Supply (Critical Needs) Act 2019* responds to the unprecedented drought conditions being experienced in NSW. It creates a pathway for critical water infrastructure developments that are urgently needed to secure water supplies for regional towns.

As the demand for declarations and authorisations is driven by users, we propose to introduce a new consent transaction charge applicable to public authorities to recover the costs associated with this water management service. This ensures that the impactor-pays principles are applied effectively and transparently and that other users are not subsidising the costs.

**Our detailed proposals for consent transaction charges covering our existing services that are now undertaken by NRAR or the department and the Water Supply (Critical Needs) Authorisation Assessment Charge are outlined in Detailed Paper J – Other revenue.**