Attachment F

Summary of expenditure and services by WAMC activity

30 September 2024

WaterNSW

NSW GOVERNMENT Natural Resources Access Regulator

NSW GOVERNMENT

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WAMC activities – performance in the current period and proposed expenditure and services

This Attachment provides the detail of our actual and forecast expenditures set out by WAMC activity codes, along with a description of our performance in the current period and our proposed services in the 2025 determination period.

Costs are assigned to and reported against 31 water management activities that broadly align with the water planning and management activities set out in the National Water Initiative (NWI) pricing principles. There is one WAMC code (W06-04 Drainage management plan development) that does not have costs assigned in both the current period and the 2025 determination period. This code has been left as a placeholder only as WAMC does not currently carry out these services. The WAMC activities are shared between the WAMC agencies based on the division of WAMC functions. Most activities are delivered by a single agency, but some are shared between agencies.

Our performance in the current determination period is reported against output measures and performance indicators set by IPART in the 2021 WAMC price determination. These measures and indicators are largely activity and output based. As outlined in Chapter 2 of the WAMC pricing proposal and Attachment E, we have developed WAMC outcomes and objectives for the 2025 determination period based on our legislative requirements and on what we heard from customers and the community through consultation.

Figure 1: WAMC activities' contribution to the 4 high-level WAMC outcomes.

W01-01,-02,-03 and -04 Surface Water Monitoring

Description

The surface water monitoring group of activities consists of:

- W01-01 Surface water quantity monitoring
- W01-02 Surface water data management and reporting
- W01-03 Surface water quality monitoring
- W01-04 Surface water algal monitoring

WaterNSW undertakes water monitoring on behalf of the NSW Department of Climate Change the Energy, the Environment and Water (the department) to support the department in carrying out its WAMC functions. It is also responsible for the operational efficiencies associated with providing water monitoring services for WAMC and for implementing efficient asset management practices to ensure water monitoring assets are managed effectively.

Surface water quantity monitoring sites are established at various surface water bodies, such as rivers, lakes, and streams across NSW. Water quality monitoring sites focus specifically on assessing the chemical, physical, and biological properties of water. These sites are crucial for understanding and managing surface water resources.

Surface water monitoring sites collect data on water flow rates, water quality and sediment transport. This information is vital for assessing the health of aquatic ecosystems, managing water allocations for different uses, and responding to events like floods and droughts. It also helps in protecting water quality for downstream users and maintaining ecological balance in surface water systems.

There are a total of 437 surface water monitoring sites (as per the RRA Service Schedule 6) across NSW, which are managed through WAMC funding, in addition to a further 132 sites partially funded through WAMC.

Surface water quality monitoring services are delivered by WaterNSW in line with the data requirements captured in the Roles and Responsibilities Agreement (RRA), including:

- State Water Quality Assessment and Monitoring Program
- Dissolved Oxygen and Blackwater Monitoring Program
- Cold Water Pollution Monitoring Program
- NSW Rivers Algal Monitoring Program.

Surface water quantity (hydrometric) monitoring services are delivered by WaterNSW and include the following:

- Monitoring at water quantity stations. These sites may change subject to review by the department and in agreement between WaterNSW and the department within IPART funding limitations
- Agreed monitoring parameters for each site.

It is noted that WaterNSW operates a range of additional surface water monitoring sites across the state, funded by means other than WAMC, and that to the extent it is able, data from those sites will continue to be made available to the department.

This group of activities under the W01-01, W01-02, W01-03 and W01-04 activity codes entails the provision of:

- a surface water quantity monitoring system; including design, station calibration, data collection, processing, encoding, quality assurance and archiving from the networks of water monitoring stations; the delivery of near real time height and/or flow data from all telemetered sites to the corporate database; and the maintenance and operation of surface water monitoring stations.
- data management and reporting of surface water quantity, quality and biological information; including compilation, secure storage, management and publishing of data to customers, stakeholders and the public.
- a surface water quality monitoring program, including design, sample collection, laboratory testing and analysis, test result quality assurance to accepted standards, and test result encoding to make it available for data management and reporting
- a surface water algal monitoring program, including design, sample collection, laboratory analysis, algal identification and enumeration to accepted standards, and result encoding for provision to regional coordinating committees.

Expenditure

Table 1: Current period operating expenditure and proposed costs ($000, 2024-25)

W01-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water quantity monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	6,598	6,780	6,757	6,816					
Actual expenditure	6,318	5,548	5,274	5,294					
Proposed expenditure					5,720	5,595	5,670	5,815	5,971

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

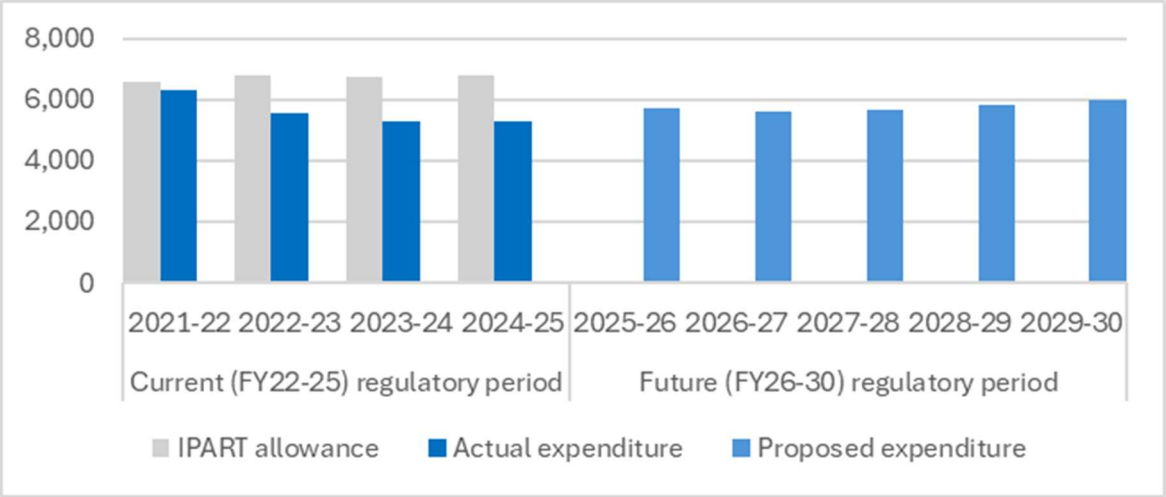

Figure 2: W01-01 Surface water quantity monitoring operating expenditure ($000, 2024-25)

Table 2: Current period operating expenditure and proposed costs ($000, 2024-25)

W01-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water data management and reporting	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	623	639	636	643					
Actual expenditure	104	32	699	643					
Proposed expenditure					626	609	613	627	642

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

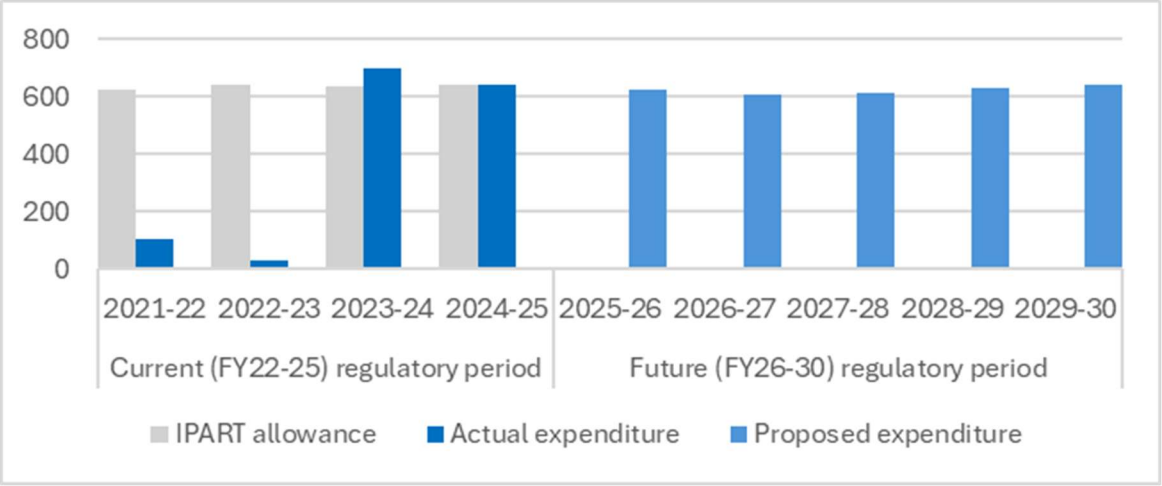

Figure 3: W01-02 Surface water data management and reporting operating expenditure ($000, 2024-25)

Table 3: Current period operating expenditure and proposed costs ($000, 2024-25)

W01-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water quality monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	1,449	1,488	1,482	1,499					
Actual expenditure	1,211	1,170	1,045	959					
Proposed expenditure					1,232	1,204	1,217	1,252	1,289

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

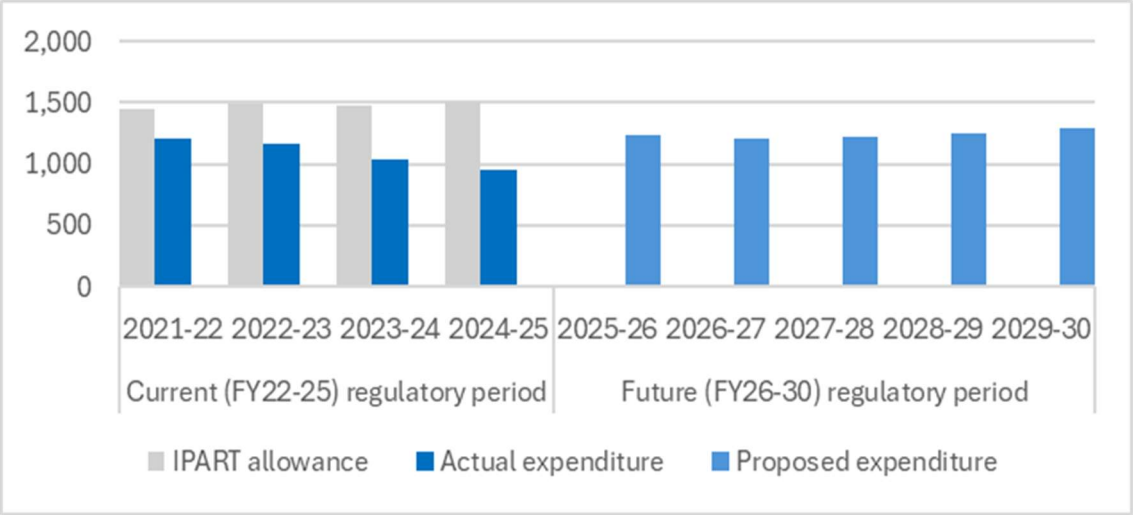

Figure 4: W01-03 Surface water quality monitoring ($000, 2024-25)

Table 4: Current period operating expenditure and proposed costs ($000, 2024-25)

W01-04	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water algal monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	892	916	913	924					
Actual expenditure	427	406	483	334					
Proposed expenditure					326	318	322	331	340

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

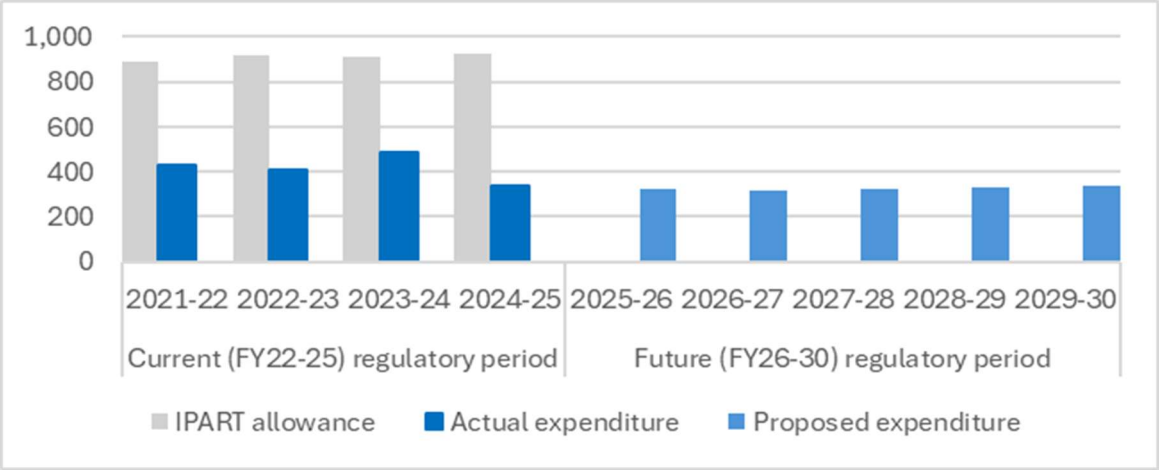

Figure 5: W01-04 Surface water algal monitoring ($000, 2024-25)

Table 5: Current period capital expenditure and proposed costs for Surface Water ($000, 2024-25)

W01 CAPEX	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater quantity monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance - WNSW	2,776	2,797	2,719	2,685					
Actual expenditure - WaterNSW	7,816	2,318	1,787	1,505					
Proposed expenditure - WNSW					4,115	3,999	3,980	4,009	4,070

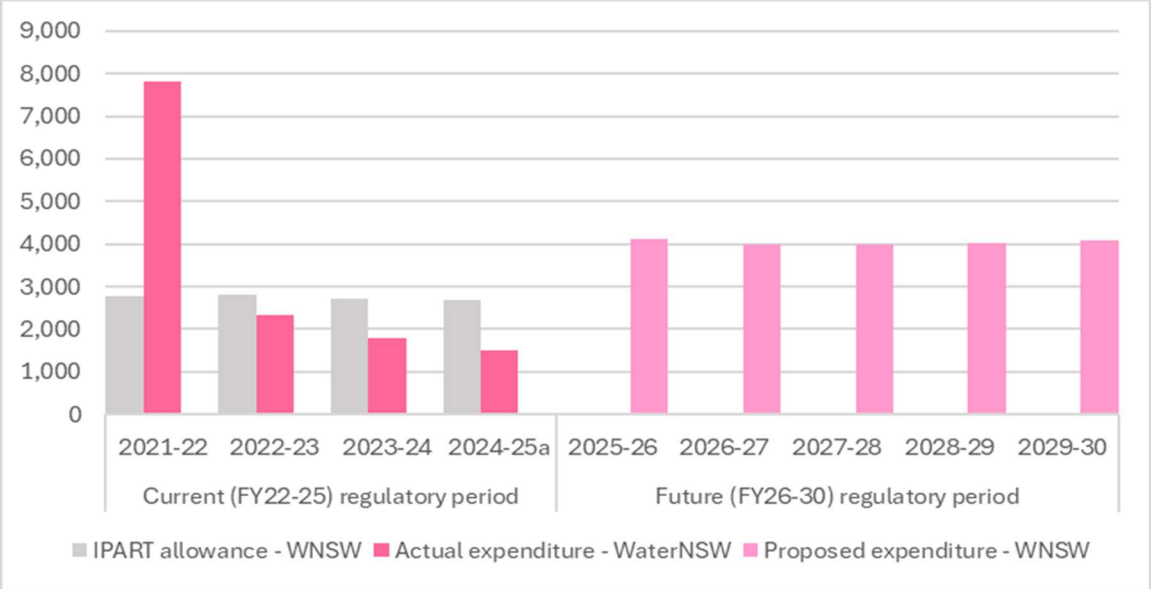

Figure 6: W01 Surface water capital expenditure ($000, 2024-25)

Current period performance

What we delivered in the current regulatory period

Key outputs or performance outcomes that we sought to achieve over the current regulatory period included:

- Quantity monitoring
- Quality monitoring
- Data management and reporting
- Algal monitoring

Against these outcomes WaterNSW largely met expectations.

The performance indicators for the WaterNSW surface water monitoring activities primarily involve metrics around data collection, data quality and data losses. Other surface water performance indicators refer to the number of stream gauging visits and deviations from previous rating tables.

Across the determination period, measures for surface water monitoring were largely met, with some exceptions due to the COVID-19 restrictions and wet weather conditions impacting safe access to sites during gauging activities. Data losses for level data were kept below 1%, showing an improvement from previous periods and in 2022-23, all surface water performance indicators were met.

Why our actual expenditure is higher or lower than the IPART allowance in the current determination period

Operational expenditure for the current determination period across the surface water monitoring codes W01-01, W01-02, W01-03 and W01-04 is below the total IPART allowance for these codes. This has occurred due to a range of reasons including:

- The need for water monitoring staff to prioritise other programs or activities such as attending to water quality events or environmental events in the regulated valleys.
- Wet weather and flooding conditions throughout the period along with COVID restrictions also hindered the ability of water monitoring staff to undertake all their activities.
- Changes to organisational arrangements and reporting lines for water monitoring staff also occurred during the period and the need to strike a pragmatic balance between multiple activities and additional programs along with the introduction of a new Roles and Responsibilities Agreement is reflected in this relative operating expenditure underspend.

Capital expenditure for the current determination period for the surface water monitoring code W01-01 is above the IPART allowance over the determination period. This expenditure included the purchase and implementation of specialised equipment to support safe water monitoring activities in times of flood. It also included renewal costs to return sites to working order after damage from bushfire and flood which was unable to be claimed through insurance.

Proposed services and costs for the 2025 determination period

Over the next determination period, WAMC will deliver additional programs for surface water monitoring in three areas. These are:

- New Hydrometric Networks and Remote Sensing (HNRS) sites
  - For the next period, WAMC proposes enhancing water quality monitoring in the Northern Basin, covering 15 new and 5 upgraded sites. This initiative aims to provide environmental and strategic benefits.
- Data management on new dissolved oxygen sites
  - Twelve new dissolved oxygen sites were installed during the current determination period, leading to additional operational expenditure in managing these assets.
- Operation and management for enhanced and new dissolved oxygen sites
  - Up to 35 additional dissolved oxygen (DO) sensors are planned for installation within the inland valleys before the new Determination period commences.

While increases in operating expenditure are anticipated in these three areas, WAMC plans to partially offset these costs through savings achieved via telemetry upgrades. Upgrades are scheduled for up to ninety Cold Water Pollution (CWP) sites, which are expected to reduce operational expenditure by lowering labour requirements.

Table 6: Proposed changes to the surface water monitoring program over the 2025-30 determination period

Initiative	Description	Driver for change
New HNRS sites	Provides improved information for the Northern Basin to enhance water quality. WaterNSW has provided input into the sites that are selected, and this will provide environmental and strategic benefits. 15 new and five upgraded sites in the Northen basin.	Assets for this program have been installed (with funding via the MDBA); however, no ongoing operating expenditure was included in this funding envelope. For the 2025-2030 period, WAMC is proposing a step change increase to manage these assets. This program is driven by MDBA to support improved monitoring and is in response to the increased regulatory needs (mid-system and end-of-system flows).

Initiative	Description	Driver for change
Data management on new DO sites	12 new dissolved oxygen sites (6 in Lachlan and six in Barwon Darling) were installed during the current determination period which will lead to additional operating expenditure for the management of these assets.	Assets for this program have been installed. This will benefit the department processes for assessing water quality and basin planning and will also provide information for event management and insights. Community benefits will also be derived.
O&M for enhanced (35) and new (5) DO sensor sites	Up to thirty-five additional DO sensors are being scoped to be installed within the inland valleys. Planning is complete and delivery has commenced with installation to be completed in FY25	Additional sensors will benefit the department in terms of its water quality assessment and basin planning requirements. The additional sensors will also assist in managing water quality events and provide on-going learnings.
Saving from telemetry upgrades	90 CWP sites have been flagged for telemetry upgrades which has the potential to create a 50% reduction in operating expenditure due to reduced labour requirements.	This is driven by business efficiencies.

The proposed operational expenditure for the group of activities for each of the W01-01, W01-02, W01-03 and W01-04 activity codes is outlined in the above Table 1 to Table 4 respectively.

Across the group of these Surface Water Monitoring codes, the proposed average annual operating expenditure of $7.944 million is a restrained but responsible increase compared to the actual average annual operating expenditure of $7.487 million in the current period.

Noting that the proposed increase also includes additional surface water monitoring programs, the limited increase is possible through the implementation of the efficiency measures.

The proposed capital allowance for surface water monitoring for the FY26-30 period includes the renewal of surface water hydrometric monitoring assets and investments in priority risk management initiatives. The risk management initiatives include:

- Bushfire resilience infrastructure upgrades for critical sites,

- Flood resilience infrastructure upgrades for critical sites,
- Specialized equipment to improve workforce safety (reducing the need to staff to work in water), and
- Provisioning of back up automatic instrumentation for critical sites

The increase in the proposed surface water monitoring capital allowance for the next determination period is necessary to address the priority risk management activities and is reflective of the difference between the average annual actual expenditure and the average annual allowance in the current period.

W01-05 Surface water ecological condition monitoring

Description

This activity provides design and application of a range of public and statewide data products, including risk assessments, river styles, High Ecological Value Aquatic Ecosystems (HEVAE), groundwater HEVAE, hydrostress, Water Quality Index (WaQI) and the River Condition Index (RCI). Together, these products enable a risk-based framework for water management that considers condition and ecological value of rivers, floodplains and wetlands. The role of data products developed and maintained under this activity is to provide accurate data to formulate improvements in the implementation and outcomes of water sharing plans (WSPs) to achieve the objectives of the New South Wales *Water Management Act 2000* (WM Act). See Figure 23 or Figure 25 in the W06-01 and W06-02 narratives respectively to understand this relationship. Further, this activity provides data products to activities across the NSW Department of Climate Change, Energy, the Environment and Water.

Expenditure

Table 7: Current period operating expenditure and proposed costs ($000, 2024-25)

W01-05	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water ecological condition monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	371	365	359	317					
Actual expenditure	555	771	445	445					
Proposed expenditure					1,562	1,637	1,440	1,367	1,397

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

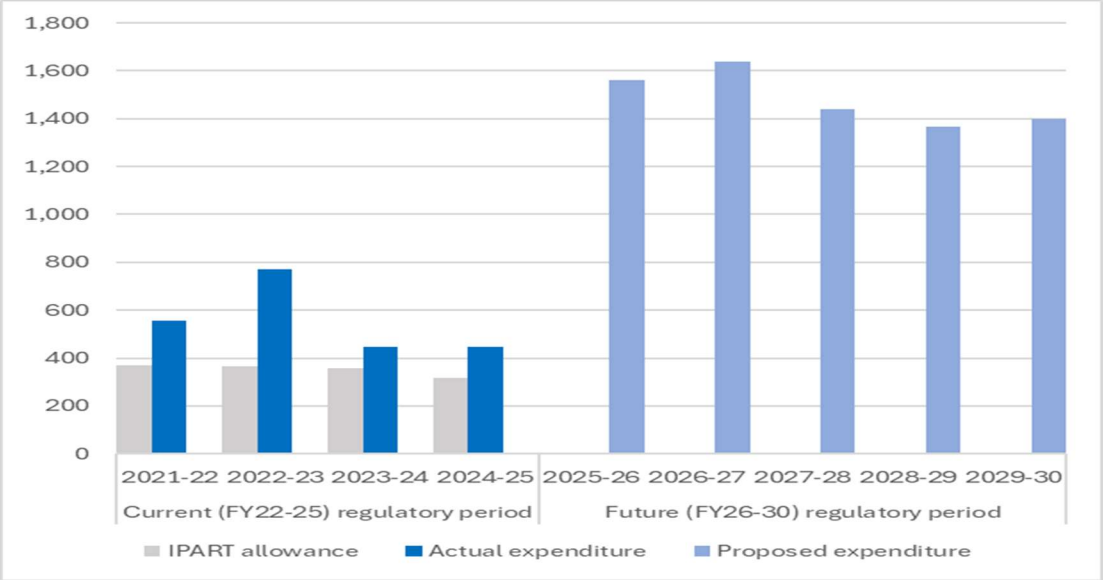

Figure 7: W01-05 Surface water ecological condition monitoring operating expenditure ($000, 2024-25)

Current period performance

Actual operating expenditure has exceeded IPARTs allowance for this activity in the current period. This is primarily due to the labour costs of developing the RCI and WaQI which were underestimated in the IPART allowance.

Performance over the current period has been strong, with this activity having met 85% (12/14) of its output measures and performance indicators as of the financial year 2023-24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 8 below.

Table 8: W01-05 current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM6 - Update of river styles database undertaken to support WSP development. Measure by number of plans: **Output = 50% Met**	Update of river styles completed in time for WSP evaluation = 100% **Met**	River styles updates have been completed on time to support WSP development. The same information is then used for WSP evaluation.
OM7 - Update of RCI undertaken to support WSP development. Measure by number of plans: **Output = 50% Met**	Update of RCI completed in time for WSP evaluation = 100% **Met**	The RCI was completed for all NSW and published January 2023.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM8 - Update of WaQI undertaken to support WSP development. Measure by number of plans: **Output = 50% Met**	Update of WaQI completed in time for WSP evaluation = 100% **Met**	The WaQI was completed for all NSW and published January 2023. It is available for evaluation of WSP.
OM9/OM10 - Coverage of river and groundwater HEVAE extended to coastal WSP areas. **Met**	River and groundwater HEVAE extended to cover coastal WSP areas in time for plan evaluation = 100% **Met**	River and groundwater HEVAE have been extended to the coast, with all areas completed November 2023.
OM11 - WaQI extended to coastal WSP areas. **Met**	WaQI extended to cover coastal WSP areas in time for plan evaluation = 100% **Met**	The WaQI was completed for all NSW and published January 2023. It is available for evaluation of WSP.
OM12 - WaQI incorporated into the RCI. **Met**	N/A	The WaQI was completed for all NSW and published January 2023. It is available for evaluation of WSP. WaQI has been incorporated into the RCI.
OM13 - River styles, WaQI, RCI and HEVAE available on DPIE website. **Met**	N/A	All products are available on the department website and through SEED.
OM14 - Technical reports for HEVAE and WaQI peer reviewed and published on DPIE website. **On track to be met as of 2023/24.**	Technical reports for HEVAE and WaQI updates peer reviewed and published on DPIE website within 3 months of completion = 100%. **On track to be met as of 2023/24.**	Draft HEVAE technical report is complete and about to undergo peer review. WaQI is near completion.

Proposed services and costs for the 2025 determination period

Legislative drivers remain unchanged, and all existing activities remain key tools to address the activity aims. However, there is a forecast step-up in operating expenditure, particularly in 2025-26 and 2026-27. This reflects:

- moving risk assessments for WSPs from W05-04 to W01-05, including the surface water modelling full time equivalent (FTE) component. This change was due to risk assessments evolving to be a product that is used in different stages of the WSPs, meaning it is better homed under W01-05. The

cost transfer of this work is estimated to be $670,000 across the 5 years of the next period, and accounts for 1.0 FTE per year.

- WaQI, RCI, and statewide HEVAE products will now need to be business-as-usual recurring tasks. This will include updates of RCI and WaQI on 5-year cycles, with the next update due in 2026-27. This work will require an increase in expenditure to deliver outputs in time. In addition, FTE component to publish products as interactive maps.
- development of a cultural values framework for inclusion in HEVAE assessments will need budget for local consultation processes. This work is estimated to be $145,000 across the 5 years of the next period.
- development of hydrostress and river type products will require technical expertise to develop methodology and spatial framework.
- Project management costs were not considered in previous WAMC submissions and have instead been provided by either the Lead Water Quality Science Support Team, or Manager of Surface Water Science. In developing cost forecasts for this code, 0.6 FTE combined has been allocated to ensure delivery of projects. This work is estimated to be $489,000 across the 5 years of the next period.
- detailed work planning and budget preparation has provided more detailed and realistic estimates of costs for successful and timely completion of products required to meet the demands of the Independent Commission Against Corruption (ICAC), Natural Resources Commission (NRC) and stakeholders for evidence-based water management decision making.

Proposed efficiencies

During the current period, this activity has improved timeframes for completion of river styles updates. There have also been improvements on sequencing required data updates with WSP remakes. This has improved the project planning and delivery of scientific information needed for WSP revision. Efficiency in delivering updated information in a spatial format has also been achieved. These improvements and increased efficiencies will continue in the next period. Further, improvement have been identified relating to HEVAE products.

These improvements are planned for delivery in the current period and will ensure efficiency gain in the delivery of information to inform WSP remakes and evaluation in the next period. Finally, information presented in interactive (publicly available) mapping products makes the information available to all. This enables transparent decision making ensuring everyone can access data rather than requesting information from the W01-05 team. While the efficiency saving is difficult to quantify, we estimate the reduction in workload to lead to a productivity improvement of 5%.

Data and systems improvements, as outlined in the Overheads narrative, will deliver efficiencies in this activity. Specifically, this activity will become more efficient by developing statewide data products that enable an improved risk-based water management framework.

The benefits specific W01-05 will include less effort by cleansing data, and less need to rely on contingent labour. Delivering productivity increases, and the general benefits that are shared across all activities, are $147,000 per year in productivity savings, along with avoided overhead resource costs of between 5-10 FTE.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- *Water Management Act (2000):*
  - Section 7 - requires the classification of water sources.
  - Section 10 - requires water management and sharing to be reviewed every five years to determine whether it has contributed to the principles of the Act (Part 5).
  - Section 35 - requires plans to set plan requirements, including performance measures.
  - Sections 95, 91, 333-6 require evidence on the nature, value and risk of water sources and the harm works and activities may have on surface and ground water sources for regulatory directions and enforcement proceedings in the NSW Land and Environment Court.
- Implementation of the NSW State Water Strategy and regional water strategies:
  - the department has obligations to undertake monitoring and research into performance indicators under Priority 3 of the NSW Water Management Strategy Implementation Plan that seeks to: 'Improve river, floodplain and aquifer ecosystem health, and system connectivity'.
- Independent audits and reviews:
  - feedback from ICAC, the NRC and stakeholders emphasise the importance of having data products available to both the department and the public to ensure all water management decisions are based on the best scientific advice possible.
- Stakeholder views and customer expectations :
  - the Understanding our stakeholders research project (2021) showed that the NSW public had a lack of confidence in WSPs.
  - the What Matters to our Customers insights report (April 2023) showed that all customer groups, confirmed as a priority, an expectation of confidence that management of water sharing and floodplains is driven by evidence-based decision making.

W02-01 – Groundwater Quantity Monitoring

Description

Groundwater is a vital source of water for various uses, including agriculture, industry, and urban water supply. Groundwater quantity monitoring data helps track groundwater availability over time. In conjunction with groundwater quality monitoring (W02-02) it aids in sustainable groundwater management and ensures that groundwater resources are not overexploited. Groundwater monitoring helps inform of the impact of resource extraction on groundwater systems, groundwater users and ecosystems.

Activities under W02-01 were assigned fully to WaterNSW in the previous determination period. While WaterNSW predominantly carries out work under this activity, The department leads the design of the network and monitoring specifications. The department uses the monitoring data to build on existing knowledge of aquifers and aquitards[1], making this available to the broader public to manage groundwater resource and to manage local impacts.

Water NSW and the department roles in groundwater quantity monitoring

The responsibilities of WaterNSW and the department for the purpose of groundwater quantity monitoring are summarised below.

The department

- Develops and maintains a State-wide water monitoring specification and rationale
- Sets and maintains monitoring requirements and quality standards
- Reviews delivery of services
- Provides advice to WaterNSW (technical or strategic).

WaterNSW

WaterNSW maintains a comprehensive groundwater monitoring network consisting of approximately 4,432 groundwater monitoring sites across NSW. To deliver its groundwater quantity monitoring functions, WaterNSW:

- Operates and maintains monitoring networks, which are used for both groundwater quantity and quality monitoring

[1] Aquitards are compacted layers of clay, silt or rock that retard water flow underground. They act as a barrier separating aquifers and limit and direct surface water that seeps down and replenishes aquifers.

- Undertakes the routine groundwater level (quantity) monitoring for general network and program specific network, data quality assurance and quality control, enters field and laboratory data into the databases
- Monitors groundwater levels, pressure or artesian flow monitoring
- Manages and maintains the water level data in databases and provides access to the department.

Groundwater monitoring assets include monitoring stations (including bores), instruments, and associated equipment necessary for data collection, analysis, and reporting. The distribution of assets throughout rural NSW and the Greater Sydney region allows for comprehensive groundwater monitoring and assessment in these areas. To date, the assets are concentrated mostly in the inland main aquifers.

WAMC uses monitoring bores mostly to gather different types of data to monitor and manage groundwater resources. While the monitoring bores are largely located in alluvial groundwater systems, more recent additions to the network include bores built to monitor and better manage the water resources in deeper locations.

These deeper bores have been added to the network in the last decade and costs have not previously been included in the WAMC IPART determination. During the current determination period the department provided $470,000 per year to maintain these deeper bores which are critical for monitoring and managing groundwater resources and the impacts of usage. These bores play a crucial role in ensuring compliance with environmental regulations and safeguarding water resources. Given this, we are seeking to recover the efficient ongoing costs associated with these monitoring bores through the WAMC price determination from now on.

Groundwater survey marks are also used to assist with monitoring of alluvial aquifer compaction.

Expenditure

In the current determination period, all groundwater monitoring expenditure has been recorded against the groundwater quantity monitoring activity code W02-01. This means that actual expenditure on groundwater quantity monitoring (W02-01) in the current period was lower than reported in **Error! Reference source not found.** and actual groundwater quality monitoring (W02-02) was higher than reported in Table 13 below. Because the monitoring network is used for both groundwater quantity and quality monitoring, and samples are taken for groundwater quality and quantity at the same time, all WaterNSW's expenditure on groundwater monitoring over the 2025 determination period is captured in the W02-01 forecasts.

Table 9: W02-01 Current period operating expenditure and proposed costs ($000, 2024-25)

W02-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater quantity monitoring	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - the department	0	0	0	0					
IPART allowance - WNSW	704	723	720	904					
IPART allowance	**704**	**723**	**720**	**904**					
Actual expenditure - the department	942	498	54	54					
Actual expenditure - WaterNSW	4,320	4,469	4,578	4,961					
Actual expenditure	**5,262**	**4,966**	**4,632**	**5,015**					
Proposed expenditure - the department					500	272	109	108	109
Proposed expenditure - WNSW					5,320	5,324	5,627	5,492	5,317
Proposed expenditure					**5,820**	**5,596**	**5,736**	**5,600**	**5,426**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

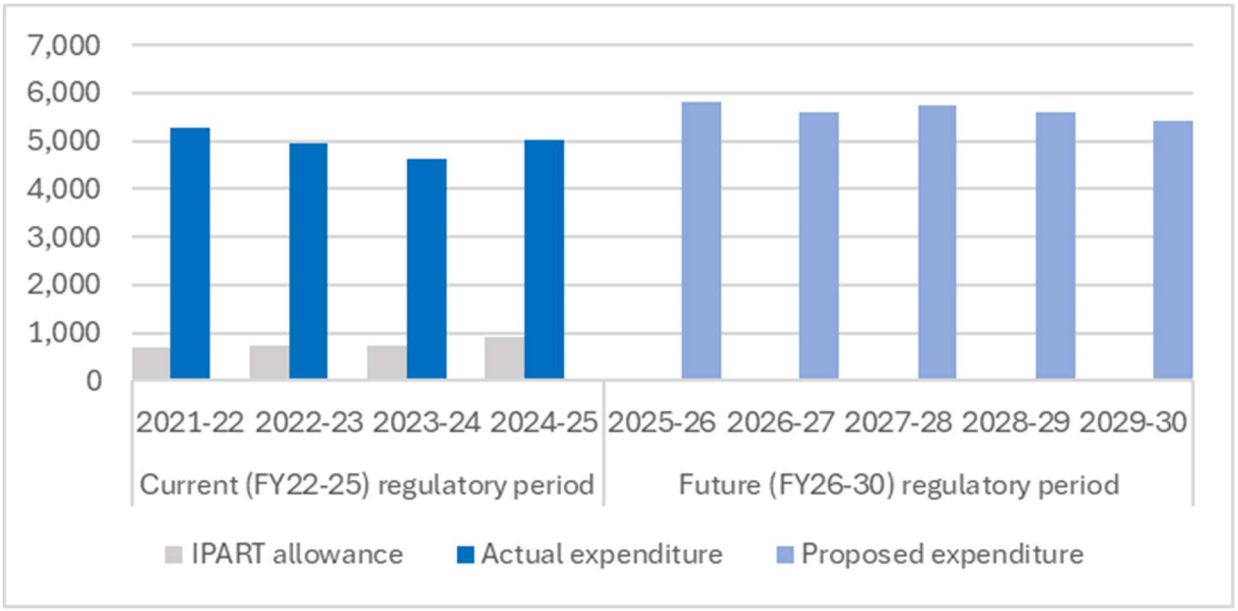

Figure 8: W02-01 Groundwater quantity monitoring operating expenditure ($000, 2024-25)

Table 10: W02-01 Current period capital expenditure and proposed costs ($000, 2024-25)

W02-01 Capital Expenditure	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater quantity monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance - WNSW	4,638	4,671	4,538	4,478					
Actual expenditure - WaterNSW	0	1,257	589	4,377					
Proposed expenditure - WNSW					4,215	4,236	4,219	4,244	3,990

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

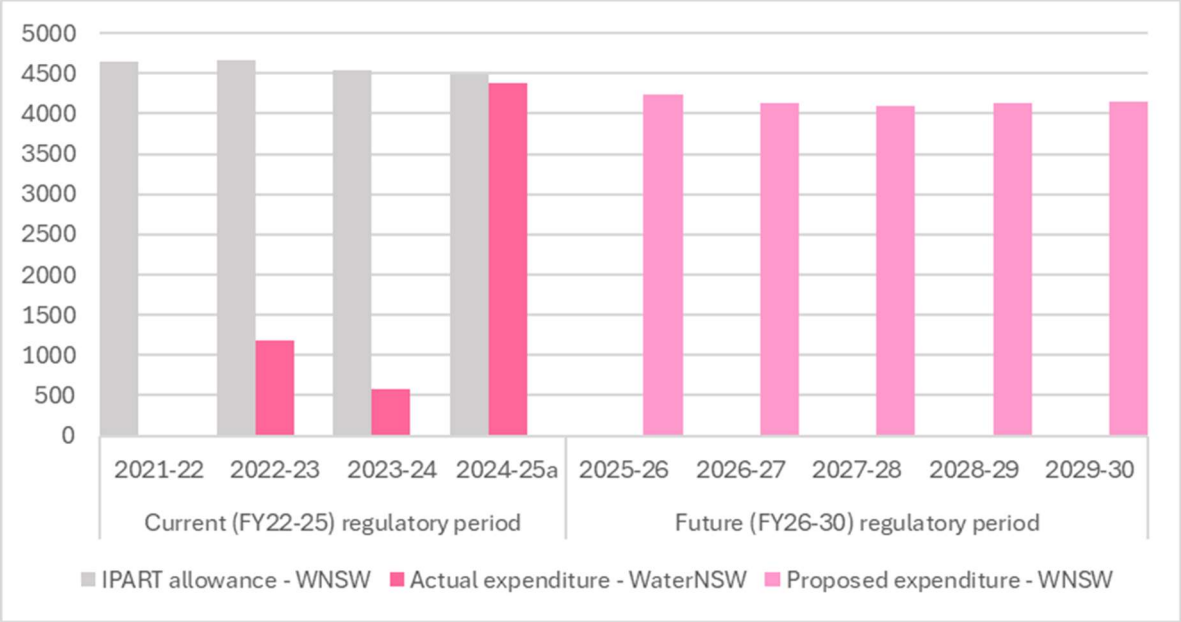

Figure 9: W02-01 Groundwater quantity monitoring capital expenditure ($000, 2024-25)

Why our actual expenditure is higher or lower than the IPART allowance in the current determination period

Operational expenditure for the current determination period across the groundwater monitoring codes W02-01 and W02-02 is above the total IPART allowance for these codes. The primary reason behind this is due to the extent of monitoring required, as set out in the Roles and Responsibilities Agreement, requiring a larger amount of work than was envisaged when the submission was made for the current determination.

Capital expenditure for the current determination period for the groundwater monitoring code W02-01 is below the IPART allowance over the determination period. The primary reason for the under spend involves difficulties with site access due to wet weather, flooding and COVID restrictions. This hampered our ability to progress with on ground works and with being able to continue with the necessary condition assessment program for the bores. The condition assessment information will be used to continue to inform and, in collaboration with the department, target decisions regarding the renewals and refurbishments and enable WaterNSW to further develop its delivery program.

Current period performance

This activity met **0% (0/3)** of its output measures and performance indicators for this period, as of financial year 2022/23. Neither the output measure nor performance indicators are expected to be met by June 2025.

This is mainly due to conditions such as flooding and COVID-19 restrictions, which impacted on being able to safely access water monitoring sites. For example, the period from July to December 2022 was marked by unprecedented wet weather events across most of NSW, resulting in large inflows, extended periods of high streamflow and extremely wet ground conditions. The groundwater level monitoring program was substantially impacted by unprecedented wet weather conditions and the COVID-19 travel restrictions during the current determination period. This affected both manual and telemetered site visits. Visit frequency was achieved for 54% of sites, and data loss for telemetered sites was kept under 1%. However, 23% of pipes missed consecutive visits. Efforts are ongoing to enhance data capture and prioritise site visits during adverse conditions, with pilot programs and process reviews underway to mitigate future disruptions.

Condition assessment of the groundwater monitoring network indicates 37% of bores are currently in need of refurbishment or replacement, and of these, more than 25% have exceeded their effective life. Overall integrity of the network is significantly impacted by these older bores, therefore clearing the large backlog of works will take some time. See the current period performance against output measures and performance indicators in Table 11 below.

Table 11: Current period performance against output measures and performance indicators

Output Measure	Performance Indicator	Comment
OM15 - Number of water monitoring sites: Forecast = 4,384 **Not met in FY22/23 (3,997 out of 4,384)**	Sites in acceptable condition % of replacement cost of monitoring sites in condition grade 2 or better = 95% **Not met in FY22/23 (63%)**	3,997 actively monitored groundwater stations were reported in 2022-23. Condition assessment of the groundwater monitoring network indicates 37% of bores are currently in need of refurbishment or replacement, and of these, more than 25% have exceeded their effective life. Overall integrity of the network is significantly impacted by these older bores, therefore clearing the large backlog of works will take some time.

Output Measure	Performance Indicator	Comment
	% of level or pressure data with a quality code better than 40 = 95% **Not met in FY22/23 (90.1%)**	

Proposed services and costs for the 2025 determination period

WAMC's proposed water monitoring activities for the 2025-2030 regulatory period are largely in line with the programs set out in the Roles and Responsibilities Agreement between the department, WaterNSW and NRAR. The exception is two new additional programs involving:

- the expansion of water quality monitoring (see W02-02 for detail). Most costs associated with this program are included in the department's forecast for W02-02, however $132,000 per year of costs have been included in W02-01 as part of WaterNSW's cost forecasts due to the close alignment of the quality and quantity activity for these costs.
- monitoring using deepwater bores in the NSW coal basins to better understand the impacts of extraction on these water sources. Costs of monitoring the deeper bores over the 2025 determination period are forecast to decrease to an average of $170,000 per year as we move to an operational monitoring routine following completion of the acquisition of baseline conditions.

The water data collected through these activities will enable better decision making by government, industry, and the community on the long-term viability of the groundwater resources. WAMC considers these activities to be essential for the sustainable management of precious groundwater resources and to maintain their status as an important economic contributor to the state.

A total of 79 deep monitoring bores will be transferred from the department to WaterNSW. These will supplement the existing knowledge of impacts on water resources across the state adding a focus on the impacts of water take. The ongoing operations and maintenance to manage the bores will now fall under WaterNSW. See a summary of proposed work under this activity in Table 12 below.

DCCEEW and WaterNSW will continue to collaborate on the detailed implementation of these additional programs and how they will integrate within the groundwater monitoring program in the context of available funding and the relative priorities of existing groundwater monitoring activities.

The proposed capital expenditure for groundwater monitoring provides for an ongoing program involving the renewal of groundwater civil works, bore refurbishments and the renewal of hydrometric instrumentation. The proposed capital allowance for groundwater monitoring for the FY26-30 period represents only a very small portion, or around 1% of the asset cost base per annum and even with investment in the refurbishment of high-priority bores only, it is likely that some bores will still fail and become unusable. (Based on an average depth of 48 metres per bore and a replacement cost of $1500 per metre, the estimated replacement cost of the active bores is around $303 million).

Part of the civil works component includes the continuation of the condition assessment program for the bores. Whilst the condition assessment program has been hindered in the current determination period, the information is used to continue to inform and, collaboratively target decisions regarding the renewals and refurbishments. It is envisaged that detailed programs will be developed for the refurbishment and renewal portions of the work with WaterNSW expecting to go to tender before the end of 2024 for bore refurbishments.

The proposed capital allowance for groundwater monitoring for the FY26-30 period also applies to the renewal of the groundwater hydrometric instrumentation including data loggers. Around 400 of the 832 data loggers also have telemetry while non-telemetered data loggers need to be manually downloaded.

Proposed efficiencies

Data and systems improvements as outlined in the Overheads narrative (Attachment G) will deliver efficiencies in this activity, including through:

- continued pursuit of model automation and technical innovation, particularly when the benefits of the Digital Business Improvement Strategies investment in data quality and management are realised
- collaboration with State and Commonwealth Government agencies to share knowhow and develop standard and streamlined approaches to modelling
- business improvements which target process efficiencies.

We estimate that efficiencies of around $5.6 million per year will be realised across the department, WaterNSW and NRAR, and more broadly, to customers. Efficiencies that contribute to this forecast annual saving include:

- Internal productivity - $4.4 million
- Customer benefits - $870,000
- Reduced contractor expense - $350,000.

Generally, data and system improvements and resulting efficiencies can be described as:

- Information systems uplifted and access centralised – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- Ensuring data is accurate and of high quality - reliable water information, saving staff time when delivering on statutory and water management objectives
- Improve and automate access to multiple data streams - enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W02-01 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis. Streamlining will also reduce reliance on contingent labour which is estimated at 5 or

more FTE of resource effort within the Department. This efficiency will support the maintenance of a groundwater monitoring network to inform water management.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- Water Management Act 2000: sustainable groundwater resources, groundwater quality to be maintained
- Aquifer interference policy: appropriate management of impacts arising from any aquifer interference activities
- Groundwater Strategy Action 1.4 “Protect groundwater quality within natural limits”
- Groundwater Strategy Action 1.3.3 for a framework for water resource monitoring, water data collection and analysis, water communications and environmental data management (the Water Monitoring Framework, or WMF) for coal basins areas and coal seam gas areas of NSW.
- The National Water Initiative renewal has a strong emphasis on water quality. This national policy approach is currently in development.

Table 12: Proposed W02-01 activities for the 2026-30 determination period include:

Description	Proposed activity for the 2026-30 regulatory period	Driver for any proposed changes	Delivery agency
Water level monitoring Development of a detailed groundwater level monitoring strategy and plan, and a review of the groundwater network	The program continuing as is.	Data is required to inform impacts, management, and WSP implementation.	WaterNSW
Expanded deep monitoring bore network Monitoring of Groundwater levels from water use and in coal basins.	Expansion of groundwater level monitoring to manage impacts of groundwater extraction. Proposed costs are for WaterNSW operation and maintenance of water level monitoring only.	WaterNSW is to take ownership of the network and deliver the service.	WaterNSW
Review of groundwater network to inform RRA schedule. Keeping the network current, allowing for asset	The program continuing as is.		The department

Description	Proposed activity for the 2026-30 regulatory period	Driver for any proposed changes	Delivery agency
changes and a risk-based approach to needs.			
Team training on monitoring techniques, such as artesian GAB bores.	Knowledge and skills need to be expanded and transferred across multiple staff for succession planning to account for staff retirement/leave/succession. Step change increases include 5-6 WaterNSW staff for 3 days	Very specialized skills and knowledge are required, distribution to support an understanding of the data specification and monitoring operations.	The department /WaterNSW
Interferometric Synthetic Aperture Radar (InSAR) subsidence studies. Monitoring of land compaction in major alluvial aquifers every 5 years and assessment of ongoing impact of groundwater pumping from irrigation in high use alluvial aquifers to inform resource management using InSAR. Delivered in 2021-25 under a different funding source.	The program continuing as is.		The department
Subsidence markers maintenance and survey. Monitoring via surveying of subsidence markers sites in the Namoi jointly with the 5 yearly INSAR subsidence surveys.	Re-survey of baseline survey points once every 5 years and report.	Condition Assessments have identified issues with the stability of existing Survey markers	The department/ WaterNSW

Note: this table includes Groundwater Quantity W02-01 activities and the activities under W02-02 and W02-03 need to be read in conjunction with this.

W02-02 – Groundwater Quality Monitoring

Description

Groundwater quality monitoring helps track groundwater quality over time. It aids in sustainable groundwater management and ensures that groundwater resources are not overexploited. Groundwater monitoring data helps inform of the impact of resource extraction on groundwater systems, groundwater users and ecosystems.

Activities under W02-02 were assigned fully to WaterNSW in the current determination period. While WaterNSW predominantly carries out work under this activity, most of this work is done on behalf of the department. The department is responsible for the network design and monitoring specifications (under the Roles and Responsibilities Agreement, Schedule 6)[2].

The department uses the data to build on existing knowledge of aquifers and aquitards to manage groundwater resources and to manage local water quality impacts. Table 13 below shows the department's costs of delivering groundwater quality monitoring, in addition to the costs incurred by WaterNSW (in W02-01). WaterNSW's costs for this activity are shown in Table 9 as they will be delivered in conjunction with the groundwater quantity monitoring activities under W02-01. An additional $132,000 is included in WaterNSW's costs under W02-01 to support the expansion of groundwater quality monitoring.

The current groundwater quality monitoring program is limited to four small areas of the state:

- Three areas in the areas of high intensity extraction in the Namoi, Murray and Murrumbidgee (output measure OM16). This program involves manual sampling and has been ongoing for over 20 years.
- One area on the coast for salt intrusion near Stuart Point (loggers and manual sampling).

There is also some field salinity probe monitoring (OM17) via in-situ salinity probes as defined by the Roles and Responsibilities Agreement. The section below lists the responsibilities of the department and WaterNSW solely for the purpose of groundwater quality monitoring.

WAMC agency roles in groundwater quality monitoring

The department uses the data collected to inform resource management and risk to groundwater resource. To date there has been insufficient groundwater quality monitoring to assess this constraint on the long-term sustainability of the groundwater resources across the state. Groundwater quality

[2] Roles and Responsibilities Agreement - Schedule 6 - WaterNSW Services relating to groundwater monitoring, surface water quantity (hydrometric) monitoring and surface water quality monitoring

monitoring has been identified as a significant gap by the State Groundwater Strategy and groundwater risk assessments undertaken for the water sharing plans in NSW.

The department

- Develops a State-wide water quality management framework to cover all of NSW. It also includes monitoring groundwater quality for the expanded deep monitoring bore network to better understand and manage groundwater resources across the state.
- Sets monitoring requirements and quality standards for data required by the department.
- Provides advice to WaterNSW (technical or strategic).

Water NSW

- Operates and maintains monitoring networks
- Undertakes the routine groundwater quality monitoring for general network and program specific network, data quality assurance and quality control, enters field and laboratory data into the databases on behalf of the department.
- Manages and maintains the water quality databases and provides access to the department.

Expenditure

Table 13: Current period operating expenditure and proposed costs ($000, 2024-25)

W02-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater quality monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance - the department	0	0	0	0					
IPART allowance - WNSW	3,060	3,142	3,128	3,143					
IPART allowance	**3,060**	**3,142**	**3,128**	**3,143**					
Actual expenditure - the department	210	1,020	1,130	95					
Actual expenditure - WaterNSW	1	2	0	0					
Actual expenditure	**211**	**1,022**	**1,130**	**95**					
Proposed expenditure - the department					1,870	614	622	598	608

W02-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater quality monitoring	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed expenditure - WNSW					0	0	0	0	0
Proposed expenditure					**1,870**	**614**	**622**	**598**	**608**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

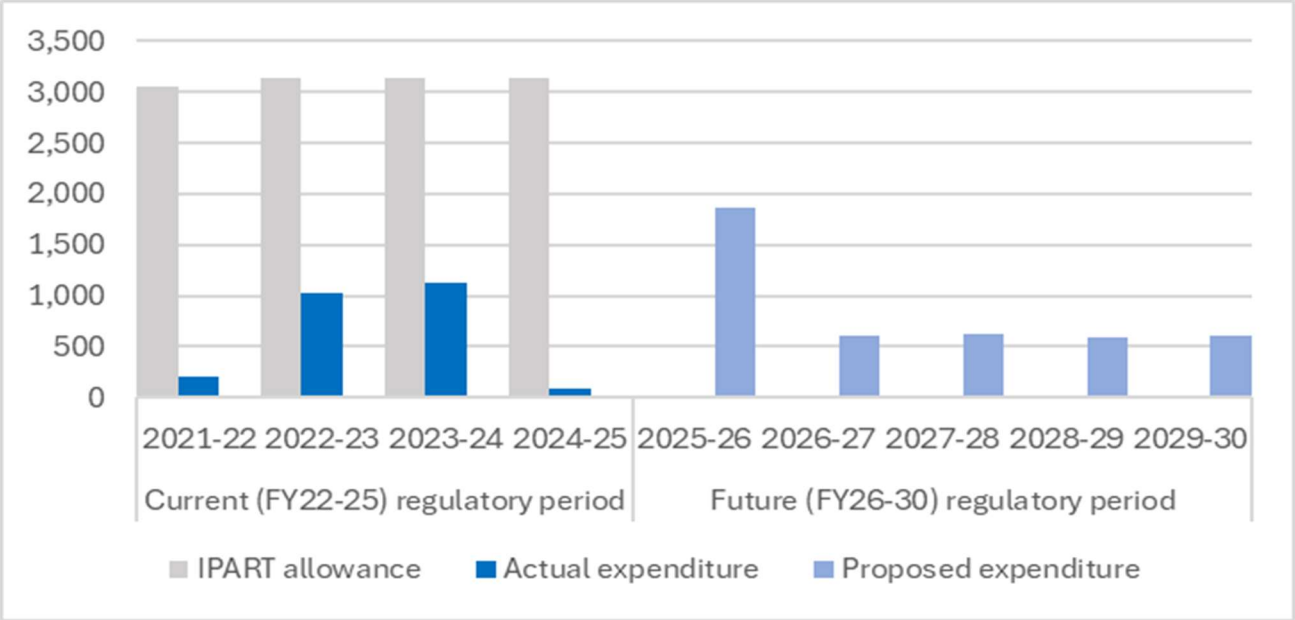

Figure 10: W02-02 Groundwater quality monitoring operating expenditure ($000, 2024-25)

Current period performance

Part of WaterNSW's underspend against groundwater quality monitoring (W02-02) is due to the field-based activity being undertaken concurrently with groundwater quantity monitoring (W02-01). For context, the number of groundwater quality monitoring sites under W02-02 is very small compared to the number of groundwater quantity monitoring sites under W02-01 – 163 sites compared to nearly 5000 sites respectively.

Organisational changes and reporting lines for water monitoring staff during the current determination period also resulted in expenditure predominantly being recorded against the groundwater quantity monitoring activity (W02-01). Given the relative number of sites between W02-01 and W02-02 as outlined above, this has also been reflected in the proposed costs moving forward with the activity effectively being undertaken in conjunction with W02-01.

From July to December 2022, NSW experienced unprecedented wet weather, significantly impacting groundwater monitoring, which requires site visits. As a result, 34% of manual measurements were missed in FY 2023, creating critical data gaps. Efforts are ongoing to improve data capture and prioritise visits during adverse conditions, with pilot programs and process reviews underway.

In FY 2022-23, the groundwater monitoring program met none of its output measures or performance indicators and is unlikely to meet them by June 2025 due to wet weather. While visit frequency was achieved for 54% of sites and telemetered data loss was under 1%, 23% of sites missed consecutive visits. Ongoing efforts aim to enhance data capture and prioritise site visits during adverse conditions to ensure effort is focused where needed most, for example highest risk areas. Ongoing efforts aim to enhance data capture and prioritise site visits during adverse conditions to ensure effort is focused where needed most, for example highest risk areas.

See the current period performance against output measures and performance indicators in Table 14 below.

Table 14: Current period performance against output measures and performance indicators

Output Measure	Performance Indicator	Comment
OM16 - Number of sites visited per year to collect water quality samples: Forecast = 163 (excludes coal seam gas monitoring sites) **Not met in FY22/23 (99 out of 163)** **Note: The new RRA schedule has agreed target of 153 active sites.**	N/A	Some sites not accessible due to wet weather conditions and other work priorities, especially in areas affected by flooding or water quality concerns.
OM17 - Number of samples undertaken per year: Forecast = 360 **Not met in FY22/23 (186 out of 340)** **Note: The new RRA schedule only includes 340 active sites.**	% compliance against monitoring program requirements = 98% **Not met in FY22/23 (67% out of 98%)**	Some sites not accessible due to wet weather conditions and other work priorities, especially in areas affected by flooding or water quality concerns.

Proposed services and costs for the 2025 determination period

For the next determination period, WAMC is proposing an expansion of the existing water quality monitoring program. The expansion would consider all of NSW rather than only the 4 areas currently monitored, as well as the recently completed bores designed to monitor deep groundwater resources in coal basins.

In the last 4 years, the department has secured external funding to carry out a state-wide baseline of groundwater quality, however this funding source is not ongoing. This included a baseline for the new deep groundwater monitoring bores in coal basins which is, to date, only partly complete. The expansion of the program is based on the risk to groundwater resources and assessment against the recently established baseline.

This has meant that there has been no recovery of the prudent costs of delivering these monopoly services and limited ability to embed these activities into existing planning processes for WAMC over the current determination period (2021-2025).

For the next determination period, WAMC is proposing that these additional activities be funded through the IPART process with costs to be recovered from customers. WAMC also intends to shift delivery of these activities to WaterNSW on behalf of the department for the benefit of WAMC and customers. These proposed programs are:

- Review of existing groundwater quality program and adaptation as required
  - based on assessment of data collected for the areas of intensive monitoring and now published, the department will review the existing program
- Expand the water quality monitoring programs across NSW
  - This initiative aims to enhance the groundwater quality monitoring program across NSW, providing valuable insights into the overall characterisation of groundwater quality and supporting a deeper understanding of key physical processes such as water path, groundwater recharge and risk of salinisation due to extraction induced flow movements. Additionally, it will contribute to ongoing research efforts and benefit various industries. The program will be extended to cover all of NSW, with monitoring frequency determined based on risk and groundwater usage. In the first year, the focus will be on completing the scoping phase, which involves assessing the status of existing bores conducted by WaterNSW and preparing for program delivery. This phase will also include a performance review of the program.
  - Up to 500 bores will require additional testing resulting in additional operating expenditure to perform the management activities. Procedures and new equipment will be set up/procured to complete the sampling and train staff on the new equipment and testing requirements.
- Increase groundwater quality monitoring in higher risk water sources
  - the program aims to implement rigorous groundwater quality monitoring in areas where groundwater use by coal mines has a potential to affect groundwater quality and impacting the groundwater resource. It will continuously track changes in groundwater as a result of water use and water impacts from mining projects. This monitoring is part of the state-wide approach and will provide ongoing data that will be made publicly available, enhancing transparency. There are 79 existing deep monitoring bores in coal basins that will be transferred to WaterNSW (refer to W02-01). These will supplement the existing knowledge of impacts on water resources across the state with a particular focus on the coal basins.

The water quality data collected through these activities will enable better decision making by government, industry, and the community on the long-term viability of the groundwater resources.

WAMC considers these activities to be essential for the sustainable management of precious groundwater resources and to maintain their status as an important economic contributor to the state.

Groundwater quality monitoring also ensures compliance with several legislative requirements, including the Water Management Act 2000, Water Act 2007, NSW Water Monitoring Framework, NSW Aquifer Interference Policy, and the NSW State Groundwater Strategy. The funding envelope for these activities has been estimated based on costs and assumptions estimated by the department and WaterNSW.

See a summary of proposed work under this activity in Table 12 above.

Proposed efficiencies

Data and systems improvements as outlined in the Overheads narrative (Attachment G) will deliver efficiencies in this activity, including through:

- continued pursuit of model automation and technical innovation, particularly when the benefits of the Digital Business Improvement Strategies investment in data quality and management are realised
- collaboration with State and Commonwealth Government agencies to share knowhow and develop standard and streamlined approaches to modelling
- business improvements which target process efficiencies.

We estimate that efficiencies of around $5.6 million per year will be realised across the department, WaterNSW and NRAR, and more broadly, to customers. Efficiencies that contribute to this forecast annual saving include:

- Internal productivity - $4.4 million
- Customer benefits - $870,000
- Reduced contractor expense - $350,000.

Generally, data and system improvements and resulting efficiencies can be described as:

- Information systems and uplifted and access centralised – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- Fix historical data quality - reliable water information, saving staff time when delivering on statutory and water management objectives
- Improve and automate access to multiple data streams - enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W02-02 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis. Streamlining will also reduce reliance on contingent labour which is estimated at 5 or

more FTE of resource effort within the Department. This efficiency will support the maintenance of a groundwater monitoring network to inform water management.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- Water Management Act 2000: sustainable groundwater resources, groundwater quality to be maintained.
- Aquifer interference Policy: no more than minimum impacts arising from any aquifer interference activities.
- Groundwater Strategy Action 1.4 “Protect groundwater quality within natural limits”.
- Basin Plan Matter 12: requirement to monitor and report groundwater quality across the Basin Plan area to ensure groundwater quality doesn’t deteriorate and retain its beneficial use.
- Coal Basin Bore Water Monitoring Framework for a framework for water resource monitoring, water data collection and analysis, water communications and environmental data management (the Water Monitoring Framework, or WMF) for coal basins areas.
- The National Water Initiative renewal has a strong emphasis on water quality. This national policy approach is currently in development.

W02-03 – Groundwater Data Management and Reporting

Description

This activity is the collection and maintenance of groundwater data from the groundwater monitoring network that allows the data to be effectively used for management and planning purposes and allows improvements in the monitoring network to be identified.

The groundwater databases have systemic issues that need to be resolved and data corrections to be made. The department has the technical capacity to support the understanding of the data itself. WaterNSW relies on the department's groundwater expertise to interpret the data and identify and resolve ongoing issues with the ground water databases.

In the next period, only the department is proposing costs under this activity. Proposed costs cover specialist advice from groundwater subject matter experts to ensure that data is stored and recorded in systems accurately, and systems are able to capture all information required for the provision of high-quality data products to internal and external data users.

Whilst activities under W02-03 were assigned fully to WaterNSW in the current determination period, the department is the main user of groundwater data.

Expenditure

Table 15: Current period operating expenditure and proposed costs ($000, 2024-25)

W02-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater data management and reporting	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance - the department	0	0	0	0					
IPART allowance - WNSW	0	0	0	0					
IPART allowance	**0**	**0**	**0**	**0**					
Actual expenditure - the department	1,342	396	50	50					

W02-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Groundwater data management and reporting	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
Actual expenditure - WaterNSW	0	0	0	0					
Actual expenditure	**1,342**	**396**	**50**	**50**					
Proposed expenditure - the department					200	120	120	121	120
Proposed expenditure - WNSW					0	0	0	0	0
Proposed expenditure					**200**	**120**	**120**	**121**	**120**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

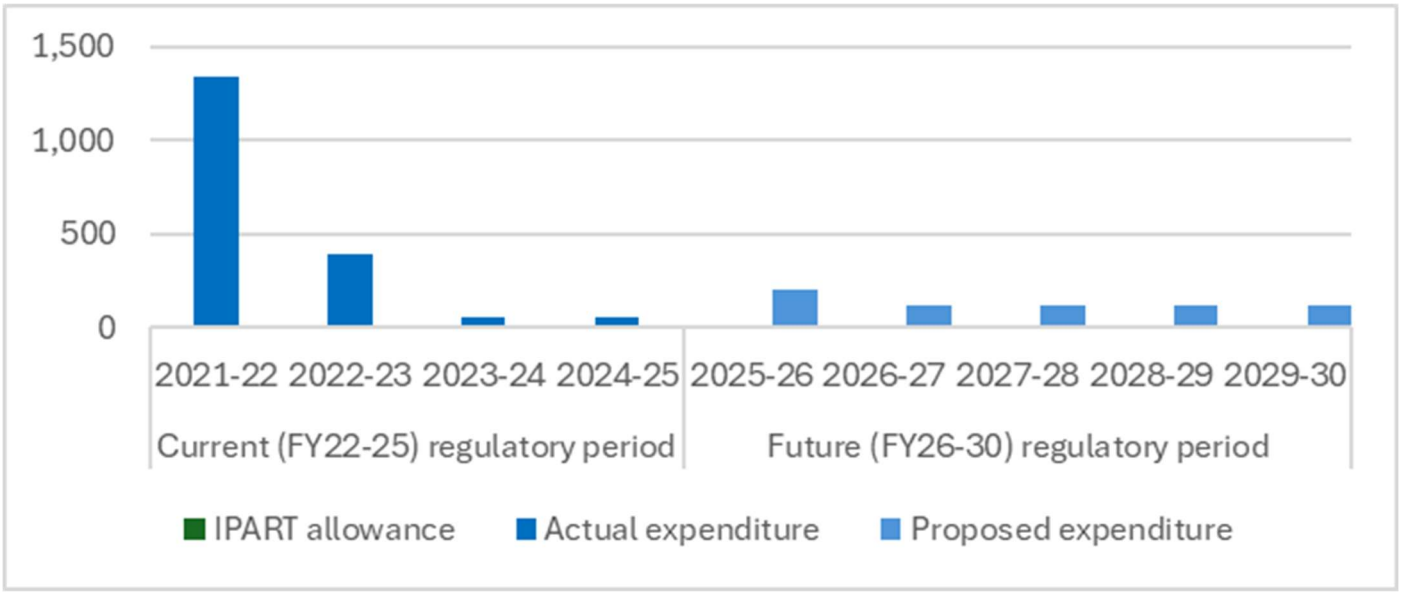

Figure 11: W02-03 Groundwater data management and reporting ($000, 2024-25)

Current period performance

As of financial year 2022/23, this activity met 50% (1/2) of its output measures and performance indicators for this period. WAMC expects to meet both the output measure and performance indicator by June 2025. The groundwater monitoring program was substantial impacted by unprecedented wet weather conditions and the COVID-19 restrictions during the current determination period. This affected both manual and telemetered site visits. Visit frequency was achieved for 54% of sites, and data loss for telemetered sites was kept under 1%. However, 23% of pipes missed consecutive visits.

Efforts are ongoing to enhance data capture and prioritise site visits during adverse conditions, with pilot programs and process reviews underway to mitigate future disruptions.

See the current period performance against output measures and performance indicators in Table 16 below.

Table 16: Current period performance against output measures and performance indicators

Output Measure	Performance Indicator	Comment
OM18 - Number of sites subject to data management: Forecast = 4,384 (excludes deep water monitoring bores in coal basins) **Not met in FY22/23 (3,997 out of 4,384)**	% of sites where data is available daily = 90% **Met in FY22/23 (91.5% out of 90%)**	3,997 groundwater sites had data collected in 2022-23. 4,538 groundwater sites had data collected in 2021-22. 91.5% of sites had data available daily.

Proposed services and costs for the 2025 determination period

WaterNSW 's data management costs are included in the groundwater quantity activity, W02-01.

The department will continue to contribute to groundwater data management because reliable and transparent data are key to resource management, groundwater model development, groundwater trades approvals, water sharing plan information and groundwater resource management.

The department will contribute to:

- Ongoing data improvement.
  - the department will assist WaterNSW is correcting data by either identifying the data while using it and documenting a data correction request and providing subject matter expertise to ensure data is stored and recorded in systems accurately.
- Providing groundwater expert knowledge on groundwater portal specifications and coordination for completeness of data, metadata, appropriateness of reporting and analytics.
- A spatial library of groundwater documentation, to provide more responsive information and service to customers and stakeholders.

Proposed efficiencies

The department has spent significant external funds since 2020 to improve groundwater data systems. The benefits have been an immense efficiency saving in time by enabling access to accurate data with links between different databases. Being able to map hydrographs or compare locations has been highly beneficial and time saving. These benefits extend beyond WAMC and benefit industry, consultants, academics and other people wanting to access the data which currently is not available self-serve and is mostly not discoverable.

Generally, data and system improvements and resulting efficiencies can be described as:

- Information systems and uplifted and access centralised – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- Improve data quality - reliable water information, saving staff time when delivering on statutory and water management objectives
- Improve and automate access to multiple data streams - enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W02-03 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis. Streamlining will also reduce reliance on contingent labour which is estimated at 5 or more FTE of resource effort within the department. This efficiency will support the maintenance of an extensive monitoring dataset and database to inform water management.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- Water sharing plan implementation: data management is crucial to trades and approvals, groundwater models, groundwater resource management and implementation of rules of water sharing plans
- Groundwater trade principles under the Water Management Act
- Groundwater models use the data and rely on it
- Confidence on how decisions are made and importance of groundwater management for customers – see What matters to our customers: Insights Report
- NSW Water Strategy and NSW Groundwater Strategy Strategic priority 3.
  - Action 3.1. Develop the groundwater components of a water knowledge plan. including data, systems, tools and information products required
  - Action 3.2. Better share and integrate groundwater information data, systems, tools and information products required

W03 Water take monitoring

Refer to the metering charges chapter 9 of the WAMC pricing proposal for information regarding W03 Water take monitoring.

W04-01 Surface water modelling

Description

This activity ensures the development, upgrade and application of surface water resource management models for use in water planning. This activity assesses performance in terms of statutory requirements, interstate agreements, regional water supply optimisation and third-party impacts on NSW stakeholders. Modelling is inwardly dependent on data from W05-01 and W02 activities. All planning functions, including WSPs, depend on modelling outputs to meet statutory obligations. See Figure 23 or Figure 25 in the W06-01 and W06-02 narratives respectively to understand this relationship.

Expenditure

Table 17: Current period operating expenditure and proposed costs ($000, 2024-25)

W04-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Surface water modelling	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	4,251	4,221	4,191	4,162					
Actual expenditure	4,930	4,192	4,723	4,723					
Proposed expenditure					5,268	5,113	5,329	5,265	5,319

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

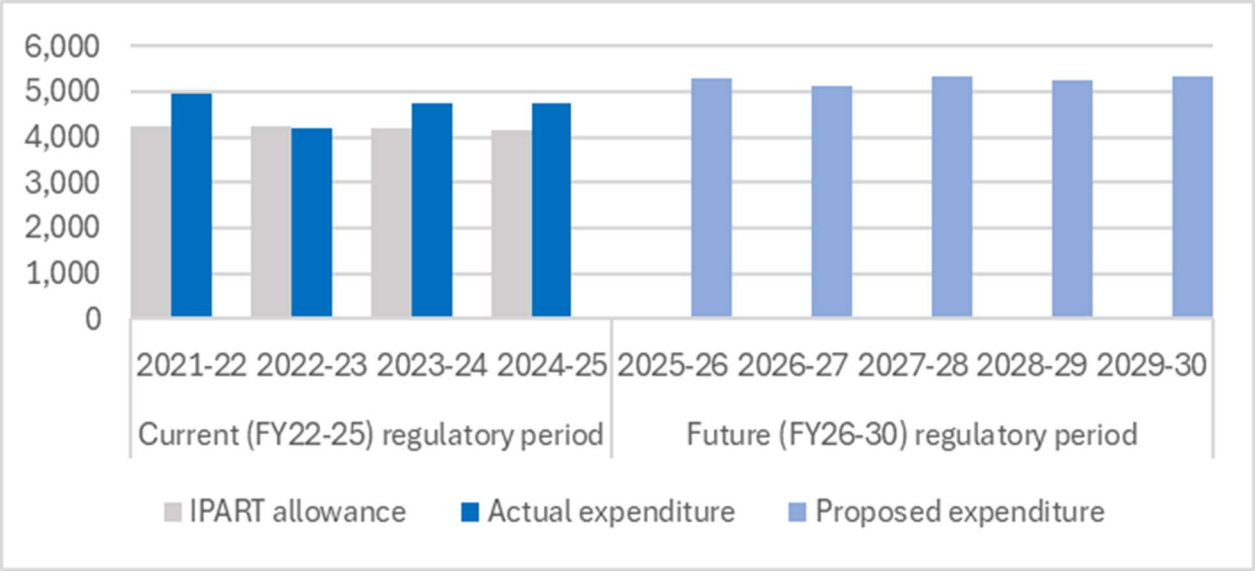

Figure 12: W04-01 Surface water modelling operating expenditure ($000, 2024-25)

Current period performance

There has been an overspend in all years of the current period. The challenges in securing the necessary technical expertise in a limited market has led to some recruitment challenges and required the use of external contract labour which has increased costs. The use of these resources has not always been cost-effective in achieving all deliverables, due to lower internal expertise and lead times in training and developing staff.

The internal resources of the surface water modelling team deliver to a high standard in a cost-effective way. An in-house specialty modelling team is a low-cost vehicle to efficiently share access to specialised staff with niche modelling skills. These staff can then maximise and reuse existing models and experiences to advise and inform the activities of other WAMC activity areas. In addition to the inherent efficiencies of this kind of specialised internal service pool, the unit cost of internal staff is much lower than using equivalent consultants or contingent workers. For example, an internally provided principal modeller costs 53% of a like-for-like contingent worker with on-costs, and the costs of getting a similar person from a consultancy is higher again.

Performance over the current period has been strong, with this activity having met 100% (3/3) of its output measures and performance indicators as of financial year 2023-24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 18 below.

Table 18: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM19 - Five documented model performance reviews per year against published guidelines. **Met**	% models reviewed and reported against accuracy and reliability criteria set out in modelling guidelines = 100% **Met**	5 model performance reviews have been completed per year of the current period. All models have been reviewed and reported against accuracy and reliability criteria set out in modelling guidelines.
OM20 - 15 models per year updated with additional input data. **Met**	N/A	There are currently models in 28 systems and all of them are being updated annually to service either the diversion compliance programs or regional water strategy work. We are confident that we have exceeded this measure.

Proposed services and costs for the 2025 determination period

Legislative drivers remain unchanged, and all existing activities remain key tools to address the activity aims. There is a forecast increase in operating expenditure. This reflects the costs of additional modelling required to respond to any stakeholder concerns related to the proposed rebuild of floodplain harvest models (W06-03) and inland water sharing plans (W06-02) in those years.

Proposed efficiencies

Where possible efficiencies will be sought. These include:

- continued pursuit of model automation and technical innovation, particularly one the benefits of the Digital Business Improvement Strategies investment in data quality and management are realised
- collaboration with state and federal government agencies to share knowhow and develop standard and streamlined approaches to modelling
- business improvements that target process efficiencies.

Data and systems improvements, as outlined in the Overheads narrative, will deliver efficiencies in this activity. Efficiencies are quantified across all the department, WaterNSW and NRAR, and more broadly, to customers as $5,600,000 per year.

Efficiencies that contribute to this forecast annual saving include internal productivity ($4.4m), customer benefits ($0.87m) and reduced contractor expense ($0.35m).

Generally, data and system improvements and resulting efficiencies can be described as:

- uplift information systems and centralise access – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- fix historical data quality-reliable water information, saving staff time when delivering on statutory and water management objectives
- improve and automate access to multiple data streams - enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W04-01 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis and delivery of work activities, and reduced error caused re-work. This efficiency will deliver improved hydrologic analysis, model building and scenario running to inform, policy, planning, science and environmental activities.

Activity drivers

The level of activity, and thus expenditure, is strongly driven by dependent WAMC activities rather than as a function of internal decision making and targets. Below are the drivers of the activity cost that make this activity necessary:

Legislative requirements

Water Management Act 2000:

- Chapter 2: Part 1, Part 3 Divisions 3, 8 for:
  - specification of scenarios modelled.
  - LTAAEL (Long Term Average Annual Extraction Limit).
  - water balance assessments and performance evaluation.
  - stakeholder consultation.
  - explicit reference to WSP model scenario in statutory WSPs.
- Chapter 8, Part 2, Section 372(b) Functions of Ministerial Corporation.
- Division 3, Section 10 Review of work and activities of the department by the Natural Resources Commission (NRC).
- Division 8, Section 44 Periodic auditing of management plans by the NRC.

Water Act 2007 (Cth):

- Murray-Darling Basin Plan:
  - Chapter 6 Water that can be taken.
  - Chapter 8 Environmental Watering Plan.
  - Schedule 1, Schedule B, Basin Salinity Management

  - Chapter 9 Basin Plan, Water Quality and Salinity Management Plan
  - Chapter 12, Part 2 Water Trading.
- SDLAM (schedule 6)
- Basin Plan review

National Water Initiative Pricing Review

Part 3 of the NWI pricing principles specify relevant principles for recovering costs of water planning and management activities:

a. *collecting and analysing data to gain a better understanding of the levels of extractions as well as the potential implications of extraction for the water system and managing this data* - a core feature of our models is describing the level of extractions and the physical processes behind the level of extractions that can be expected under a wide range of climatic conditions. The models also describe how extractions influence future water security and environmental outcomes.

b. *developing policies to manage the resource, including managing the interstate sharing of the resource* - models inform the development of nearly all water management policies through providing an understanding of the likely outcomes of particular policy ideas. This includes interstate sharing of resources, with the addition that all other Murray Darling Basin states also use models to inform negotiating positions, so it is normally critical for negotiators to have rapid access to high quality advice to get quality outcomes for NSW water users and NSW environmental outcomes.

c. *developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use* - the use of models is foundational in preparing both NSW Water Sharing plans and related Commonwealth Water Resource Plans. Under the Basin Plan, key features such as the baseline diversion limit and the sustainable diversion limits are set directly from models

d. *implementing these plans/strategies/frameworks and monitoring compliance against the plans* - models are used to inform a variety of activities to implement plans, but the most significant area of activity is in the monitoring of compliance through cap on diversion, Sustainable Diversion Limit (SDL) and LTAAEL annual usage assessments.

e. *undertaking capital works, such as the modification of weirs to achieve environmental outcomes* - the planning models created by this WAMC activity area are routinely used alongside other modelling tools such as hydraulic models to design the features and capabilities of new and modified structures and in describing how they will be utilised in ongoing water management operations to best effect. We typically do this work on a cost recovery basis from the specific project being considered or increasingly we facilitate the work being done by external consultants using a copy of our model. Even though we are not directly funded for this work through this WAMC code, we generate efficiencies by having base models accessible and ready to use in the infrastructure programs.

f. *administering water entitlements, compliance, metering and trading systems* - planning models are normally only applied on an ad-hoc basis to this activity area and it is more common that experienced modelling staff are asked to provide advice and other forms of analysis in support of discrete activities as they arise.

Stakeholder engagement / feedback

- Water security and reliability, including climate change
- Concerns for environment – ecology and hydrology
- Confidence in how decisions are made and enforced

Other program and policy drivers

- NSW Floodplain Harvesting (FPH) Policy
- Regional Water Strategy Program
- Non-urban metering policy
- Compliance Compact
- Open data and public information products
- Environmental flow protection
- Basin Salinity Management Strategy
- Reviews, audits and inspections

W04-02 Groundwater modelling

Description

This activity undertakes the development, upgrade, and use of groundwater resource management models for water sharing and management applications, and for resource impact and water balance assessments.

Groundwater modelling activities involve combining a variety of data sources to create a 3-dimensional conceptual model representation of rivers and the water bearing geological subsurface that constitutes the water resource of an area, converting this into a calibrated numerical model before performing scenarios using the model.

This activity is inwardly co-dependent on data and project work from W04 and W02 activities. W04-02 activities support W02 activities and all planning functions, including water sharing plans (WSPs), and these functions depend on modelling outputs to meet statutory obligations and to provide knowledge and insights about the functioning of the groundwater and surface water resources modelled or audited.

Expenditure

Table 19: Current period operating expenditure and proposed costs ($000, 2024-25)

W04-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Ground water modelling	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance	1,279	1,271	1,262	1,253					
Actual expenditure	1,240	1,077	910	910					
Proposed expenditure					1,564	1,507	1,582	1,560	1,579

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

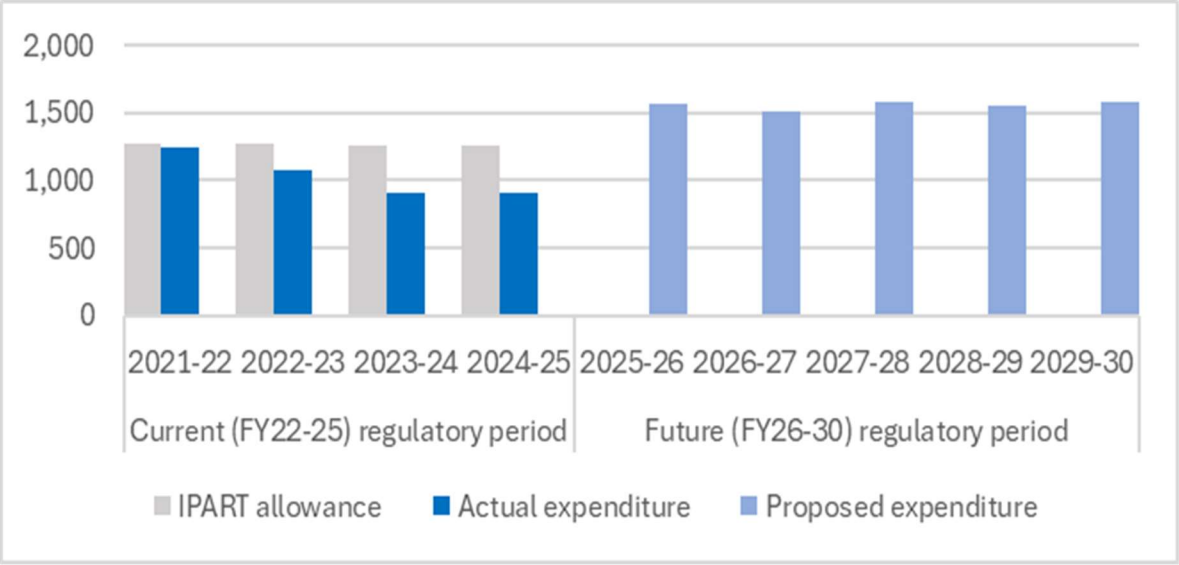

Figure 13: W04-02 Groundwater modelling 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The current period included a lower level of funding than had been estimated to deliver the necessary outputs, and the resulting loss of internal expertise led to increased reliance on external resources.

The small overspend in years 2021-2022 and 2022-2023 resulted from the use of external contingent workers and consultants. We had trouble in obtaining groundwater modelling resources, including consultants, due to the scarcity of resources arising from competing demand from the mining and consulting sectors. Limited and mostly lower-skilled resources were carried within the department. External contractors were used which increased costs. The delivery by costly external consultants, when engaged, achieved poor outcomes, resulting in under-delivery of modelling, unfit models requiring significant rework and delays.

In the second half of the current period, challenges in securing resources led to an underspend and consequent significant under-delivery against relevant measures and indicators. Following internal structural changes in 2024, recruitment is now underway and the planned increase in resourcing should lead to improved performance. Efficiencies that commenced in the current period will be carried over to the next period and are explained below.

This activity met 0% (0/3) of its annual output measures and performance indicators in the financial year 2023-24. This was also the case for the financial year 2022-23, but all measures were 100% met in the financial year 2021-22 when more resources were available. The reason for not meeting these measures in recent years was due to resourcing issues as outlined above. Under-resourcing remains a risk to these output measures and performance being met by June 2025. See the current period performance against output measures and performance indicators in Table 20 below for more information.

Table 20: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM21 - Number of documented model performance reviews during the year: Output = 4 per year **Not Met (2/4)**	100 % models meeting AGWMG (2012) criteria **Not Met (50%)**	2 model reviews out of the annual target of 4 have been completed for the financial year 2023-24. The work to achieve target model performance reviews and extensions is ongoing according to a predetermined schedule, but due to resourcing issues will be significantly delayed in achieving keeping all models current.
OM22 - Number of models updated with an additional year of climate and hydrologic data: Output = 2 per year **Not Met (1/2)**	N/A	1 model review out of the annual target of 2 has been updated for the financial year 2023-24. The delay is the result of resourcing issues, but the data extension on other models are underway.

Proposed services and costs for the 2025 determination period

There is a forecast increase in operating expenditure, and this reflects the costs of additional modelling required to meet the legislative drivers, new activities and respond to stakeholder concerns and expectations.

The legislative drivers remain similar, and all existing activities remain key tools to address the activity aims. New activities such local-scale and climate change modelling are added to the existing activities for the 2026-30 period. A substantial improvement in the way we model is required to meet current needs and expectations. More complex models will require a higher level of skill to maintain.

We have qualified the model functionality to be built into future model versions, which includes groundwater and surface water interaction, 3D analysis and presentation of models, local and excessive drawdown, adaptive timesteps, particle transport, improved prediction and uncertainty analysis.

New drivers also include building and maintaining the quality and trust in our models and their role in achieving environmental sustainability, water security and socio-economic water outcomes. We also intend to make our modelling products available online, maximising their benefit and to modernise and update obsolete groundwater modelling assets. Technology has shifted, data is expected to improve, but most of our models have not. This work was not adequately funded and resourced during the current period and some models are becoming obsolete and require a comprehensive rebuild and modernisation.

Ideally 12 FTE would be desirable to perform and meet the legislative requirements for all models in all model areas. However, as user charges are finite, we propose a more moderate level of groundwater modelling activity. There are 6.2 FTE approved for the 2021-25 period, and 7.3 are requested for the

2026-30 period. The requested level of resourcing can deliver basic modelling for the higher priority model areas, meeting some legislative requirements. In this case, the current model functionality will be maintained, leaving aspirational modelling initiatives for future years.

Proposed efficiencies

Several efficiency measures, to improve processes during the current period, were implemented. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy. These improvements will continue and are reflected in forecast costs for the future period.

Efficiencies continuing from the current determination period include:

- new modelling guidelines with respect to uncertainty analysis and groundwater modelling methods, resulting in new workflows in performing groundwater modelling.
- The parameter estimation iterative ensemble smoothing (PEST-IES) modelling efficiency which allows faster calibration on servers or, supercomputers. Adopting this efficiency allows less of a reliance on supercomputers or alternatively, makes supercomputing resources even more efficient. This learning is transferred to other models. W04-02 pioneered the use of supercomputing resources and are pioneering the use of AI assistants to progress efficiency measures and to mitigate under-resourcing.
- a new FEFLOW software modelling interface, which is being adopted into the modelling workflow that automates model analysis and outputs, saving manual work effort.
- building conceptual geological models using LEAPFROG software which allows for numerical rebuilds, better analysis and faster error correction and improved efficiency also within W02 activities.
- several new python codes for processing model results have been written and pre-existing codes rewritten for readability and keeping them current with modern python libraries, which provide a more efficient and less resource-intensive method of processing the results.
- successively merging the 13 Murray-Darling Basin Valley models into 8 models, which will reduce the number of models that require maintenance.
- working towards modelling automation, including automatic reporting. The plan for this efficiency is to have modelling made progressively less labour intensive. This is to be achieved using code and other technologies. This efficiency would reduce current manual processing, as data quality improves through the Business Improvement Strategies.

Data and systems improvements, as outlined in the Overheads narrative, will deliver efficiencies in this activity. Efficiencies are quantified across the department, WaterNSW and NRAR, and more broadly, to customers as $5,600,000 per year.

Efficiencies that contribute to this forecast annual saving include:

- internal productivity - $4,400,000
- customer benefits - $870,000

- reduced contractor expense - $350,000.

Generally, data and system improvements and resulting efficiencies can be described as:

- uplift information systems and centralise access – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- fix historical data quality-reliable water information, saving staff time when delivering on statutory and water management objectives
- improve and automate access to multiple data streams - enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W04-02 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis and delivery of work activities, and reduced error caused re-work. Streamlining will also reduce reliance on contingent labour which is estimated at 5 or more FTE of resource effort within the department. This efficiency will deliver improved groundwater analysis, model building and scenario running to inform, policy, planning, science and environmental activities.

Activity drivers

The below drivers of the activity cost include changes that make this activity necessary, including to fulfil the principles and objects of the Water Management Act.

Legislative requirements

Water Management Act 2000:

- Chapter 2: Part 1, Part 3 Divisions 3, 8 for:
  - specification of scenarios modelled.
  - LTAAEL (Long Term Average Annual Extraction Limit)
  - water balance assessments and performance evaluation.
  - stakeholder consultation.
- Chapter 8, Part 2, Section 372(b) Functions of Ministerial Corporation.
- Division 3, Section 10 Review of work and activities of the department by the Natural Resources Commission (NRC).
- Division 8, Section 44 Periodic auditing of management plans by the NRC.

Water Act 2007 (Cth):

- Murray-Darling Basin Plan:
  - Chapter 6 Water that can be taken.
  - Chapter 8 Environmental Watering Plan.

  - Schedule 1, Schedule B, Basin Salinity Management
  - Chapter 9 Basin Plan, Water Quality and Salinity Management Plan
  - Chapter 12, Part 2 Water Trading.
- Basin Plan review

National Water Initiative Pricing Principles

Part 3 of NWI pricing principles specify relevant principles for recovering costs of water planning and management activities:

a. *collecting and analysing data to gain a better understanding of the levels of extractions as well as the potential implications of extraction for the water system and managing this data* – a core feature of our models is describing the available resource, the level of extractions, the physical response to the level of extractions and future water security and environmental outcomes scenarios
b. *developing policies to manage the resource, including managing the interstate sharing of the resource* – models inform the development of nearly all water management policies through providing an understanding of the likely outcomes of policy and management initiatives
c. *developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use* – the use of models is supporting an understanding of sustainable levels of take
d. *implementing these plans/strategies/frameworks and monitoring compliance against the plans* – models can be used to inform plan implementation, including in alluvial resources
e. *administering water entitlements, compliance, metering and trading systems* – groundwater modelling staff are asked to provide advice and other forms of analysis, on occasion.

Stakeholder engagement / feedback

- Water security and reliability
- Concerns for environment – groundwater-dependent ecosystems

Other program and policy drivers

- NSW Groundwater Strategy
- Open data and public information products
- Basin Salinity Management Strategy

W04-03 Water resource accounting

Description

This activity undertakes the collation, analysis, publishing and archiving of water resource accounts and information regarding NSW water resources, for use by external stakeholders and for internal water planning, management and evaluation purposes. Quality assured water accounting data underpins the development, operation and evaluation of water resource sharing and delivery services. This activity is dependent on inputs from W05 activities and, in turn, these data management and analysis services support water modelling, planning, science and environmental activities. See Figure 23 or Figure 25 in the W06-01 and W06-02 narratives respectively to understand this relationship.

Expenditure

Table 21: Current period operating expenditure and proposed costs ($000, 2024-25)

W04-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water resource accounting	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	713	702	690	679					
Actual expenditure	898	1,152	1,273	1,273					
Proposed expenditure					858	840	875	865	874

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

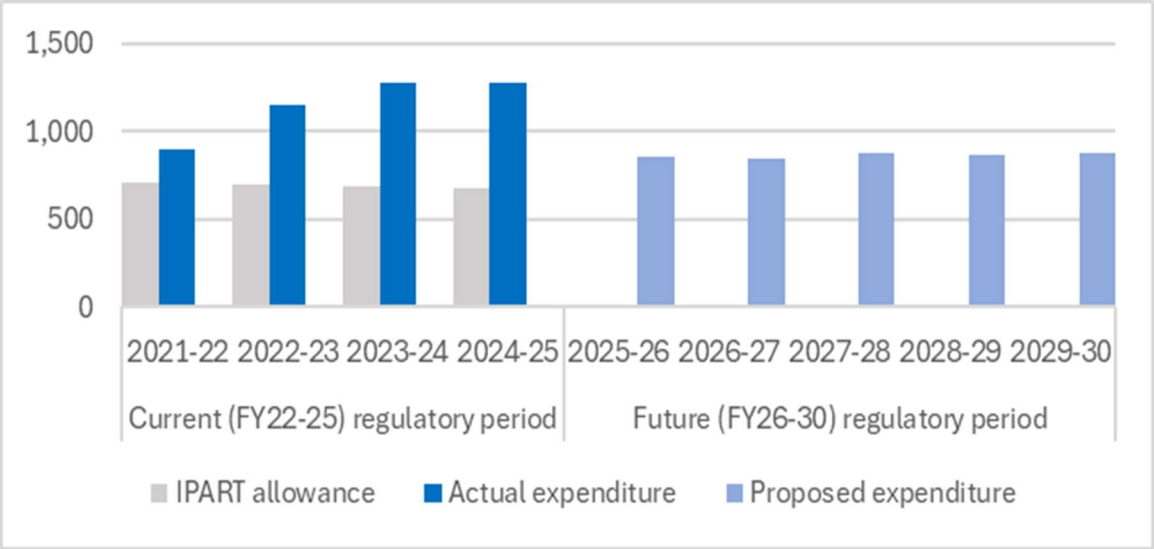

Figure 14: W04-03 Water resource accounting 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The current period overspend is due to activities being carried out that were not forecast at the time of the last IPART submission. These new activities have arisen from new drivers or increased levels of activity, requiring the appointment of a manager. The role of the manager has been to improve the management, oversight and quality of delivery of the following:

- trade support, co-ordination and engagement – ACT / NSW, Water Market improvements, largely driven by reforms stemming from a 2021 review by the Australian Competition and Consumer Commission (ACCC) into water markets in the Murray–Darling Basin
- internal and external data requests including ministerial responses
- support account rules development and monitoring for planning and allocation
- technical support developing and supporting tools for internal use and improved efficiency – AWD (available water determination) calculator, debit limit analysis, groundwater take assessment for basin reporting, groundwater minimum and maximum annual heights
- dashboards – enhance, develop and published new dashboards, increased maintenance and support of dashboards, as the number increases. Support for other department units – Hunter flood repair portal
- support of internal department units with data cleaning, manipulation, reporting and maintenance
- adapting to new technology.

These activities directly improve quality and support open data and transparency for work undertaken by the department.

During the current period, and in addition to publishing annual water resource accounts, dashboards were developed and published for accounting rules, allocations, environmental water shares, held environmental water, planned environmental water, share components, groundwater extractions, trades and utilisation. The dashboards operate on a daily schedule, sourcing, processing and publishing a large number of data updates each day. Resources are required to support the daily workflow and ensure the quality of the data. The systems of daily workflow processing and data management are continually being reviewed and improved. The dashboarding system is also subject to mandatory redesign and updating as a result of the department security and infrastructure system upgrades and enhancements.

Further, water data tools were developed for internal department units including:

- a workbook tool for estimating groundwater usage for basin plan reporting
- a workbook tool for analysing impact of groundwater allocation levels on LTAAEL
- a workbook tool for analysing the impact of debit limit rules on groundwater usage and impacts on LTAAEL
- a portal for extracting annual maximum and minimum levels for groundwater sources and bores
- a python tool to spatially redistributing historical groundwater usage for use in the latest models
- python tools for extracting and preprocessing groundwater model input data.

Data management and processes for the production of the General Purpose Water Accounting Report (GPWAR) have been reviewed and improved. Improvements include:

- implementation of commercial off-the-shelf Water Information System by Kisters (WISKi) as single data repository for all water-accounting data
- replacement of manual water-accounting tool (Quickbooks) with an account statement builder that automatically updates accounts with data stored in the central repository
- development of an Excel add-in that allows direct download of data from WISKI. Data errors can be fixed in Excel and then exported using the tool to a file, which is processed to update the data in WISKI
- a proof of concept was undertaken to demonstrate how generation of GPWAR content could be automated. The proof of concept allowed configuration and bulk loading of GPWAR chart content. Following the proof-of-concept GHD-digital (consultant) were engaged to investigate how the proof-of-concept methods could be implemented for production.

Performance over the current period has been strong, with this activity having met **100% (2/2)** of its output measures and performance indicators as of financial year 2023–24. All output measures and performance indicators are expected to be met by June 2025. See the current performance against output measures and performance indicators in Table 22 below.

Table 22: Current period performance against output measures and performance indicators

Output Measure 20210-25	Performance Indicator 2021-25	Comment
OM23 - Publication of detailed General Purpose Water Allocation Reports (GPWARs): Output = 9 per year **Met**	GPWARs published within 12 months of the end of the water year = 100% **Met**	Reports for all 9 inland regulated water sources published each year. GPWAR for all water sources have been published each year on schedule.

Proposed services and costs for the 2026–30 pricing period

General purpose water accounts

- Continue publication of 9 regulated water accounts (commenced 2009–2010) and the new Barwon–Darling unregulated water account.
- Complete the last component of the water resource accounting system, which is automating the generation of the report document. Currently, the water resource accounting system provides automated import of data from multiple systems to a central data repository (WISKI). Quality assurance, population of tables and generation of plots pre-population of the report is automated. Collation of the report requires manual input or update of tables, charts and text summaries. A Word add-in (Excel to Word automation) has been selected to complete the final stage. For the 2023–2024 and 2024–2025 reports, selected datasets will be transitioned to the tool, achieving automation of the data flow from the central repository to the reporting areas.
- Review and improvements to methods adopted for calculating or estimating datasets in the GPWAR that are not measured directly, e.g. river losses, ungauged inflows, evaporation losses and rainfall gains, breakouts and return flows, environmental volumes.
- Explore options for improving access to *ad hoc* datasets that are not systematic, e.g. border rivers trade, planned environmental accounts.
- From 2025–2026, GPWAR reporting will be extended to selected groundwater, regulated and unregulated systems.
- Enhance the department website where the GPWAR report is published as a static product to provide public access and download of datasets contained in the GPWAR report.

Technical support

- Maintenance analysis tools developed for groundwater and Basin reporting including AWD calculator, groundwater LTAAEL
- Preparation and quality assurance of data inputs for basin reporting
- Assessment and drafting water sharing plan account rules

- Technical input and participation in important federal and state projects, e.g. Water Insights, Bureau of Meteorology (BoM), Murray Darling Basin Authority (MDBA) Water Information Portal (WIP), digital customer systems (WAVE program) – Licence orders and usage
- Training internal staff user reporting from the Water Information Reporter (WIRE) and WISKI

Proposed efficiencies

Data and systems improvements, as outlined in the Overheads narrative, will deliver efficiencies in this activity. Efficiencies are quantified across all of the department, WaterNSW and NRAR, and more broadly, to customers as $5,600,000 per year.

Efficiencies that contribute to this forecast annual saving include:

- internal productivity – $4,400,000
- customer benefits – $870,000
- reduced contractor expense – $350,000.

Generally, data and system improvements and resulting efficiencies can be described as:

- uplift information systems and centralise access – improve the quality, reliability and efficiency of routine water resource management activities and reduce delays in customer transactions
- fix historical data quality – reliable water information, saving staff time when delivering on statutory and water management objectives
- improve and automate access to multiple data streams – enhanced systems making access and analysis effective and efficient, improving productivity.

The data and systems improvements will allow greater efficiency in activity W04-03 through staff time savings due to reduced effort accessing data, reduced data checking and cleansing, less processing time for analysis and delivery of work activities, and improved publishing and archiving of water resource accounts and information. This efficiency will deliver better data management and analysis for water modelling, planning, science and environmental activities. Core statutory reporting and water accounting that supports transparency, and compliance will be more efficient.

Activity drivers

Key drivers for water resource insights are:

Intergovernmental Agreement on a National Water Initiative, clauses 80–88

Water Management Act 2000:

- Water resource insights information (AWDs, trading, environmental water accounting, end-of-system flows) for review and evaluation of WSPs

Water Act 2007 (Cth) **:**

- MDBA Water Audit Monitoring Reports under the Murray–Darling Basin Agreement transitioning to SDL (Sustainable Diversion Limits) reporting required for the Murray–Darling Basin Plan
- Water accounting requirements for the Murray–Darling Basin Plan
- Provision of water information to the Bureau of Meteorology as the national custodian of water information under Subdivision F – Reporting Obligations (the reporting obligation of the Basin state is to report the quantity of water available from the water sources of the water resource plan area during that water accounting period)

NSW Water Strategy

Priority 1 – Build community confidence and capacity through engagement, transparency and accountability

Action 1.2 Increase the amount and quality of publicly available information about water in NSW

The government will continue to improve the quality and range of water-related information made publicly available and ensure it is easy to find, search and navigate. We will:

- provide easier access to information about how water is managed and how decisions are made, particularly decisions around future water availability
- improve data management, accessibility and transparency and take an 'open by default' approach to information and data
- improve NSW's public water registers to increase transparency (while protecting privacy).

In 2021, the department undertook the Water Market Transparency Survey. Stakeholder responses to the survey informed the development and enhancement issues with respect to the DPIE data dashboards.

W05-01 Systems operation and water availability management

Description

This activity involves the implementation and review of the procedures, processes and systems required to deliver provisions of the NSW Water Management Act 2000 (WM Act) and water management plans to ensure the fair allocation of water across NSW. This includes undertaking legislative compliance to ensure equitable access to water between consumptive users and the environment. This activity also undertakes modelling and measurement of compliance with long-term extraction limits and the sustainable diversion limits (established by the Basin Plan) and the monitoring, review and reporting of implementation activities, procedures and systems that underpin this activity. In the next period, this activity will involve measuring take through metering (funding to commence in 2025-26).

See the dependencies of this activity with other WAMC activities in Figure 16 below.

Expenditure

Table 23: Current period operating expenditure and proposed costs ($000, 2024-25)

W05-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Systems operation and water availability management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	3,292	3,269	3,246	3,223					
Actual expenditure	5,014	11,519	10,060	10,060					
Proposed expenditure					9,542	9,299	9,695	9,552	9,677

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

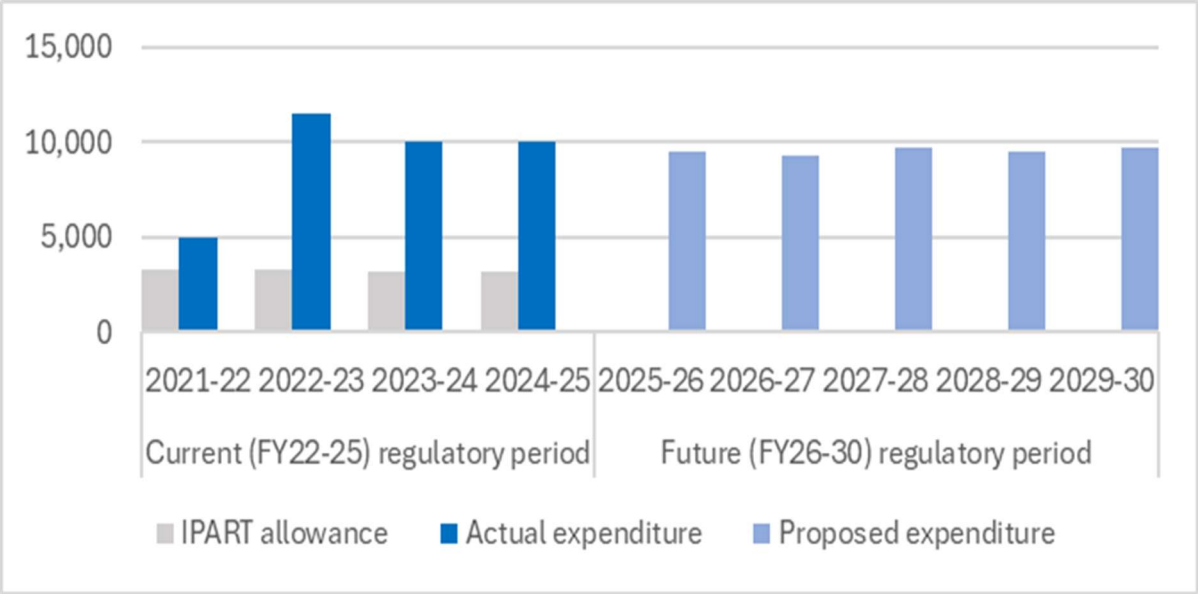

Figure 15: W05-01 Systems operation and water availability management 2026-30 operating expenditure ($000, 2024-25)

Current period performance

There is a large overspend compared to the IPART allowance in the current period. This overspend was not forecast at the time of the last IPART submission. The overspend relates to outsourcing work to consultants and undertaking advanced work in the Long-Term Average Annual Extraction Limit (LTAAEL) space and for water sharing plan (WSP) implementation. In 2023, systems operations had unplanned expenditure related to managing hypoxic blackwater.

Further, metering and measurement was not accounted for in the current period and is a new function of this activity. This function was not funded by IPART in the current period but was risk funded by the department. Activities relating to metering and measurement include:

- analysing metering and measurement data as the major input into LTAAEL and Sustainable Diversion Limit (SDL) compliance
- continued roll out of metering in high-risk water sources to inform analysis of LTAAEL and SDL compliance
- supplier/market engagement on types of meters used, approved for use, and making policy amendments as capability improves and adapts
- ensuring systems/processes for non-urban metering and floodplain measurement remain fit for purpose (a large cause for the Matthews enquiry was the lack of satisfactory metering and oversight across unregulated surface water and groundwater)
- ensuring metering is considered and incorporated in all future policy work/enhancements enabling the department to retain confidence in LTAAEL and SDL compliance (e.g. managed aquifer recharge)

- working with inter-jurisdictional colleagues to help ensure NSW remains compliant with future changes in national metering policy and help ensure future changes to metering policy at a national level benefit water users and the public of NSW.

The outputs and benefits of metering and measurement are:

- use of metering data for the assessment of compliance with the LTAAEL as described in WSPs.
- an increased percentage of water take in NSW is measured and able to be monitored
- the community retains confidence that water extraction across NSW is managed and measured.

There is currently minimal accurate use data for all unregulated river systems (except the Barwon-Darling), and many groundwater systems. Metering data is required to enable accurate determinations against the LTAAEL and SDL. The extraction limits are used to enable the long-term objectives of NSW WSPs and for the Basin Plan 2012 to be met. These limits are designed to protect water resources, dependent ecosystems and communities from the impacts of over-extraction in the longer term.

Performance over the current period has been strong, with this activity having met **85% (6/7)** of its output measures and performance indicators as of financial year 2023-24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 24 below.

Table 24: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM25 - A theme-based WSP implementation program established and published. **Met**	N/A	A theme-based WSP implementation program has been established and published.
OM26 - Annual implementation effectiveness reviews completed for each theme and communicated to key stakeholders through annual reports and DPIE Water website update. **Met**	N/A	Annual implementation effectiveness reviews completed for 2021/22 and 2022/23. Collection of data to inform 2023-24 annual implementation review and report has commenced.
OM27 - Manage (LTAAEL) in priority WSPs where it is exceeded. **Met**	100% compliance with LTAAEL assessed annually for priority water sharing plans in accordance with rules set out in respective	LTAAEL in priority WSPs where it is exceeded has been successfully managed and 100% compliance achieved.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
	WSPs, and AWDs reflect an appropriate reduction in allocations where LTAAEL is exceeded. **Met**	
OM28 – Snowy Licence Review implemented by 2022. **Not met**	N/A	The Snowy Licence Review was not implemented by 2022. It is set to be completed by the end of 2024. The work plan of ongoing investigations to be implemented following the completion of the licence review and continue through to the next licence review in 2027.
OM29 - Available water determination (AWDs) and allocation statements released for each WSP. **Met**	AWDs published on website within 1 week of being made = 100% **Met**	Completed on time for each water source, in each year of the current period.

Proposed services and costs for the 2025 determination period

This activity will continue to assess water availability and make timely, reliable AWDs over the next period. In the next period we forecast a step increase in expenditure due to increased functions to implement LTAAEL and new metering functions. This includes:

- additional modelling and remote sensing FTEs to undertake the required new modelling in areas where we currently do not assess LTAAEL, mainly in the inland unregulated and coastal water sharing plans (this will be made possible by both metering and remote sensing data), and for model upgrades and development in areas where we are assessing LTAAEL (inland regulated rivers and the unregulated Barwon-Darling) but improvements to the quality of assessment are required.
- metering and measurement staff to undertake LTAAEL assessment in areas where we are required to reconcile metered water take (noting most large water users will have meters in place by the next reporting period), with an estimate of take for smaller water users using remote sensing and other methods.
- ongoing metering and measurement implementation activities.
- additional analysis and reporting requirements, required by the Inspector-General of Water Compliance of Australia, for reporting against the SDL in Basin water resource plans.

Operating costs required for non-urban water metering includes:

- supplier/market engagement on types of meters used, approved for use, and making policy amendments as capability improves and adapts

- ensuring systems/processes for non-urban metering and floodplain measurement remain fit for purpose (a large cause for the Matthews enquiry was the lack of satisfactory metering across unregulated surface and groundwater)
- ensuring metering is considered and incorporated in all future policy work/enhancements enabling the department to retain confidence in LATAAEL and SDL compliance (e.g. managed aquifer recharge)
- working with inter-jurisdictional colleagues to help shape and ensure NSW remains compliant with future changes in national metering policy
- rolling out implementation of metering in new areas (e.g., floodplain harvesting in the south of the state)
- assessing application for exemptions to the requirement for a pattern-approved meter.

While LTAAEL compliance assessments have commenced for some water sharing plans (namely the inland regulated rivers, Barwon Darling, and Sydney Metro WSP areas), improvements to the data collection, assessment quality, and additional modelling will be required to address WSP requirements. SDL compliance reporting is also required in the next period, with additional analysis and reporting imposed by the new Inspector-General of Water Compliance Australia.

In the next period the NSW WSP Implementation Program will continue to coordinate, monitor and report on WSP implementation activities. New work includes:

- establishing an implementation program for a floodplain management plan
- reviewing and improving the WSP Implementation Program (proposed implementation program effectiveness review every 3 years and first year implementation health checked for renewed plans).

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- *Water Management Act 2000:*
  - Chapter 2 Water management planning
    - implementation planning
    - amendment of plans
  - Chapter 3 Water management implementation
    - available water determinations
    - metering
    - dealings (trade)
  - Access Licence Dealings Principles Order

    - dealings (trade)
  - WSPs, limits to the availability of water, provide the statutory basis for water allocations, usually Part 6 (regulated river), or Part 9 (groundwater).
  - general resourcing required for input into operational policies and procedures.
- *Water Management (General) Regulation 2018:*
  - Part 10 Metering Equipment (standards, conditions, exemptions, measurement periods, reporting)
- *Water Act 2007 (Cth):*
  - Basin Plan 2012
  - Water trading rules
  - Inspector-General of Water Compliance of Australia Metering Standards & Guideline, and SDL compliance reporting.

Mapping of W05-01 with other WAMC activities

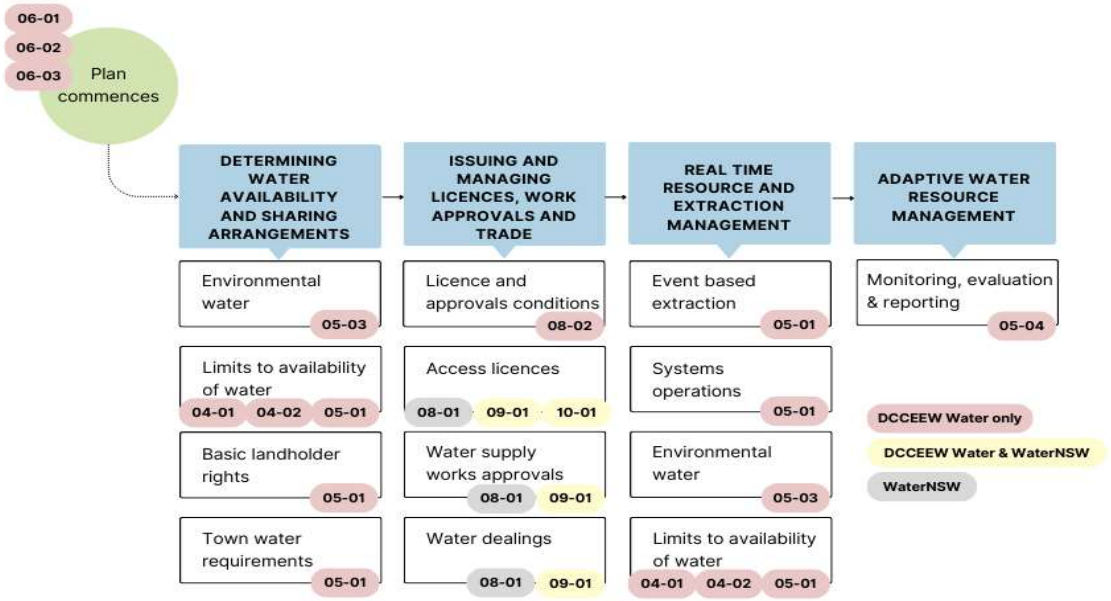

Figure 16: WAMC water sharing plan implementation program logic

W05-02 Blue-green algae management

Description

WaterNSW is responsible for testing for, and notifying about, blue-green algal blooms in the river systems and storages that we manage. WaterNSW's role in algae management includes:

- coordinate and support Regional Algal Co-ordinating Committees (RACCs).
- contribute to the State Algal Advisory Group (SAAG).
- contribute to the Regional Algal Management Guidelines.
- manage algal communications including hotline, media enquiries, website and briefings to Minister.
- monitor rivers and storages to service those aspects of the RACC's reporting requirements, in accordance with the RACC Guidelines and WaterNSW Service Provision Deed.

WaterNSW' algae management actions include:

- coordinate algal monitoring and public information (media and web-based information) in surface waterways and storages where no other management organisation has a role.
- liaise with other agencies affected by algal blooms to ensure that an integrated risk management approach is taken.
- perform a knowledge broker role and facilitate communication between regional stakeholders and the State Algal Advisory Group (SAAG).
- identify knowledge gaps and encourage research to provide new information to enhance algal monitoring and management.
- coordinate and manage regular algal information on behalf of stakeholders and ensure that water users and other stakeholders are informed.

Expenditure

Table 25: Current period operating expenditure and proposed costs ($000, 2024-25)

W05-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Blue-green algae management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	736	748	743	729					

W05-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Blue-green algae management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Actual expenditure	854	945	899	944					
Proposed expenditure					929	913	932	957	980

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

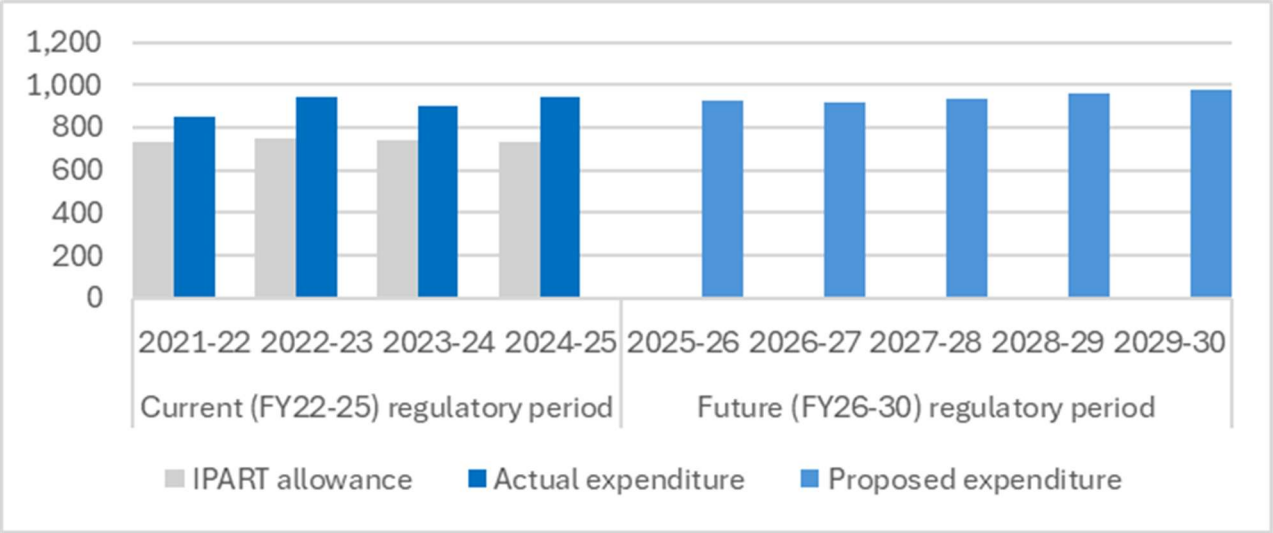

Figure 17: W05-02 Blue-green algae management 2026-30 operating expenditure ($000, 2024-25)

Current regulatory period

Why our actual expenditure is higher or lower than the IPART allowance in the current determination period

WaterNSW is required to increase response monitoring where higher levels are detected. Increased levels of algae are to be expected following periods of wet weather and flooding where nutrient rich materials are brought into the storages, as well as when weather conditions are warmer.

Where higher levels are detected WaterNSW is also required to engage with its counterparts and provide advice as appropriate. The frequency of field sampling, laboratory analysis and reporting also increases under these conditions.

Next regulatory period

What we will deliver in the next regulatory period

WaterNSW will continue to deliver outcomes consistent with the current regulatory period.

Why our forecast efficient expenditure will be higher/lower than in the current regulatory period

WaterNSW is forecasting costs that are broadly in line with the current regulatory period, noting that changing weather conditions and community expectations are a material driver of costs. The proposed costs provide a modest reflection of the impacts of weather patterns and increasing cost pressures from testing and reporting.

W05-03 Environmental water management

Description

This activity leads the collaborative development and implementation of environmental water planning policy, legislative requirements, commitments and reforms that protect and enhance the use of environmental water so it can achieve its intended environmental objectives and outcomes. See the dependencies of this activity with other WAMC activities in Figure 19 below.

In the next period, this activity will also involve both the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) Acceleration projects and Northern Basin Toolkit (NBTK) projects.

Activities undertaken by WaterNSW include:

- Participation in collaborative governance arrangements including the provision of specialist advice for the planning and implementation of environmental flow events; and reporting and communicating on operational aspects of environmental watering events.
- WaterNSW has a broad ranging role that traverses the contribution to key framework documents, data, and operationalisation of environmental water measures and delivery of environmental water. Including:
- Fulfilling the responsibilities and requirements that are set out in Procedures Manuals established by the Minister under WSPs as they relate to managing water for the environment, including prerequisite policy measures (PPMs) and active management. These Manuals codify operational processes relating to e-water management.
- Participation in the development of Manuals established by the Minister under WSPs.
- Provision of timely and regular data and reporting for environmental water use to inform ongoing adaptive management of water for the environment, including as specified in the Procedures Manuals. This may include event-based and annual reporting.
- Provision of timely data and information that contribute to annual reports for implementation of PPMs (southern Basin), and active management (northern Basin). Which includes a description of activities undertaken during the water year.

Expenditure

Table 26: Current period operating expenditure and proposed costs ($000, 2024-25)

W05-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Environmental water management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - the department	1,330	1,303	1,276	1,250					
IPART allowance - WaterNSW	212	214	210	171					
IPART allowance	**1,543**	**1,517**	**1,486**	**1,421**					
Actual expenditure - the department	813	6,797	7,448	7,448					
Actual expenditure - WaterNSW	505	453	420	458					
Actual expenditure	**1,318**	**7,249**	**7,868**	**7,906**					
Proposed expenditure - the department					4,032	3,779	2,525	2,499	2,433
Proposed expenditure - WaterNSW					452	442	449	464	479
Proposed expenditure					**4,484**	**4,221**	**2,974**	**2,963**	**2,912**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

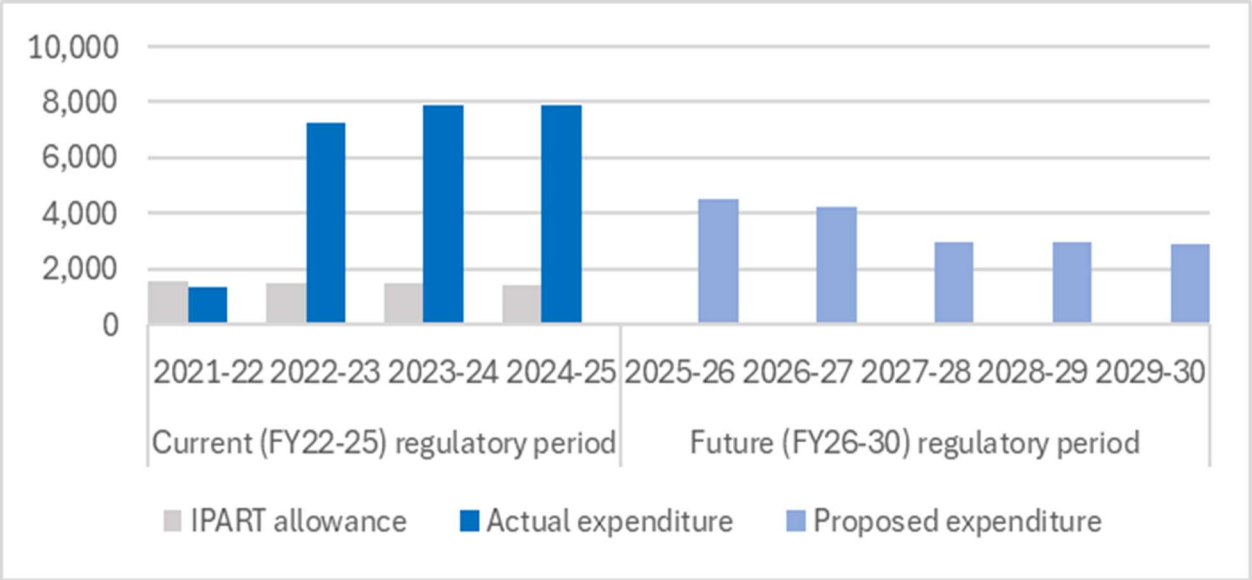

Figure 18: W05-03 Environmental water management operating expenditure ($000, 2024-25)

Current period performance

There is a large overspend compared to the IPART allowance in the current period. This overspend was not forecast at the time of the last IPART submission. The overspend largely relates to both the SDLAM acceleration and NBTK projects.

All SDLAM Acceleration projects, including new assets, renewals, upgrades and ancillary infrastructure, along with any ongoing operations and maintenance activities, are classified as Environmental Water Management Activities. This is because the primary purpose of SDLAM projects is to ensure efficient provision of water to the environment.

All NBTK projects, including upgrades to existing infrastructure, along with any ongoing operations and maintenance activities, are classified as Environmental Water Management Activities. Section 218 of the Fisheries Management Act 1994 requires a public authority that proposes to construct, alter, or modify a dam, weir, or reservoir on a waterway to include as part of the works, a suitable fishway or fish by-pass, if requested. Provision of an on-going suitable fishway requires adequate operations and maintenance activities. The structures are used to supply WaterNSW's water planning and management services on behalf of themselves and WAMC.

Actual operational expenditure by WaterNSW was greater than the IPART allowance primarily due to the higher than anticipated levels of complexity associated with the operationalisation of the environmental water measures introduced in the period and particularly regarding operating under the Active Management regimes.

Performance over the current period has been strong, with this activity having met **83% (5/6)** of its output measures and performance indicators as of the 2023-24 financial year. All output measures and performance indicators are expected to be met by June 2025, except for OM32 which is delayed

due to an unforeseen requirement for an expert panel to review the original plan. See the current period performance against output measures and performance indicators in Table 27 below.

Table 27: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM31 - Prerequisite policy measures – adaptive process in place to recognise return flows from environmental water. **Met**	Agreement – eWater managers, Water NSW and SCBEWC agree the process for recognising return flows. **Met** Annual report on PPMs implementation published on DPIE website. **Met**	The adaptive process is in place to develop return flow accounting arrangements. The agreement is also in place and the annual report published on the department website.
OM32 - Northern Basin – Interim Unregulated Flow Management Plan for the North-west implemented as demonstrated by: Review report published and Procedures Manual for the Interim Unregulated Flow Management Plan for the North-west adopted by Water NSW and in place. **Off track as of 2023/24**	N/A	This output measure is off track while waiting for the findings of the Connectivity Expert Panel. The measure to publish a review report was met in 2021.
OM33 - Snowy Licence – Evaluate using the Mowamba River to provide environmental water to the Snowy River. **Met**	N/A	An initial investigation into using the Mowamba River to provide environmental water to the Snowy River has been completed and further work is underway to decide the forward workplan, including more detailed investigations. Only $37,590 was spent under W05-03 in the 2022-23 water year as part of OM34, and other work has not been linked to W05-03.
OM34 - Snowy licence – Investigate more flexible delivery to achieve better environmental outcomes and deliver an average annual	N/A	Work completed includes a feasibility assessment, a 3-year trial underway to achieve improved flexibility of releases under the Snowy River Increased Flows, as well as work to obtain required approvals

Output Measure 2021-25	Performance Indicator 2021-25	Comment
flow consistent with the intent of SWIOID. **Met**		for more flexible release, however none of this work has been linked to W05-03.

Proposed services and costs for the 2025 determination period

I In the next period, this activity will include work under existing output measures but will involve several additional work packages and projects. Some inclusions are listed below.

1. Implementation of the Connectivity Expert Panel's recommendations – the cost increases for this work relate to:

- 2 major work packages – (1) model development to accurately forecast triggers for supplementary access in the tributaries, B and C-class access in the Barwon–Darling and floodplain harvesting, and (2) writing procedures for WaterNSW to implement the restrictions
- the level of service reflects the highest level of service to implement the recommendations, using forecasting models rather than static, derived flows targets
- a step change in expenditure is required primarily for the forecasting model development (an additional 6 FTE in both 2025–26 and 2026–27), and to a lesser extent for writing the procedures manual. Once the modelling work is complete, the level of service to implement the plan will reflect the same level of service to deliver similar environmental water protection mechanisms, i.e. active management rules
- the department and WaterNSW are still in the process of determining who will carry out the modelling work (i.e. the 6 FTE). If WaterNSW carries out the work instead of the department, the labour expense cap (LEC) would change to operational expenditure.

2. Active management rules and variable access thresholds – an increase in output under the active management rules will occur in the next period to (1) complete the first review of Active Management in Unregulated Rivers Policy by June 2026, (2) review and assess requests from environmental water holders to expand the rules to areas where protection may be required and (3) address unforeseen implementation issues that have arisen through the annual review process.
3. Implementation and adaptive management of prerequisite policy measure (PPMs), which involves:

- annual review and improvements to accounting arrangements
- development of loss accounting arrangements so they can be implemented
- assisting the river operator (WaterNSW and MDBA) incorporate accounting arrangements into business-as-usual operations.

4. Improved management of environmental water, which involves:

- address all recommendations from the Claydon Review and First Flush Review
- finalise and implement grouped release procedures
- finalise and implement rates of change procedures, including valley-specific procedures if necessary
- implement section 324 (temporary water restrictions) to protect environmental water as required
- establish transparent accounting systems for discretionary planned environmental water
- respond to section 44 audits and section 43A reviews by the Natural Resources Commission (NRC), including addressing recommendations
- attend and contribute to intergovernmental committees to address interjurisdictional environmental water protection issues
- metering solutions for environmental water holders implemented.

5. The NBTK project is a new program of work that involves upgrades to existing infrastructure, along with any ongoing operations and maintenance activities. Funding through WAMC prices is only required to support operating costs of ongoing implementation and adaptive management requirements for environmental water management.
6. SDLAM Acceleration projects is a new program of work that involves new assets, renewals, upgrades and ancillary infrastructure, along with any ongoing operations and maintenance activities. Funding through WAMC prices is only required to support operating costs on a small number of non-WaterNSW assets. While SDLAM Acceleration capital works are funded by the Australian Government, post-construction costs are not funded. These costs relate to the commissioning, handover, benefits realisation activities and defect period management of assets, in addition to longer-term operations and maintenance requirements. SDLAM Acceleration projects are required to remediate the environmental impacts of extractive water use. Therefore, consistent with IPART's 'impactor pays' framework, the non-funded costs of SDLAM Acceleration projects should be recovered from prices to water entitlement holders.
7. Key areas of focus and outputs for WaterNSW's Environmental Water Management under the WAMC activity in the next regulatory period will primarily involve continued operation of the environmental water arrangements for PPMs and Active Management, however it will also involve continued advancements in these arenas. In a related activity in the rural valleys determination, significant increases in environmental water holdings (of held, or licenced environmental water) by Governments will increase the associated workloads involved with liaising with Environmental Water Holders around the planning and delivery of their environmental water.

These planning and coordination activities relating to both the continued advancements in environmental watering and an increase environmental water holdings requires dedicated and specialist skills.

WNSW forecast efficient operational expenditure in the next regulatory period for Environmental Water Management will be generally consistent with expenditure in the current regulatory period and above that of the current IPART allowance. Whilst the operation of the environmental water regimes will naturally experience efficiencies through optimisation and experience, these will be offset by increased future requirements around environmental water operations already foreshadowed in the final report by the Expert Connectivity Panel.

Proposed efficiencies

The work carried out under this activity is primarily project-based implementation of statutory environmental water reforms. As reforms are implemented, work then focuses on continuous improvement, using the annual review process to resolve implementation issues. Over time, the number of issues reduce, and the annual review process also becomes streamlined, seeing the focus shift to 'business as usual'.

For example, the active management reform was implemented in 3 water sharing plan areas in December 2020. The number of issues raised since implementation has declined since the first year, from 57 issues in the first annual review to 22 issues in the third, most recent review.

Considering these processes, the efficiency-driven reduction in FTE is assumed to be 0.025 FTE per year for active management and 0.025 FTE for prerequisite policy measures, the 2 key reforms under W05-03. Such efficiencies are considered negligible for other smaller reforms.

However, since there are still new reforms or reform activities waiting to be implemented (e.g. implementation of the Connectivity Expert Panel's recommendations following its final report delivered July 2024 and the Active Management in Unregulated Rivers Policy Review due Feb 2026), and since unforeseen new reforms can be expected to arise, as they have in the current period (e.g. the northern to southern Basin environmental water protection trial in 2024, and independent reviews following significant events such as the Claydon Review in 2021 and the First Flush Review in 2020), any available FTE will be utilised to begin work on the new reforms.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary:

- *Water Management Act 2000:*
  - changes to individual water sharing plans to improve environmental water management
  - Section 8 Environmental Water
  - Section 20 Core Provisions
  - Section 48 Effect of management plans on exercise of Minister's functions
  - Section 324 Temporary water restrictions

- Section 101 A Metering equipment conditions (and Schule 8 of the Water Management Regulation 2018)

- *Water Act 2007 (Ch):*
  - Basin Plan 2012
  - environmental and supply considerations in section 14
  - Schedule 1 in the Murray Darling Basin Agreement
- *Fisheries Management Act 1994*
  - provision of suitable fish passage in section 218
- Independent reviews and audits
  - ICAC investigation into complaints of corruption in the management of water in NSW and systemic non-compliance with the Water Management Act 2000.
- Stakeholder views and customer expectations
  - the 'What Matters to our Customers' insights report undertaken in April 2023 showed all customer groups confirmed as a priority an expectation of confidence that management of water sharing and floodplains is driven by evidence-based decision making.

Dependence mapping of W05-03 with other WAMC activities

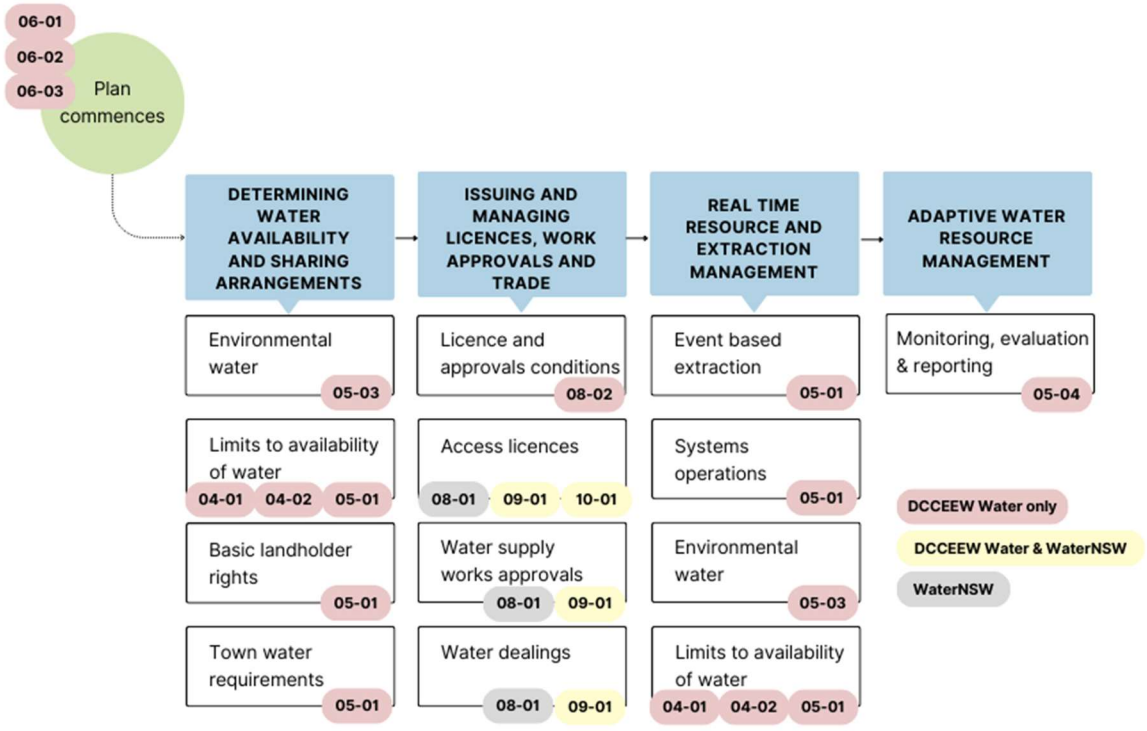

Figure 19: WAMC Water Sharing Plan implementation program logic

W05-04 Water plan performance assessment and evaluation

Description

As per the NSW *Water Management Act 2000* (WM Act), this activity involves the assessment, audit and evaluation of the appropriateness, efficiency and effectiveness of the water management plan in achieving Aboriginal, environmental, social and economic objectives.

See the dependencies of this activity with other WAMC activities in Figure 21 below.

Expenditure

Table 28: Current period operating expenditure and proposed costs ($000, 2024-25)

W05-04	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water plan performance assessment and evaluation	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	3,149	3,127	3,105	3,083					
Actual expenditure	4,685	5,861	7,631	7,631					
Proposed expenditure					6,269	5,770	6,408	6,277	6,079

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

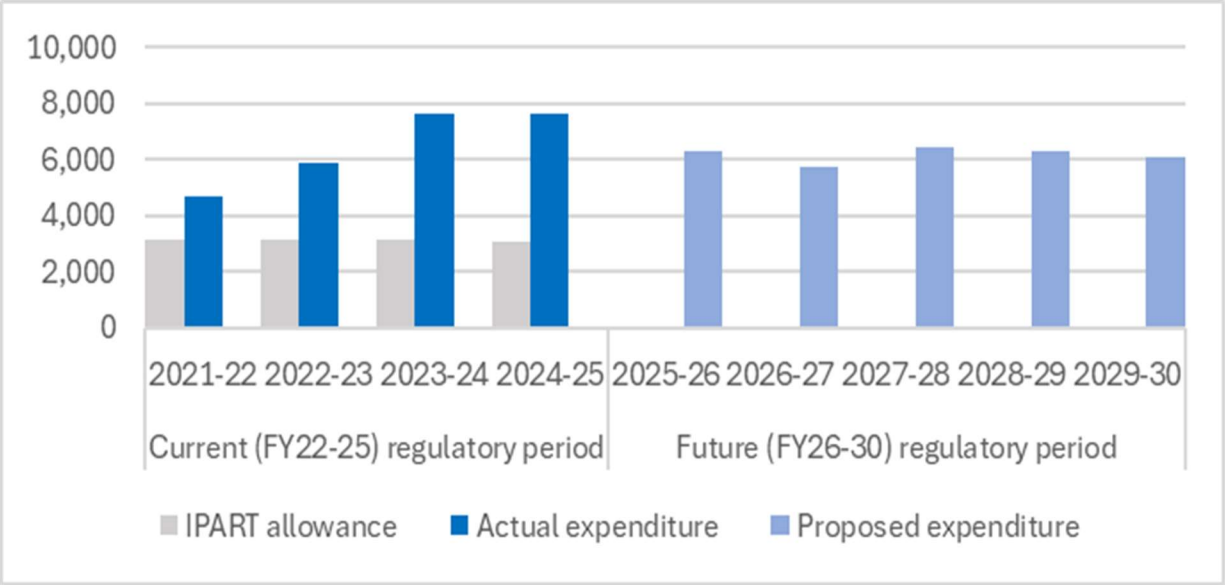

Figure 20: W05-04 Water plan performance assessment and evaluation 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The primary reason for the large overspend during the current period has been investing in an evaluation framework and performance improvements. This has included the development of methods to evaluate environmental, social and economic performance indicators for both surface water and groundwater sources. The development of methods also included testing across several water sharing plans (WSPs). A review legislated under section 10 of the NSW WM Act was also required to be undertaken during the current period. A section 10 review will need to be completed by the department in the next period but has not been included in the WAMC proposal to minimise cost increases on water users.

Performance over the current period has been strong, with this activity having met **75% (3/4)** of its output measures and performance indicators as of financial year 2023/24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 29 below.

Table 29: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM35 - WSP risk assessments prepared: Output = 25 **On track to be met as of 2023/24. (17/25)** **Note: WSP risk assessments will be transferred from W05-04 to W01-05 at the commencement of the next determination period.**	WSPs with risk assessments available prior to remake date = 100%. **Met**	Seventeen of 25 risk assessments have been prepared as of 2023-24. All 25 will be completed by end of 2024/25. All risk assessment prepared to date have been completed and made available in line with Water Sharing Plan (WSP) remake timelines.
OM36 - WSPs included in the scope of monitoring programs: Output = Monitoring data for all inland (Basin) WSPs, at least 6 coastal WSPs (approximately 50% of coastal WSP remakes during the period) **Met**	WSPs with monitoring outcomes available prior to evaluation and remake date = 100% **Met**	Available environmental monitoring outcomes data was compiled and supplied for all inland WSPs and 6 coastal WSPs.

Proposed services and costs for the 2025 determination period

In the next period, the continued and improved delivery of assessments, evaluations and reviews is planned across a larger number of WSPs. In the current period, improved methods for evaluating social, economic and environmental performance indicators have been developed and trialled, as detailed above. These will be applied to all WSPs over the next period.

The costs include the collection and analysis of WSP social, economic and environmental performance indicators. The highest proportion of costs are focussed on monitoring and evaluating ecological plan performance. Further work includes refining and continuing to implement the WSP Evaluation Framework. The need for this information is recognised in the NSW WM Act and a range of independent audits and reviews completed in recent years, including by the Independent Commission Against corruption (ICAC) and by the Natural Resources Commission (NRC).

WSP risk assessments are moving from W05-04 to W01-05 in the next period. Risk assessments have evolved to be a product that is used in different stages of developing WSPs and is better placed under W01-05. Further, moving this work under W01-05 aligns with new requirements in WSP evaluation and

review. The cost transfer of this work is estimated to be $670,000 across the 5 years of the next determination period, and accounts for 1.0 FTE per year.

Proposed efficiencies

Future efficiencies are expected with the establishment of governance processes, clear understanding of interagency roles and responsibilities and an approved evaluation framework and methods. Improvements to environmental data access, storage and spatial publication will streamline collection and analysis of monitoring data. Further efficiencies will be achieved from semi-automation of data extraction processes and modelling using established scripting. Application of the NSW WSP prioritisation tool has enabled development of a more strategic monitoring, evaluation and reporting (MER) program which adds efficiency to data collection activities and guides evaluation effort across plans. Collaborations with other government agencies and universities have improved value for money for the NSW public and improved achievement of outcomes.

The intent of the prioritisation tool is that MER effort over the next reporting period will be commensurate with the priority ranking of the WSP.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary.

- *Water Management Act 2000* :
  - Plans require collection of data on performance indicators to measure plan performance.
- Independent reviews and audits:
  - the department must provide evidence of water sharing plan performance to the Natural Resources Commission for its review.
  - ICAC investigation into complaints of corruption in the management of water in NSW and systemic non-compliance with the *Water Management Act 2000*.
- NSW Water Strategy (SWS)
  - the department has obligations to undertake monitoring and research into performance indicators under Priority 3 of the NSW Water Management Strategy that seeks to ‘improve river, floodplain and aquifer ecosystem health, and system connectivity’.
- Stakeholder views and customer expectations
  - ‘What matters to our customers’ insights report undertaken in April 2023 showed all customer groups confirmed as a priority an expectation of confidence that management of water sharing and floodplains is driven by evidence-based decision-making.

Mapping of W05-04 with other WAMC activities

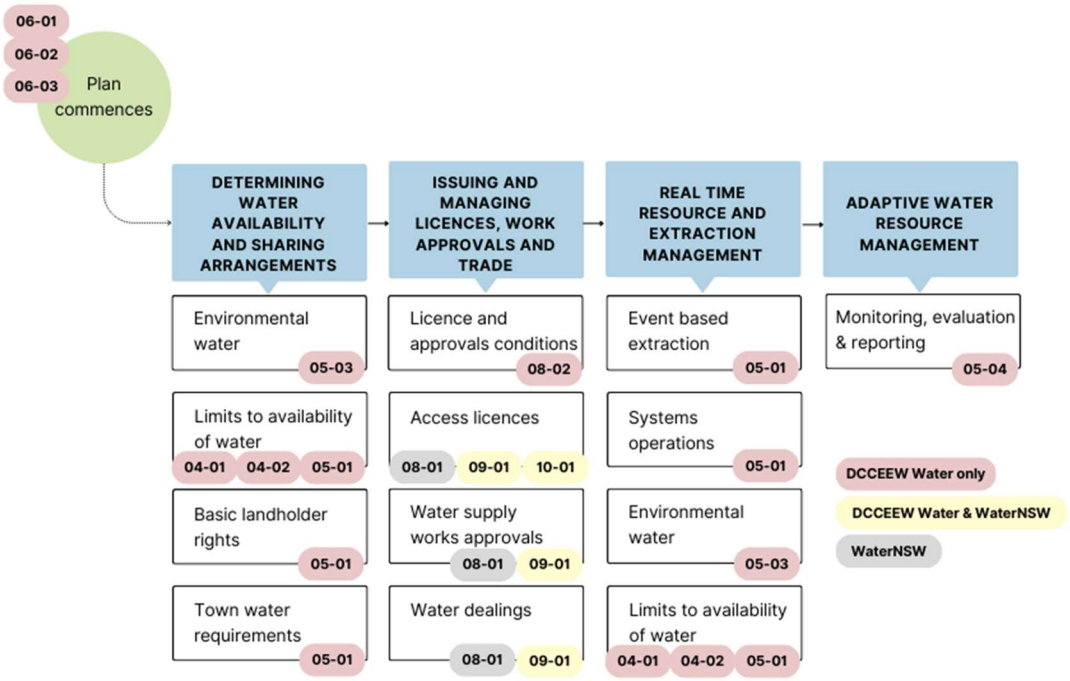

Figure 21: WAMC water sharing plan implementation program logic

W06-01 Water plan development (coastal)

Description

This activity develops and maintains water sharing plans (WSPs) for NSW coastal surface and groundwater sources. WSPs are a statutory water management plans that set the rules for how water is shared between the environment and other water users. They are a requirement of the NSW Water Management Act 2000 (WM Act).

The NSW Department of Climate Change, Energy, the Environment and Water is the lead agency responsible for making and implementing WSPs under the NSW WM Act. The development, review and audit of water sharing, and other water management plans are key elements of the NSW WM Act and are critical to achieving the Act's objectives and for adaptation to climate change. Further, this activity forms one of the key water planning and management activities listed in the NWI's pricing principles.

See the dependence of planning with all the input activities in Figure 23 below.

Expenditure

Table 30: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water plan development (coastal)	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	2,064	2,021	1,979	1,938					
Actual expenditure	3,724	3,928	2,286	2,286					
Proposed expenditure					6,824	11,877	7,820	8,105	6,606

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

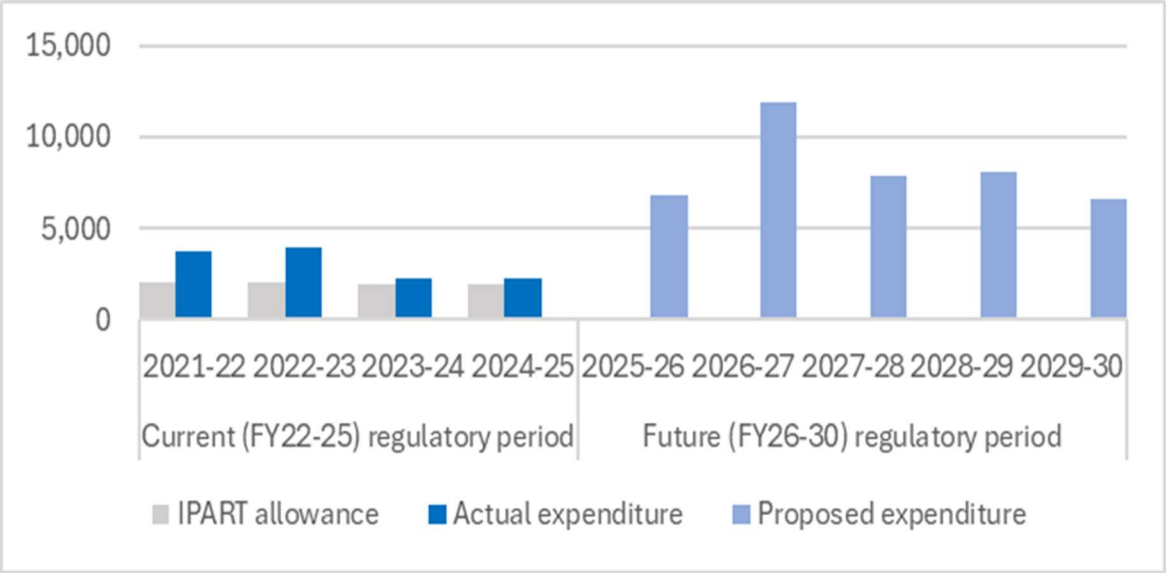

Figure 22: W06-01 Water plan development (coastal) 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The primary reason why actual expenditure has exceeded IPARTs allowance for this activity is because the allowance determined for the current period did not cover the entire workload involved in developing and maintaining coastal WSPs. For example, IPARTs allowance covered costs for plan extension, replacement and amendment but it did not cover contribution to the statutory review and audit of plans, nor work on priority projects required from audit and review recommendations to Minister, to then support plan replacement and implementation.

Performance over the current period has been strong, with this activity having met **82% (9/11)** of its output measures and performance indicators as of financial year 2023/24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 31 below.

Table 31: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM37 - NRC review report submitted for plans due to expire within the 2021 IPART period to Minister and Minister endorses Department recommendation for coastal WSPs to be replaced or extended. Output = 7 **Met**	Review report submitted on time = 100% **Met**	All anticipated Natural resources Commission (NRC) review reports have been submitted and recommendations endorsed by the Minister. It is likely 13 total NRC reports will have been submitted by the end of the current period.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM38 - WSP rules are reviewed and updates proposed where required as part of plan replacement: Output = 13 **Largely met as of 2023/24 (11/13)**	Statewide Index updated on 5 yearly schedule to support RCI production = 100% **Largely met as of FY23/24 (84%)**	11 of 13 WSPs rules are revied and updated proposed as part of plan replacement. It is expected the remaining two will be completed by the end of the current period. Statewide Index will be completely updated by the end of the period.
OM39 - Public exhibition of draft replacement coastal WSPs is completed: **Output = 11 Met**	Public exhibition completed in line with expected timing = 100% **Met**	Public exhibition of all 11 draft replacement coastal WSPs was completed.
OM40 - Replacement coastal WSP submitted for approval to commence: Output = 11 **Met**	Replacement WSPs submitted for approval in line with expected timing = 100% **Met**	The replacement of 11 coastal WSPs was submitted for approval to commence.
OM41 - Commencement of coastal WSPs: Output = 11 **Met**	Commencement of WSPs occur in line with expected timing = 100% **Met**	All 11 coastal WSPs commenced.
OM42 - Amendment to coastal WSPs commenced as required. **Met**	N/A	14 coastal WSP amendments completed in 23-24 period. Further coastal amendments are in development/approvals and will be finalised in the 2024-25 period.

Proposed services and costs for the 2025 determination period

The department is forecasting a substantial increase in the activities and services required from this activity in the next period. This is due to the increased resources required to address the cyclical nature of water planning, with a high number of coastal plans due for review, replacement, extension or amendment in the coming years. The increase in forecast expenditure represents a proportional increase in the number of staff required to deliver the services. It is also related to improvements in how we estimate costs along with increased input to First Nations engagement, implementation of state strategies, and several priority projects to deliver contemporary plans.

Proposed efficiencies

Over the current period, several efficiency measures to improve water planning processes during the current period have been implemented. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy. These improvements will continue and are reflected in forecast costs for the future period. In addition to the existing measures, we will continue to improve efficiency beyond 2025 through:

- developing and applying tools to support the categorisation of plan efforts to manage planning requirements and associated workloads more sustainably
- developing an overarching program management approach to delivery, covering all project components, to more clearly forecast resource requirements
- the introduction of WSPs Implementation Programs and Monitoring, Evaluation and Reporting Plans, which will inform plan reviews and streamline implementation
- ongoing updates of the WSP replacement manual, including addressing current gaps to streamline processes across the planning group
- continuing to work with the NRC to prioritise its review recommendations and to spread the work of plan review more evenly over time by advancing some plan reviews and applying interim extensions to others. This is in recognition that the forward schedule of expiring plans is not evenly spread from year to year, so the expenditure and delivery of outputs will vary from year to year
- improving the accuracy of budgeting for public exhibition and consultation activities, as well as reducing travel costs as alternative consultation approaches are used (where appropriate). Note, face-to- face consultation maintained where required, e.g. First Nations engagement
- access to new scientific information and data (received from priority projects relating to climate change, LTAAEL, risk assessment methodology and transferability between plan or water source areas)
- continuing internal discussions to clarify roles and responsibilities to reduce overlap and to confirm expectations for delivery of key products.

Additionally, the department has removed the costs of inefficient peaks in the statutory water planning process due to previous decisions to release plans in packages. Customers won't have to pay for this, and it will make efficiency savings through introducing risk-based planning, which will mean lower cost for lower-risk plans.

Activity drivers

Below are the drivers of the activity cost including changes that make this activity necessary.

Water Management Act 2000

- Audit of plans – under s 44, the NRC is to audit a WSP within its first 5 years to determine whether its provisions are being given effect to.

- Review of plans – under s 43A, the NRC is to review a WSP within the 5 years before it is due to expire to determine whether the water sharing provisions have contributed to intended outcomes, or if changes are warranted.
- Extension of plans – under s 43A, a WSP may be extended beyond its initial expiration date on the recommendation of the NRC.
- Replacement of plans – if a plan is not extended, it may be replaced under s 43. When replacing a plan, the draft plan must be made according to the requirements outlined in Chapter 2, Part 3, Division 8 of the NSW WM Act, including requirements for public exhibition.
- Amendment of plans – under s 45, a plan may be amended by an order published on the NSW legislation website (if circumstances outlined in the Act are met).

National Water Initiative

- As a signatory to the National Water Initiative, NSW is required to prepare water plans consistent with the initiative.
- This activity forms one of the key water planning and management activities listed in the NWI's pricing principles (Section 3, p 13) – 'developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use'.

Natural Resources Commission reviews and audits

- As a result of statutory processes, the work undertaken within this activity is also driven by the recommendations made by the NRC in its review and audit of WSPs provided to the minister. The department considers the various recommendations and suggested actions, which can involve significant work as part of plan replacements or amendments.
- The timing of review and audits also drives the service delivery of this activity. Due to the large number of plans due for expiry in 2026, the NRC in consultation with the department has scheduled its review and audit program to help stagger this work and the replacement of WSPs within required statutory timeframes.

  The department is rolling out WSP evaluations at year 8–9 of the WSP term, which will inform plan review and audits in the future.

Key water strategies

- NSW Water Strategy (SWS) – the SWS contains 7 strategic priorities focused on meeting core objectives based on the NSW WM Act. As part of implementing the strategy, WSPs often contribute to the implementation of specific actions to deliver strategy outcomes.
- Groundwater Strategy (GWS) – the GWS delivers on a key priority of the SWS by ensuring an enhanced, statewide focus on sustainable groundwater management for the next 20 years.
- Aboriginal Water Strategy (AWS) – the NSW Government is committed to partnering with Aboriginal people to codesign a statewide AWS that will deliver water rights for communities and include their interests in water management. Water Planning is working with this team to engage Aboriginal people in water planning activities and consider how outcomes of the strategy may be implemented through water planning work.

- **Greater Sydney Water Strategy (GSWS) / Lower Hunter Security Water Plan –** these strategies set out the strategic priorities and actions for the delivery of urban water supply, wastewater, recycled water and stormwater services into the future. The considerations and options that the strategies set out are outside the legislative purpose of a WSP. However, there are some areas where the WSP includes rules that implement parts of the strategies, such as Priority 2 of the GSWS to further support Greater Sydney's drinking water supplies. The rules that scale back environmental flow releases from the major dams in line with falling dam levels must be WSP rules. These rules provide substantial additional water supplies for Sydney urban water supplies in drier times, while maintaining environmental benefits.
- **Regional Water Strategies (RWS)** – 5 coastal regional water strategies have been developed, which look at climate evidence to understand how much water an area 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 over the next 20–40 years. Often, given the nature of the regional strategies, some of the actions identified may be more likely to be implemented through changes to our WSPs, or outcomes of these actions will result in policy and process that require changes to water sharing arrangements.

Stakeholder views and customer expectations

- The 'What matters to our customers' insights report undertaken in April 2023 showed all customer groups confirmed as a priority an expectation of confidence that management of water sharing and rural floodplains is driven by evidence-based decision-making.

Dependence of W06-01 with other WAMC activities

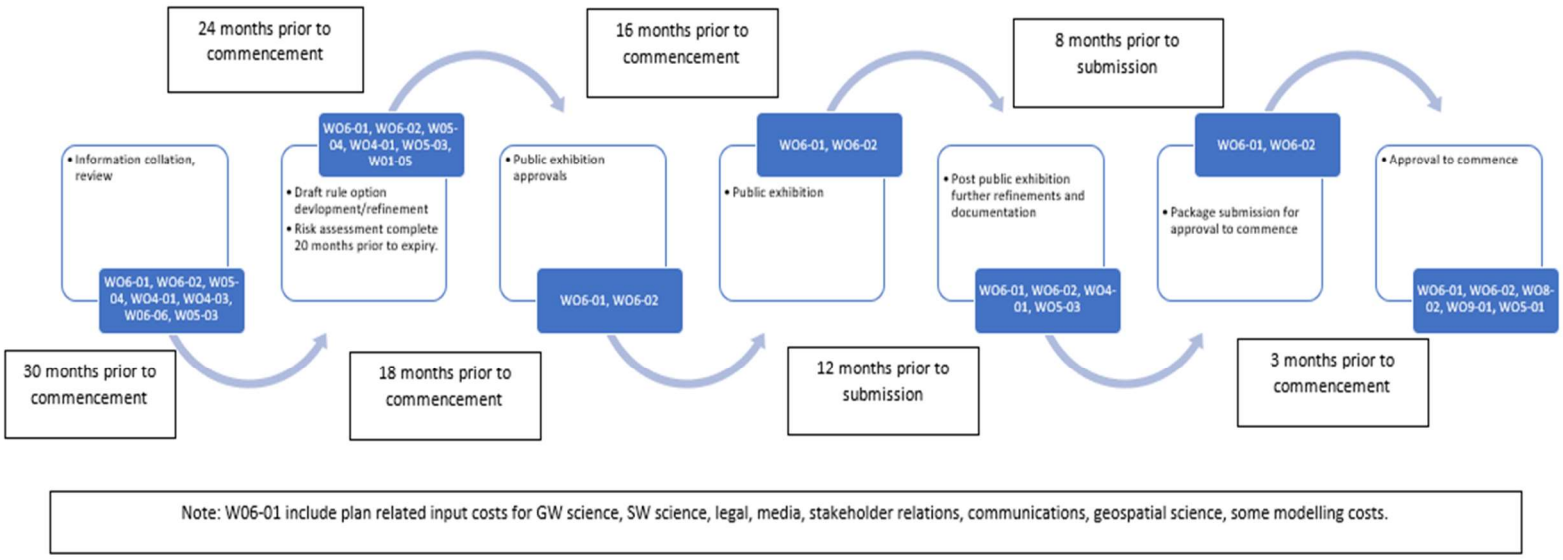

Figure 23: WAMC Water Sharing Plan cycle

W06-02 Water plan development (inland)

Description

This activity develops and maintains water sharing plans (WSPs) for NSW inland surface and groundwater sources. WSPs are statutory water management plans that set the rules for how water is shared between the environment and other water users. They are a requirement of the NSW *Water Management Act 2000* (WM Act).

The NSW Department of Climate Change, Energy, the Environment and Water is the lead agency responsible for making and implementing WSPs under the NSW WM Act. The development, review and audit of water sharing, and other water management plans are key elements of the NSW WM Act and are critical to achieving the Act's objectives and adaption to climate change. Further, this activity forms one of the key water planning and management activities listed in the NWI's pricing principles.

See the dependence of planning with all the input activities in Figure 25 below.

Expenditure

Table 32: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water plan development (inland)	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	3,506	3,433	3,361	3,291					
Actual expenditure	6,279	5,773	7,554	7,554					
Proposed expenditure					7,184	10,558	4,380	8,772	5,805

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

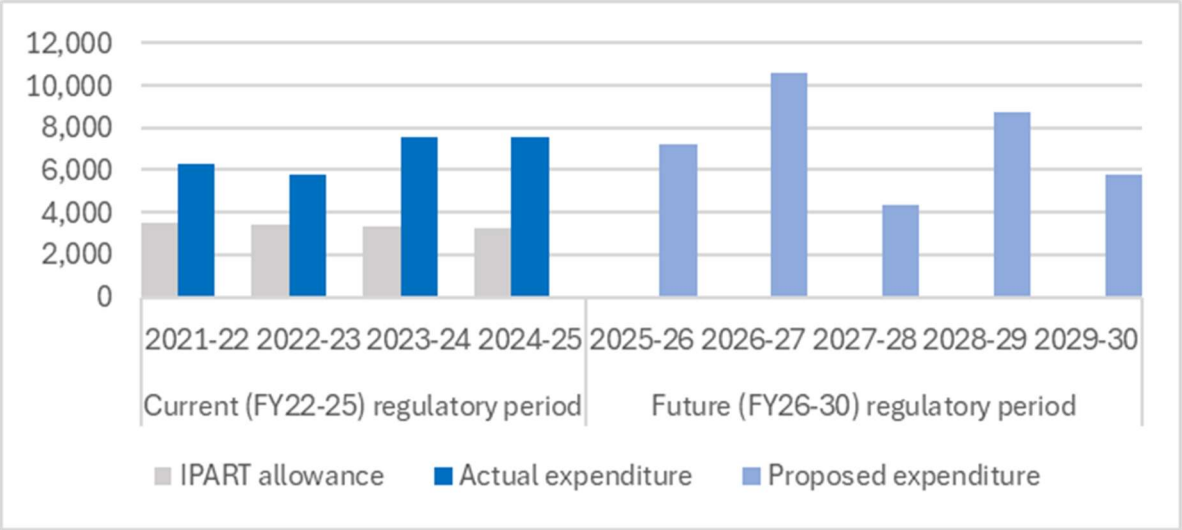

Figure 24: W06-02 Water plan development (inland) 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The primary reason why actual expenditure has exceeded IPARTs allowance for this activity is because the allowance determined for the current period did not cover the entire workload involved in developing and maintaining coastal WSPs. For example, IPARTs allowance covered costs for plan extension, replacement and amendment but it did not cover contribution to the statutory review and audit of plans nor work on priority projects required from audit and review recommendations to the minister, to then support plan replacement and implementation.

This activity met **21% (3/14)** of its output measures and performance indicators for this period, as of financial year 2023-24. All output measures and performance indicators are expected to be met by June 2025. See the current period performance against output measures and performance indicators in Table 33 below.

Table 33: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM43 - NRC review report submitted for plans due to expire within the 2021 IPART period to Minister and Minister endorses Department recommendation for inland WSPs to be replaced or extended. **Output = 13 Met**	Review report submitted on time = 100% **Met**	All anticipated NRC review reports have been submitted and recommendations endorsed by the Minister.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM44 - WSP rules are reviewed, and updates proposed where required as part of plan replacement. Associated updates to WRPs are also identified. Output = 13 **Partially met as of 2023/24 (6/13)**	Statewide Index updated on 5 yearly schedule to support RCI production = 100% **Partially met as of 2023/24 (46%)**	Completed for 6 of 13 inland WSPs as of 2023/24. Work on 2024/25 replacement plans regarding this output measure is significantly progressed and will be completed by 2nd half 2024.
OM45 - Public exhibition of draft replacement inland WSPs (and any associated WRP updates) is completed Output = 13 **Partially met as of 2023/24 (6/13)**	Public exhibition completed in line with expected timing = 100% **Partially met as of 2023/24 (46%)**	Six plans due for replacement by 2024 completed their public exhibition (between June and Dec 2023). Seven plans due for replacement in 2025 are not completed as prior tasks have not progressed or completed. Work on 2025 replacement plans regarding this output measure is anticipated to be completed in the second half of 2024.
OM46 - Replacement inland WSP submitted for approval to commence and amended WRP submitted for accreditation to Commonwealth: Output = 13 **Partially met as of 2023/24 (6/13)**	Replacement WSPs submitted for approval in line with expected timing = 100% **Partially met as of 2023/24 (46%)**	Six plans due for replacement in 2024 were all submitted for approval. Plans due for replacement in 2025 have not progressed as prior tasks have not progressed or completed. Work on 2025 replacement plans regarding this output measure is anticipated to be completed by June 2025.
OM47 - Replacement inland WSP has commenced. Output = 13 **Partially met as of 2023/24 (6/13)**	Replacement WSPs are commenced in line with expected timing = 100% **Partially met as of 2023/24 (46%)**	Six replacement plans commenced 1 July 2024. Work on 2025 replacement plans regarding this output measure is anticipated to be completed in 2025.
OM48 - Amendment to inland WSPs/WRPs commenced as required (separate to those undertaken as part of plan replacement	N/A	Twenty-six inland WSP amendments have been completed as of 23-24 period.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
processes during the IPART period). **Met**		
OM49 - Water Resource Plans accredited in line with Basin Plan 2012 (Basin Plan) and Commonwealth Water Act requirements. Output = 20 **Largely met as of 2023/24 (16/20)**	WPSs accredited in line with expected timing = 100% **Largely met as of 2022/23 (80%)**	Sixteen of 20 Water Resource Plans accredited in line with the Basin Plan 2012 (Basin Plan) and Water Act requirements. Outstanding WRPs are anticipated to be resubmitted by December 2024.
OM 50 - NSW WSPs commenced prior to accreditation of NSW WRPs Output = 9 **Largely met as of 2022/23 (7/9)**	N/A	Seven of 9 NSW WSPs commenced prior to accreditation of NSW WRPs. The one outstanding plan area is anticipated to be completed in the second half of 2024.

Delivery of water resource plans as proposed during the reporting period was largely constrained by external factors such as MDBA assessment and feedback timeframes which have been quite lengthy and included many iterations of document review and updates, as well as issues associated with intellectual property for First Nations regarding the gathering and use of their information as part of the WRPs. During the current period, changes were proposed to the number of plans to be progressed through the water planning cycle compared to what was identified at the start of the reporting period. This was primarily related to the Natural Resources Commission (NRC) bringing forward several s43A plan reviews enabling the progression of some plan replacements ahead of schedule. Agreement of an updated review schedule for plans due to expire in 2026 is still under discussion.

Proposed services and costs for the 2025 determination period

The is forecasting a substantial increase in required activities and services from this activity in the next period. This is due increased resources required to address to the cyclical nature of water planning, with a high number of coastal plans due for review, replacement, extension and/or amendment in the coming years. The increase in forecast expenditure represents a proportional increase in the staff required to deliver the services and is also related to improvements in how we estimate costs along with increased input to First Nations engagement, implementation of state strategies, and several priority projects to deliver contemporary plans. Additionally, work is being progressed to consider the implications of climate change on regulated river systems. This work is initially focused on inland regulated rivers but will be expanded to cover all regulated river water sources in the state over the

coming years. This will include review of the method developed by the independent Office of the Chief Scientist. This is a first step in broader climate change considerations across planning.

Proposed efficiencies

Over the current period, several efficiency measures to improve water planning processes during the current period have been implemented over the current period. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy. These improvements will continue and are reflected in forecast costs for the future period. In addition to the existing measures, we will continue to improve efficiency beyond 2025 through:

- developing and applying tools to support the categorisation of plan efforts to manage planning requirements and associated workloads more sustainably
- developing an overarching program management approach to delivery, covering all project components, to more clearly forecast resource requirements
- the introduction of WSPs Implementation Programs and Monitoring, Evaluation and Reporting Plans, which will inform plan reviews and streamline implementation
- ongoing updates of the WSP replacement manual, including addressing current gaps to streamline processes across the planning group
- continuing to work with the NRC to prioritise their review recommendations and to spread the work of plan review more evenly over time by advancing some plan reviews and applying interim extensions to others. This is in recognition that the forward schedule of expiring plans is not evenly spread from year to year, so the expenditure and delivery of outputs will vary from year to year
- improving the accuracy of budgeting for public exhibition and consultation activities, as well as reducing travel costs as alternative consultation approaches are used (where appropriate). Note, face-to-face consultation maintained where required, e.g. First Nations engagement
- access to new scientific information and data (received from priority projects relating to climate change, LTAAEL, risk assessment methodology and transferability between plan or water source areas)
- continuing internal discussions to clarify roles and responsibilities to reduce overlap and to confirm expectations for delivery of key products.

Additionally, the department has removed the costs of inefficient peaks in the statutory water planning process due to previous decisions to release plans in packages. Customers won't have to pay for this, and it will make efficiency savings through introducing a risk-based planning which will mean lower cost for lower risk plans.

Activity drivers

Below are the drivers of the activity cost, including changes that make this activity necessary.

- *Water Management Act 2000:*

- Audit of plans – under s 44, the NRC is to audit a WSP within its first 5 years to determine whether its provisions are being given effect to.
- Review of plans – under s 43A, the NRC is to review a WSP within the 5 years before it is due to expire to determine whether the water sharing provisions have contributed to intended outcomes or if changes are warranted.
- Extension of plans – under s 43A, a WSP may be extended beyond its initial expiration date on the recommendation of the NRC.
- Replacement of plans – if a plan is not extended, it may be replaced under s 43. When replacing a plan, the draft plan must be made according to the requirements outlined in Chapter 2, Part 3, Division 8 of the NSW WM Act, including requirements for public exhibition.
- Amendment of plans – under s 45, a plan may be amended by an order published on the NSW legislation website (if circumstances outlined in the Act are met).

- National Water Initiative:
  - As a signatory to the National Water Initiative, NSW is required to prepare water plans consistent with the initiative.
  - This activity forms one of the key water planning and management activities listed in the NWI's pricing principles (Section 3, p 13): 'developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use'.
- Natural Resources Commission reviews and audits:
  - As a result of statutory processes, the work undertaken within this activity is also driven by the recommendation made by the NRC in its review and audit of WSPs provided to the minister. The department considers the various recommendations and suggested actions, which can involve significant work as part of plan replacements or amendments.
  - The timing of review and audits also drives the service delivery of this activity. Due to the large number of plans due for expiry in 2026, the NRC in consultation with the department has scheduled its review and audit program to help stagger this work and the replacement of WSPs within required statutory timeframes.
  - The department is rolling out WSP evaluations at year 8–9 of the WSP term, which will inform plan review and audits in the future.
- Key water strategies:
  - NSW Water Strategy (SWS) – the SWS contains 7 strategic priorities focused on meeting core objectives based on the NSW WM Act. As part of implementing the strategy, WSPs often contribute to the implementation of specific actions to deliver strategy outcomes.
  - Groundwater Strategy (GWS) – the GWS delivers on a key priority of the SWS by ensuring an enhanced, statewide focus on sustainable groundwater management for the next 20 years.
  - Aboriginal Water Strategy (AWS) – the NSW Government is committed to partnering with Aboriginal people to codesign a statewide AWS that will deliver water rights for communities and include their interests in water management. Water Planning is working with this team to

engage Aboriginal people in water planning activities and consider how outcomes of the strategy may be implemented through water planning work.

— **Regional Water Strategies (RWS)** – five coastal regional water strategies have been developed, which look at climate evidence to understand how much water an area 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 over the next 20–40 years. Often, given the nature of the regional strategies, some of the actions identified may be more likely to be implemented through changes to our WSPs, or outcomes of these actions will result in policy and process that require changes to water sharing arrangements.

- **Stakeholder views and customer expectations:**
  — 'What matters to our customers' insights report undertaken in April 2023 showed all customer groups confirmed as a priority an expectation of confidence that management of water sharing, and rural floodplains is driven by evidence-based decision making.

Dependence of W06-02 with other WAMC activities

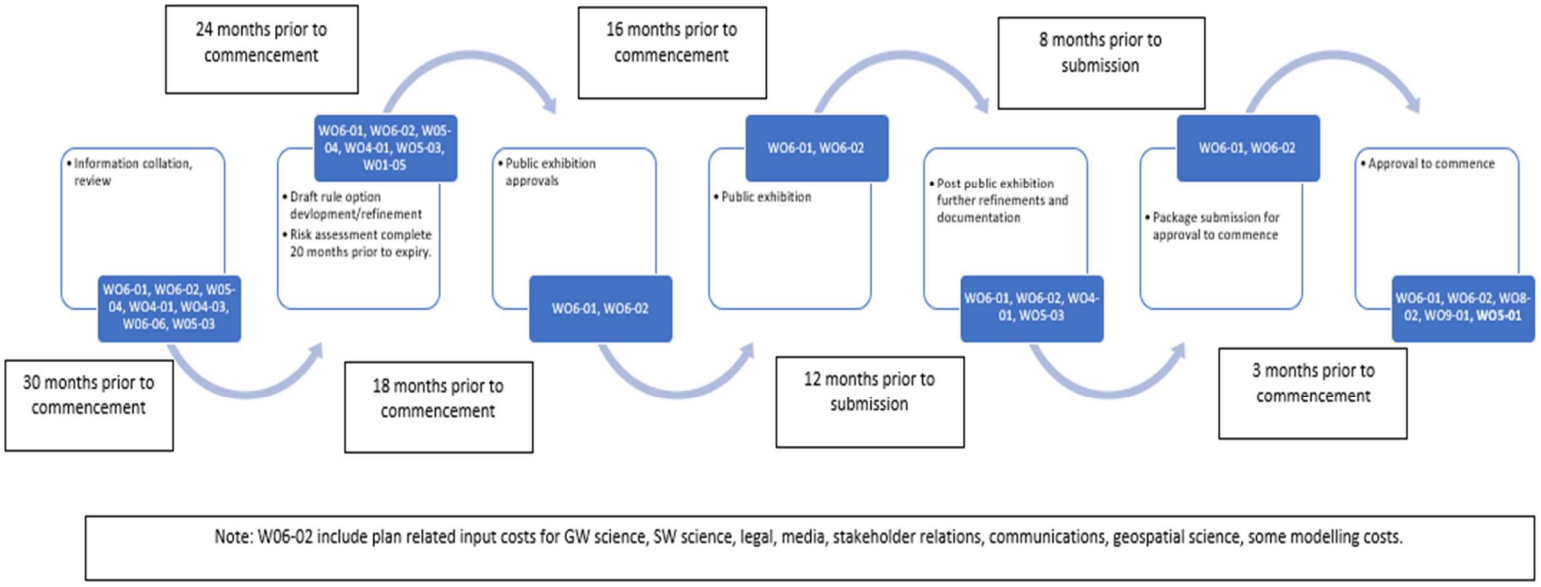

Figure 25: WAMC Water Sharing Plan cycle

W06-03 Floodplain management plan development

Description

This activity involves the development, audit, review, amendment, or replacement of rural floodplain management plans (FMPs) to comply with the NSW Water Management Act 2000 (WM Act); including the consultation activities, the technical work associated with plan development, and the implementation including monitoring, evaluation and reporting for inland rural floodplains.

The NSW Department of Climate Change, Energy, the Environment and Water is the lead agency responsible for making and implementing FMPs under the NSW WM Act. The development, review and audit of water sharing, and other water management plans are key elements of the NSW WM Act and are critical to achieving the Act's objectives. Further, this activity forms one of the key water planning and management activities listed in the NWI's pricing principles.

See the dependence of planning with all the input activities in Figure 27 below.

Expenditure

Table 34: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Floodplain management plan development	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	2,559	2,505	1,747	1,624					
Actual expenditure	1,731	9,234	9,771	9,771					
Proposed expenditure					7,201	6,136	6,799	6,528	6,965

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

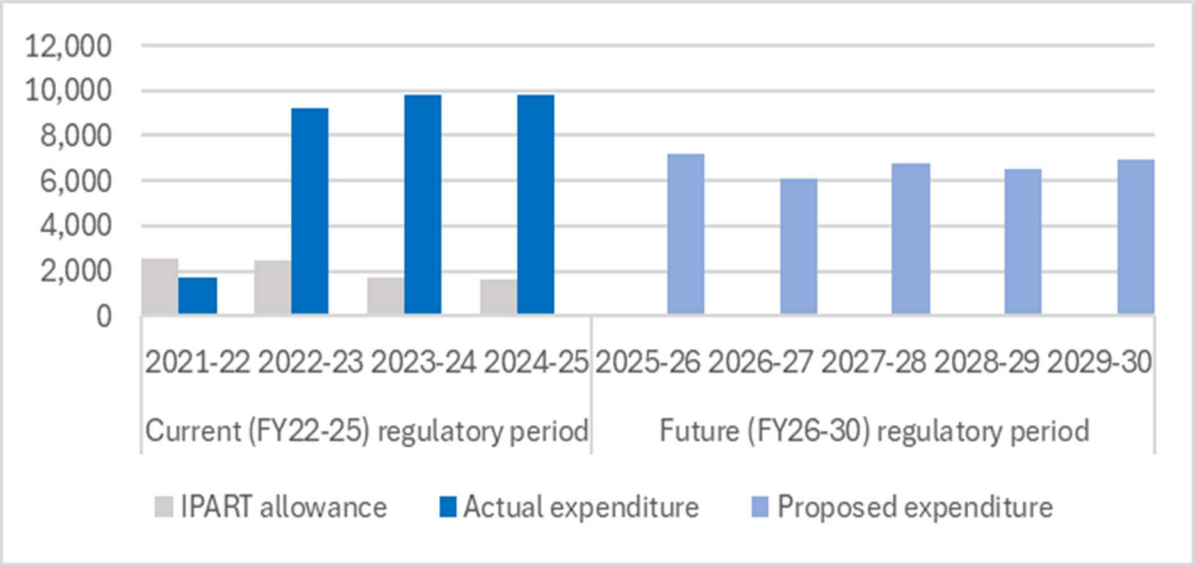

Figure 26: W06-03 Floodplain management plan development 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The primary reason why actual expenditure has exceeded IPART's allowance for this activity is because the allowance determined for the current period did not cover the entire workload involved in developing and maintaining rural FMPs. For example, IPART's allowance covered costs for plan replacement and amendment, but it did not cover delivery of the statutory review and contribution to the audit of plans.

In July 2022, a dedicated Floodplain Management branch within the Water Planning division was established. This restructure included the appointment of a manager (floodplain planning) and manager (floodplain assessments) and the start of a major recruitment drive to build the team's capacity to deliver the work program in full. In 2021, a business case was submitted to the Australian Government that secured funding for a multi-agency accelerated compliance program, led by the department, to bring priority unapproved flood works in the northern Murray–Darling Basin into compliance. The current expenditure for this program aligns with proposed expenditure in the next period to complete accelerated compliance in the southern Murray–Darling Basin.

Performance over the current period has been strong, with this activity having met **86% (5/6)** of its output measures and performance indicators for this period, as of the financial year 2023–24. All the output measures have been met or will be met by the end of the current determination period. See the current performance against output measures and performance indicators in Table 35 below.

Table 35: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM51 - Number of S43 review reports submitted for FMPs due to expire. **Output = 10 Met**	N/A	All anticipated NRC review reports have been submitted to the Minister.

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM52 - Number of S43 review reports submitted. **Output = 3 Met**	N/A	All anticipated NRC review reports have been submitted to the minister.
OM53 - Number of FMPs where rules are reviewed, and updates proposed where required as part of amendment or replacement. **Output = 10 Met**	N/A	This measure has been exceeded with rule reviews completed for nineteen FMPs as of 2023-24. An additional ten are anticipated to have rules reviewed in 2024-25.
OM54 - Number of amended or replacement FMPs have public exhibition completed. **Output = 7 Met**	N/A	All anticipated FMPs have completed public exhibition as of 2023-24 with another four public exhibition periods anticipated to be completed in 24-25.
OM55 - Number of amended or replacement FMPs submitted for approval. **Output = 4 Met**	N/A	All anticipated FMPs amendments were submitted for approval complete as of 2023-24 with another 2 replacement plans anticipated to be submitted in 24-25.
OM56 - Number of FMPs amended or replaced. **Output = 7 Largely met as of 2022/23.**	N/A	The amendment of six out of seven FMPs completed in 2023/24. Two replacement plans anticipated to commence 1 July 2025 and the remaining 2 in December 2025.

It should also be noted that the measures fail to capture the full scope of work undertaken such as the progression of key policy positions supporting FMP development or amendment, and the development of supporting material such as guidelines to assist WaterNSW in the assessment of applications for flood work approvals.

Proposed services and costs for the 2025 determination period

the department is forecasting a substantial increase in required activities and services from this activity in the next period. This is due to the cyclical nature of water planning, with a high number of FMPs due for replacement and amendment in the coming years. The increase in forecast expenditure is also a result of:

- hiring dedicated “in-house” modellers, spatial analysts and ecohydrologists for FMPs

- assessment and prioritisation of unapproved flood works in the southern Murray-Darling Basin floodplains and subsequent implementation of an accelerated compliance program for these works.

Proposed efficiencies

The following efficiency measures have been implemented in the current period. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy:

- having a dedicated technical and planning team whose focus is on the delivery of the FMPs.
- having a template FMP (including map templates) that is simpler, which saves time and resources when developing or replacing FMPs.
- having standard processes documented, including procedures for stakeholder consultation and ministerial approvals (supported by water deliverables), which saves time by giving clear direction to staff
- preparing clear and easy-to-understand communication materials on the department website to avoid potential confusion and stakeholder dissatisfaction that may lead to delays in plan delivery (including a website review, supported by the Water Communications, Media & Engagement team)
- streamlining the interagency review process as part of an overall governance framework for FMPs to maximise the contribution of our water sector agency partners to provide feedback on new or replacement plans or on plan amendments within a smaller period.

These improvements will continue and are reflected in forecast costs for the future period.

Activity drivers

Below are the drivers of the activity cost, including changes that make this activity necessary.

- *Water Management Act 2000* :
  - Audit of FMPs – under s 44, the NRC is to audit an FMP within its first 5 years to determine whether its provisions are being given effect to, that is, whether the FMP is being implemented and processes are in place.
  - Review of FMPs – under s 43, the department is to review an FMP within the 5 years before it is due to expire to determine whether the provisions have contributed to intended outcomes or if changes are warranted.
  - Replacement of FMPs – an FMP is to be replaced under s 43 at the end of 10 years.
  - Developing or replacing FMPs – FMPs are Minister's Plans under the NSW WM Act and must meet specific requirements, including:
    - Chapter 2, Part 3 Management Plans, Division 1, Division 5 Floodplain Management, and Part 4 Minister's Plans for the making of management plans

        - Chapter 2, Part 3 Management Plans, Division 8 Procedures for making management plans (including consultation, concurrence, duration, review, auditing and amendment requirements).
    - Amendment of FMPs – under s 45, an FMP may be amended by an order published on the NSW legislation website (if circumstances outlined in the NSW WM Act are met, primarily if it is in the public interest to do so).
    - Implementation of FMPs – accelerated compliance of priority unapproved flood works – sections 91D and 95 of the NSW WM Act and section 11 of the *Natural Resources Access Regulator Act 2017*.
- National Water Initiatives:
    - This activity fits the description of 2 of the key water planning and management activities listed in the NWI's pricing principles (section 3):
        - *developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use, implementing these plans/strategies/frameworks and monitoring compliance against the plans.*
    - In addition, this activity fits the description of the following water planning and management activities listed in the NWI's pricing principles (Appendix 3):
        - *development of other water plans, developed at a local or catchment level to address other water management issues*
        - *review of water resource plans/development of new plans*
        - *hydrological and hydraulic assessment*
        - *effects of land use change, land clearing, climate change.*
- The department review and Natural Resources Commission audits:
    - As a result of statutory processes, the work undertaken within this activity is also driven by the recommendations made by the NRC in their audit of FMPs and the department reviews. The department considers the various recommendations and suggested actions, which can involve significant work as part of the FMP replacement or amendment.
- Strategies:
    - NSW Flood Prone Land Policy – FMPs operate alongside urban floodplain risk management planning undertaken by local councils as part of the implementation of the NSW Flood Prone Land Policy (within the Flood risk management manual 2023). Further, FMPs identify major floodways or areas of highest risk during flooding. The data and information generated during plan development is often shared with flood combat agencies as part of emergency response preparedness (e.g. SES and Local Land Services).
    - NSW Water Strategy – The strategy contains 7 strategic priorities focused on meeting core objectives of the Act. As part of implementing the strategy, service delivery of this activity contributes to several priorities, including landscape scale action to improve river and catchment health, better integration of land use planning and water management, enhancing modelling capabilities and making more data and models openly available.

- **Aboriginal Water Strategy (AWS)** – the NSW Government is committed to partnering with Aboriginal people to codesign a statewide AWS that will deliver water rights for communities and include their interests in water management. The Planning Division (Floodplain Management) engage Aboriginal people in FMP activities and consider how outcomes of the strategy may be implemented through FMP work.
- **Regional Water Strategies** – Twelve regional water strategies are being developed across the state to manage the risks to water availability over the next 20–40 years. For those inland regions that have FMPs, the strategies have identified actions to improve floodplain connectivity. This means that the FMPs provide the regulatory backdrop for more action-based programs such as the Improving Floodplain Connections project (bringing unapproved flood works into compliance) and the Gwydir Reconnecting Watercourse Country Program (identify and remove constraints to environmental water flows).

- **Stakeholder views and customer expectations:**
  - The 'What matters to our customers' insights report undertaken in April 2023 showed all customer groups confirmed as a priority an expectation of confidence that management of water sharing and floodplains is driven by evidence-based decision-making.
  - Recent widespread flooding in the southern Murray–Darling Basin and subsequent increase in customer reports of unapproved flood works in the landscape have highlighted the importance of regulating rural floodplain development. Community feedback in the southern valleys has also highlighted the need for clear rules as well as strong enforcement from the NSW Government, through an accelerated compliance program for unapproved flood works. It is vital that the FMPs and the associated data is maintained to ensure that WaterNSW and NRAR have the best available information for the assessment of flood work applications and for enforcement activities.
  - FMPs also provide the statutory backdrop for other NSW and federal government-led floodplain restoration projects, including the Reconnecting River Country Program (Murray and Murrumbidgee) and the Gwydir Reconnecting Watercourse Country Program. Many of the options for addressing constraints to environmental water flows in these valleys include flood works that will require assessment and approval in accordance with the NSW WM Act. The Planning Division (Floodplain Management) also continues to liaise with these teams to identify synergies and efficiencies such as the shared use of flood modelling data and coordination of stakeholder engagement activities.

Dependence of W06-03 with other WAMC activities

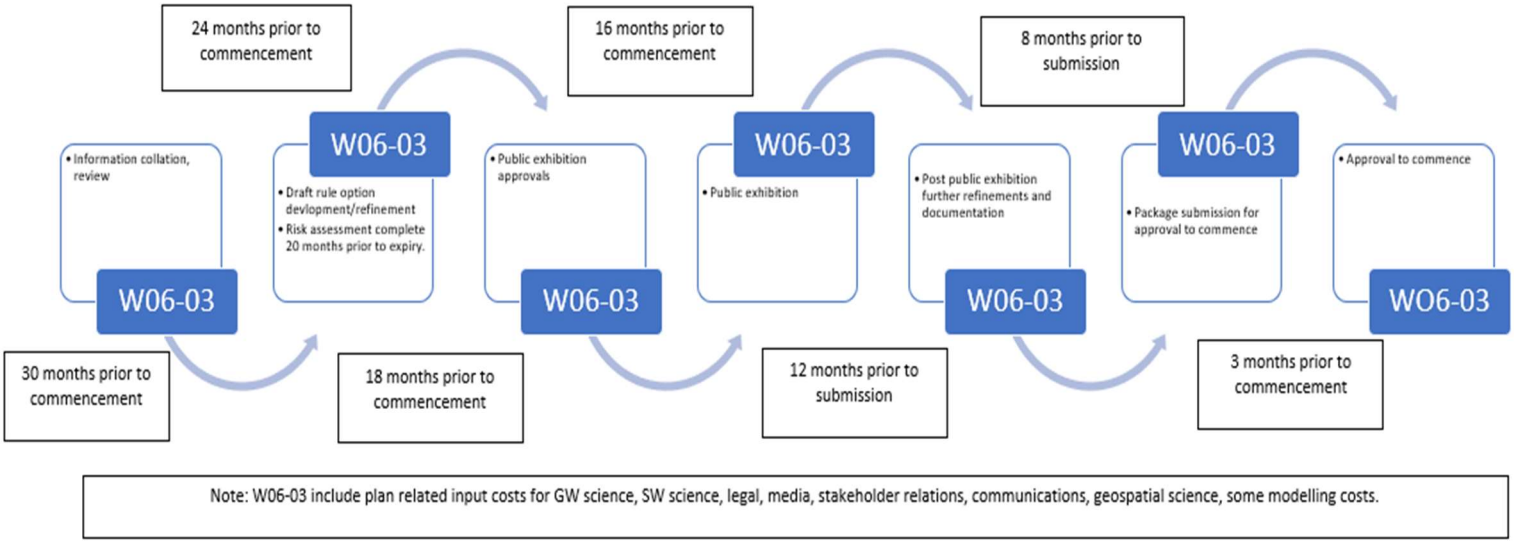

Figure 27: WAMC Floodplain Management Plan cycle

W06-05 Regional planning and management strategies

Description

The water strategies program was developed in recognition that the impacts of climate risk, including the severity and frequency of extreme events such as drought and the changes to long-term water availability, were not well enough understood. The strategies now enable a strategic planning approach that improves water management outcomes through evidence-based policy, planning and infrastructure solutions that respond in an adaptive way to climate risks and evolving drivers of change across NSW.

The water strategies program is an integrated set of water strategies comprised of:

- 3 statewide strategies – the NSW Water Strategy, the NSW Groundwater Strategy and the NSW Aboriginal Water Strategy, which set overall state-level priorities and actions
- 13 regional water strategies – place-based strategies that cover inland and coastal areas and identify packages of solutions for each region
- 2 metropolitan water strategies that cover the area of operations for Sydney Water and Hunter Water – the Greater Sydney Water Strategy and Lower Hunter Water Security Plan.

The water strategies program is aligned to the objectives of the NSW WM Act, through the priorities of the NSW Water Strategy that cascade through the program. The strategies provide an evidence base, options analysis and direction to improve and support a range of statutory functions, including water sharing plan amendments. It sets the strategic direction for the NSW water sector over the long term and provides a platform for NSW water agencies to work together to avoid reactive responses and a siloed, project-by-project approach.

Over the 2021–25 determination period, the regional planning and management strategies activity code (W06.05) has covered the development of regional and metropolitan water strategies, including identification of objectives, needs and problem definition, data and options analysis, economic and risk evaluation, stakeholder engagement and communication. Moving into the 2026–30 period, actions will transition from strategy development to strategy implementation, improving water management outcomes through targeted, prioritised implementation of actions that are informed by risk, cost and customer preferences.

This activity will also cover the critical role provided by robust governance arrangements supporting oversight and decision-making that is efficient and effective, and enabling adaptive management methods supported by evaluation and review. This will ensure that the strategies program remains current and able to identify and respond to changing circumstances and underpinning assumptions. These include water demand and supply forecasting, data, trends and technology; economic conditions, population growth and associated housing and infrastructure policy; social preferences; and how climate change assumptions and responses evolve.

Expenditure

Table 36: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-05	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Regional planning and management strategies	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	7,168	7,018	5,976	5,851					
Actual expenditure	12,773	19,684	19,680	19,680					
Proposed expenditure					9,776	8,535	8,860	8,736	8,820

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

Note: Metropolitan water strategy costs are planned to be sought from Sydney Water and Hunter Water through direct licence charges to WaterNSW's Greater Sydney business and Hunter Water.

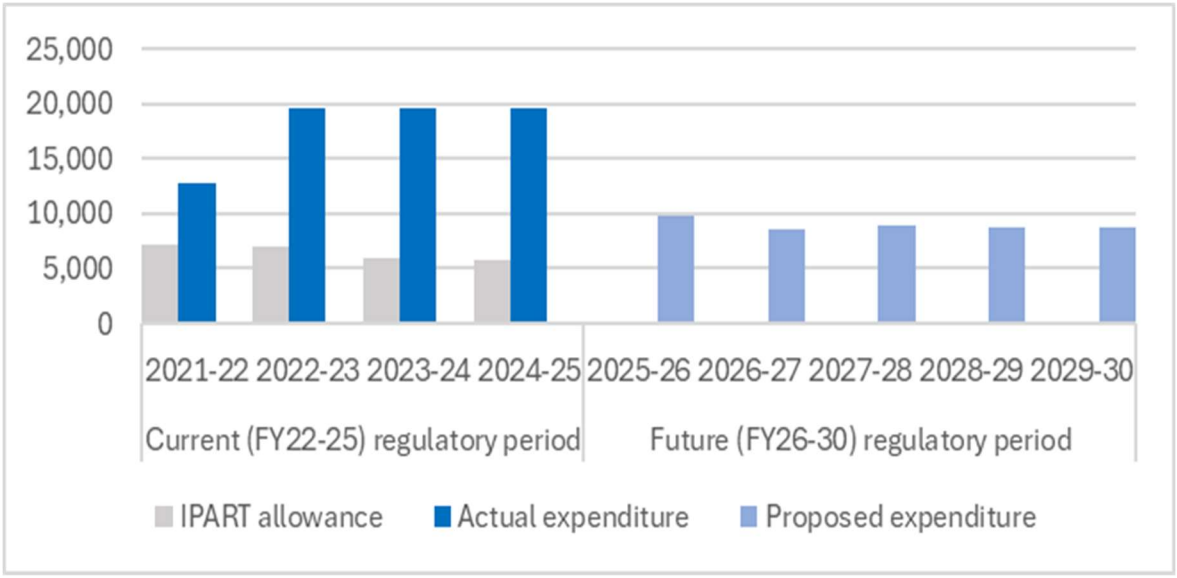

Figure 28: W06-05 Regional planning and management strategies 2026-30 operating expenditure ($000, 2024-25)

Current period performance

There is a large overspend compared to the IPART allowance in the current period. This overspend was not forecast at the time of the last IPART submission. The overspend largely relates to work funded through other sources, which will be WAMC-eligible activities for the 2026–30 determination period and need to be considered as business as usual (BAU) going forward. These include the implementation of statutory or core actions from the NSW Water Strategy, NSW Aboriginal Water Strategy, NSW Groundwater Strategy, Greater Sydney Water Strategy and Lower Hunter Water

Security Plan, and establishment of a climate program and supporting datasets. Further, this overspend relates to external funding required to allow the finalisation of regional water strategies.

A full suite of regional, metropolitan and state strategies will be in place by the end of the current period. This integrated program is now enabling adaptive responses and staged implementation of strategically aligned actions, which have been identified by the strategies as having community support and the best prospects of meeting subsequent business case and approvals requirements.

Market constraints and economic conditions have led to a significant increase in the estimated cost of strategy implementation, including infrastructure solutions. This has increased pressure to ensure that regional needs and problem definitions are clear, to deliver actions and projects in a sequenced way and to ensure customer and stakeholder expectations for benefits and costs are addressed. As the water strategy program is maturing, planning and preparation for drought and climate adaptation is progressively being embedded as an ongoing 'business as usual' activity, rather than triggered through emergency responses and extreme event provisions that are often inefficient and do not allow sufficient time to respond.

At the last determination, IPART reprofiled regional water planning and strategy costs, being concerned that changing circumstances and easing of drought conditions at the time meant that the department had not fully considered what planning initiatives should take priority and expressing an expectation that the program was likely to be smaller than what the department had proposed. This decision resulted in a reduction of costs allowed and ultimately resulted in additional funding being required from the NSW Government to deliver the full suite of strategies required by government across the state.

Additional funding was sought beyond the $20.48 million allowed through the WAMC determination to deliver the entire water strategy program and meet the expectations of government. This included $3.4 million from the Snowy Hydro Legacy Fund (SHLF) and $26 million from consolidated revenue. Additional funding totalling $19.2 million was approved by NSW Treasury in July 2023 as part of the 'extreme risks' funding package to support the long-term water strategies and implementation of priority actions, bringing the total additional funding to $48.6 million and enabling:

- completion of all remaining regional water strategies to ensure a consistent approach to identifying challenges and opportunities at a place-based level, recognising the importance of community and customer-informed responses to achieve long-term outcomes that are sensitive to the needs of each region
- development of the Fish River–Wywandy Regional Water Strategy, an additional strategy specifically addressing energy transition and town water security issues in the Lithgow, Oberon and Upper Macquarie areas
- targeted implementation of priority actions from the NSW Water Strategy including a NSW Groundwater Strategy, new policy and regulation, better integration of land and water management, improved data and monitoring and support towards resilient cities and towns
- development of the NSW Aboriginal Strategy
- continued expansion planning and business case development for the Sydney Desalination Plant – the best first option to reduce the existing water security risk as identified in the Greater Sydney Water Strategy

- critical climate work, essential to underpin the development of the strategies and other water programs, including development of climate risk data sets and the delivery of statutory functions including water sharing plans.

Total funding for the period from WAMC customers, consolidated revenue, SHLF and the 'extreme risks' funding package totalled $69.1 million over the 2021–25 regulatory period, averaging $17.275 million per year.

In addition, costs recovered via Hunter Water for the 4-year period (January 2019 – December 2023) that covered costs incurred by the department to support the development and first year of implementation of the Lower Hunter Water Security Plan were $1.55 million. This activity was eligible for inclusion in the 2021–24 WAMC pricing proposal as a regional planning and management activity for cost recovery, however, given the existing mechanism in place at the time between the department and Hunter Water, this was not considered.

As of the FY2023–24, delivery of outputs OM61 (Sydney Metropolitan Water Strategy) has been met, with delivery of OM57 and OM58 (regional water strategies and associated implementation plans) on track for completion ahead of June 2025. Delivery against one element of OM60 was behind time, while OM59 (4-yearly review of strategies) did not have deliverables due during the current reporting period. See the current performance against output measures and performance indicators in Table 37 below.

Table 37: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM57 - Regional water strategies completed and in place. Output = 11 **On track to be met as of 2023/24 (8/11)**	N/A	Eight regional water strategies are complete and in place (in addition to the Greater Hunter RWS which was completed before the current period). The Lachlan, NSW Murray and Murrumbidgee strategies are expected to be published by the end of 2024, taking total published strategies to 11 by the end of June 2025.
OM58 - Regional water strategies implementation plans developed. Output = 11 **On track to be met as of 2023/24 (8/11)**	Action Plan published within 3 months of each Regional Water Strategy being finalised = 100% **Met as of 2023/24 (100%)**	Eight implementation plans are complete and in place (not including the Greater Hunter). Implementation plans for the Lachlan, NSW Murray and Murrumbidgee are anticipated to be published alongside their strategies by the end of 2024, taking total implementation plans to 11 by the end of June 2025.
	Implementation plans reported against annually = 100% **Met as of 2023/24 (100%)**	
OM59 - Regional water strategies updated on a rolling	N/A	New strategies did not fall due for review during this price path period, noting however that work towards the evaluation and review of the Greater Hunter Regional

Output Measure 2021-25	Performance Indicator 2021-25	Comment
annual cycle and associated Action Plan updated. Output equates to review on 4-year cycle and one third within 2021 period. Output = 4 **Not applicable for current price period**		Water Strategy has commenced. In the current period, the department has reassessed the need for frequent strategy review and is now of the view that a review cycle every 4 years is too frequent to adequately implement and understand the effectiveness of the strategy actions on outcomes and benefits for the region. OM59 is no longer being pursued.
OM60 - Forward program for implementation and MER and public reporting published by June 2021 **Timeframe not met**	N/A	The NSW Water Strategy Monitoring, Evaluation and Reporting (MER) framework was due in June 2021 but completed in December 2021. The MER framework guides the water strategies program to provide an adaptive management approach to water strategies. A progress report on the NSW Water Strategy implementation was undertaken in 2022, and a combined progress report on all water strategies was undertaken in 2023. Both reports are published on the department website, demonstrating accountability to strategy delivery and providing transparency. A process evaluation of the NSW Water Strategy was undertaken in June 2024, and findings are informing future implementation plans.
OM61 - Completion of Greater Sydney Water Strategy in 2021, including: a water efficiency and conservation framework a performance and monitoring framework. **Met**	N/A	The Greater Sydney Water Strategy was completed in 2021 and published in 2022. Further, the NSW Water Efficiency Framework has been completed.

Activities delivered under this code in the current period are achieving outcomes that include improved efficiency through the selection of the best mix of options to adaptively address the water-related needs, risks and changing circumstances of customers and communities across NSW. They are also helping customers and communities to be better informed about long-term climate and business risk and are essential to build trust in the evidence base and decision-making processes that inform water management decisions of relevance to them.

The climate risk work progressed over the current period is viewed as an essential part of the ongoing business of the department, and funding for continuation of this work is being sought as part of the WAMC pricing proposal for the 2026–30 determination period as a BAU activity of the department. An independent review was undertaken of the development of the climate data sets and their use in hydrologic models to assess the impact of climate change on river flow and catchment hydrology. It found that the method is fit-for-purpose, providing the best available knowledge of climate risk. This independent review continues to build stakeholder confidence in the science supporting the conclusions about climate variability and climate change used in the regional water strategies. The method will now be used to inform statutory obligations, such as the review of minimum inflows and amendments to regulated river water sharing plans across the state.

Water strategies have also anticipated and better positioned the department and government more broadly for major emerging water management challenges. For example, the Western Regional Water Strategy identified connectivity as a key challenge and had engaged with key stakeholders to provide a range of potential management actions to address these challenges. A subsequent independent connectivity review commissioned by government has used the evidence base provided by this strategy to strengthen the recommendations made within the RWS. These recommendations are being incorporated into the remake of water sharing plans for the Barwon–Darling and catchments upstream. The response by government to the later Independent Review by the Office of the Chief Scientist & Engineer into 2023 fish deaths at Menindee has also drawn heavily on actions identified by the NSW Water Strategy and the Western Regional Water Strategy as viable priorities to improve river and catchment health.

A further example is the remake of the water sharing plan for the Greater Metropolitan Region Unregulated River Water Sources in 2023, which includes the introduction of scaled environmental flows from dams in the Upper Nepean to mimic natural flow patterns and address continued decline in river health in the Hawkesbury–Nepean River, informed by the Greater Sydney Water Strategy and subsequent modelling and data analysis as part of implementation.

Proposed services and costs for the 2025 determination period

Costs for the 2026–30 determination period for this activity have been identified in accordance with IPART's water regulation handbook, with a focus on outcomes-based implementation informed by customer needs and preferences and supported by the extensive stakeholder engagement that underpinned the development of water strategies. Understanding the impact of climate change on water, assurance of ongoing water reliability and security, the importance of groundwater and environmental water management, and confidence in how decisions are made are identified priorities for WAMC customers for the next determination period, and the water strategies program is integral in delivering these. The department will have a key role in the implementation of priority strategy actions

over the pricing period, focused on delivering outcomes supported by adaptive management. These include:

- delivering government priorities for climate adaptation and resilience, economic recovery, industry and energy transformation, food security and environmental outcomes through statutory and regulatory functions. These require a step-change in BAU activity in some cases to respond to our new knowledge of climate risk and its implications for water resource management
- ensuring that statutory water sharing plans, water allocation decisions, operating licenses and the remake of the Murray–Darling Basin Plan in 2026 account for long-term drivers including climate change, population growth, net zero transition, food security and major industry changes – implementation of the strategies to inform and direct these will require complex policy development, modelling, monitoring and data collection to inform decision-making
- coordinated implementation across the strategies program that is targeted, risk-based and prioritised, applying processes that ensure accountability and transparency of implementation. The department will continue to have a key role in supporting other agencies and water managers to design and implement water initiatives in line with the strategies through robust and collaborative governance arrangements
- effective, evidence-based monitoring, evaluation and reporting (MER) to ensure that implementation supports both delivery of actions and the achievement of outcomes in an efficient way, using data-informed insights to drive continuous improvement and adaptive management capable of responding to the dynamic nature of strategic water management.

MER for water strategies operates at different geographical and timescales to other MER functions of the department, such as water sharing plan MER. It includes the need to evaluate policy and programs that are not captured in other MER settings, linking the identified outcomes from a strategy to problem definition, analysis of options, policy development and operationalisation through regulatory instruments. Of critical importance is that this MER is capable of identifying when major drivers of change will impact in a way that is likely to change the basis of water management at a regional level – like what we anticipate may happen where crops are viable and how they are propagated in the face of climate change, where region-wide shifts from surface to groundwater may be necessary to shore up water security for critical needs, and what we are currently seeing with regional economic shifts associated with renewable energy investment and net zero requirements.

Outcomes-based approaches to project and program management, informed by MER, is a mandatory requirement placed on the department by NSW Treasury as of 2023. It stipulates that all NSW Government agencies are required to coordinate monitoring and periodic evaluation of their initiatives, both ongoing and new. It also stipulates that monitoring and evaluation should be coordinated, as relevant to the initiative and the timing of the evaluation, to examine:

- implementation
- appropriateness, including continued relevance to government and community priorities
- efficiency
- effectiveness in delivering outcomes
- distribution of outcomes and benefits, and effects on equity (where relevant)

- net social benefit and value for money.

MER is necessary to ensure transparent and accountable implementation of the water strategies program to customers and the community. It is also essential to support the proposed move away from scheduled review and update of each strategy to initiating updates only when assumptions and outcomes fall outside of the intended bounds. MER for the water strategies program is being designed to avoid duplication with existing commitments, utilising data collected for other programs or as stipulated through other regulatory requirements, wherever practical. MER will embed a culture of continuous improvement as a core function of the water strategies program to plan, implement, adapt and review.

The Climate Program will be implemented across the department to deal with new climate challenges, including implementing whole-of-government climate objectives, developing new methods for incorporating climate evidence and maintaining and updating datasets that were originally developed as part of the water strategies program. These are now critical to support a range of water management functions, allowing assessment of the impact of climate change on water resources and the environment through other statutory and planning processes across the department and the broader water sector.

Maintaining these up-to-date datasets is essential to ensure the department continues to satisfy the statutory principles and objectives of the NSW *Water Management Act 2000*, including providing tools to embed climate change considerations into statutory planning, policy and strategy. This data will be used within the next funding cycle to embed climate considerations into the setting of minimum inflow assumptions in a number of regulated plans across the state. The datasets will also allow for consideration of climate change and variability in the development of coastal sustainable extractions, review of sustainable diversion limits within the Murray–Darling (in conjunction with the Australian Government) and incorporating climate considerations into risk assessments for water sharing plans more generally. Climate change will also be a part of floodplain management plan considerations.

Review and update of each of the strategies as part of a regular cycle is not expected to be required, nor to be the most efficient use of funding. For the purposes of forecasting, we have anticipated strategies will only need to be remade over the determination period for those regions experiencing rapid economic transition, where significant changes in water management and use are expected to occur, or where there are changes to the underpinning assumptions that informed the strategy development, such as population projections. The update of these strategies will involve revised modelling and options review as well as additional community engagement, and this has been included in forecast costs.

It is expected that MER may point to the following strategies requiring a review and potentially remake during the determination period:

- Greater Sydney Water Strategy (2022) – impacted by changes to population projections, housing policy influencing development patterns, anticipated key decisions for critical actions such as Sydney Desalination Plant expansion, community acceptance of purified recycled water schemes, flood mitigation and dam safety measures for Warragamba Dam, water conservation and efficiency programs, environmental flows and drought asset response measures that will trigger new modelling and analysis to inform the next portfolio of actions needed in Greater Sydney

- Greater Hunter Regional Water Strategy (2018) – to incorporate contemporary climate data and methods developed since its original making, to account for major economic and energy transitions, population growth and water security risk and to inform government decisions about the allocation of water and ownership of water infrastructure triggered by decarbonisation of the Hunter's economy
- Lower Hunter Water Security Plan (2022) – impacted by changes to population projections, delivery of key water supply augmentation projects such as Belmont Desalination Plant, increased cost of proposed infrastructure solutions and changes to the water security risk profile as a result of dam safety risk mitigation that may require additional modelling and analysis to inform revised implementation options
- NSW Water Strategy (2021) – need for up-to-date identification of emerging directions and issues that are relevant across the state, such as renewable energy transition, flooding and changes to Common Planning Assumptions, and to maintain alignment with a new National Water Agreement
- Macquarie Castlereagh (2023) – impacted by the Central West and Orana Renewable Energy Zone (REZ) and expected population growth in Bathurst and Orange. A number of investigations and reviews are underway to consider long-term water demand and management options including Belubula Water Security Project, the Macquarie Wambul Water Supply Scheme and the Cabonne, Central Tablelands Water Sub-Regional Town Water Strategy. Collectively, these projects may identify options and impacts on water supply and demand at a regional scale
- Murrumbidgee Regional Water Strategy (expected to be finalised late 2024) – impacted by the South-West REZ and expected population growth in Wagga Wagga and around the Australian Capital Territory, emerging PFAS risks (per- and polyfluoroalkyl substances), and the 20-year renegotiation of the operating licence settings for Snowy Hydro.

Proposed efficiencies

Undertaking long-term strategic water planning creates efficiencies for customers, the water sector, stakeholders and expenditure of public funds. The investment in strategy development and implementation is a small fraction of possible investment in water infrastructure and is an efficient way to identify the best package of feasible options to address a region's key water challenges. This helps drive efficient government spending. For example, $18.1 million was spent on the Mole River Dam Strategic Business Case. This was significantly more expensive than the $2 million Border Rivers Regional Water Strategy, which reached the same conclusion as the business case and found the Mole River Dam option to be unviable.

The investment in community engagement, economic and hydrological analysis and options assessment has helped to ensure that implementation as an integrated program progresses with an understanding of the stakeholder concerns, risks and analysis of options, allowing priorities to be identified and creating efficiencies through planned human resourcing.

The strategies also identify critical water sharing changes that need to be made, as well as the development of programs to deliver the changes. For example, several of the issues raised in the Natural Resources Commission (NRC) Review of the Water Sharing Plan for the Macquarie–Bogan Unregulated Rivers Water Sources 2012 have been identified and consulted on through the

development of the Macquarie–Castlereagh Regional Water Strategy. This reduces overall costs by proactively identifying problems and developing solutions with water users.

Embedding MER into strategy implementation creates program-level reporting that meets the expectations of the community. It ensures reviews are undertaken on an as-needs basis through monitoring of assumptions and drivers. Focussing on strategy outcomes will also allow adaptive management where changing circumstances are proactively identified and responded to ensure affordable, fit-for-purpose strategic planning.

Activity drivers

- **NSW *Water Management Act 2000* (WM Act)** – The NSW Water Strategy embeds the objectives of the NSW WM Act into the priorities of the water strategies program, allowing sustainable and integrated water resource management and consideration of the water management principles under the Act as part of strategic planning to complement statutory functions, informed by robust science and planning.
- **Water sharing plan remakes** – The strategies set clear direction and the evidence base for how water sharing needs to respond in the face of regional challenges such as climate change, growth and economic transitions. They also identify issues that work across the smaller regional scale that the water sharing plans cover and interfaces between surface and groundwater considerations. The strategies inform and are operationalised through changes to water sharing plan rules to implement detailed strategy-driven policy reform and evidence-based reviews. The strategies also provide the long-term trajectory for climate futures (20 years+) that are needed to inform the shorter-term step changes that can be effected through the 10-year water sharing plan remake cycle.
- **A new National Water Agreement (NWA)** – This is expected to supersede the current 2004 National Water Initiative by the end of 2024. Importantly, the NWA will include new objectives, outcomes and principles that jurisdictions must address – climate change, and Aboriginal water rights and access – and update existing obligations under the National Water Initiative. The strategies program positions NSW to respond to these new requirements and provide a contemporary response to ongoing obligations, which are required as part of the agreement with the Australian Government to be documented in action plans in the 2 years that follow signing of the NWA. Investing in strategy review or refresh may be required to demonstrate how NSW will achieve some elements of the new NWA, and to maintain alignment with federal obligations.
- **Review of the Murray–Darling Basin Plan** – The review of the Murray–Darling Basin Plan under the *Water Act 2007* (Cth) is due in 2026. This review will focus on four priority themes – climate change, sustainable water limits, First Nations water and regulatory design.[3] These themes are embedded across the strategies program, ensuring NSW is well-positioned to inform and meet the requirements of the new Basin Plan and its review process. The outcomes of this review may trigger requirements for NSW to update or amend water resource plans accredited under the plan. Some

elements of statutory NSW Water Sharing Plans are also accredited, leading to the potential need to remake water sharing plans.

- Delivering customer priorities – Throughout the past 5 years of strategy development, the department has undertaken significant engagement with communities, customers and peak bodies across the state. Customers are supportive of the development of long-term statewide and local strategies to set out a roadmap for improved water resilience and expect to see progress on implementation over the relevant timeframes. As a result, this has informed our understanding of the priorities and preferences of WAMC customers and the inclusion of this activity.
- Operating licences – Regulatory conditions set by IPART for Sydney Water, Hunter Water and WaterNSW create requirements for water quality, asset performance including system performance standards, water conservation including the Economic Level of Water Conservation (ELWC), climate-related planning and risk management, environmental indicators and management that require input and oversight by the department and alignment to metropolitan water strategies.
- NSW Government commitments – The strategies have been a commitment of the current and former NSW Governments and respond to a recommendation from the State Infrastructure Strategy to improve water management and use across NSW. The Productivity and Equality Commission (PEC) Review (2024) observed that the NSW and regional water strategies provide the opportunity to identify statewide and regional issues for local water utilities in each region, recommending further work towards an investment framework underpinned by such strategic planning.

  The PEC Review has proposed reforms focused on the funding of local water utilities (LWUs) including:

  — developing a LWU funding policy, including the establishment of a community service obligation (CSO) funding mechanism to support delivery of basic service levels

  — better regulation, including on improved strategic planning, water quality and environmental regulation, and reforming the approach to the regulation of water security to support the CSO funding mechanism

  — establishing a prioritisation approach and a first sector priorities plan, setting out the NSW Government's priorities for the LWU sector over the short- to medium-term (2 to 4 years)

  — reforming structures and government support for water supply and wastewater services in western NSW.

The NSW Government will be responding to the PEC recommendations, incorporating feedback from LWUs.

W06-06 Development of water planning and regulatory framework

Description

This activity delivers effective and efficient water planning and management for customers.

Under this activity, the NSW Department of Climate Change, Energy, the Environment and Water (the department):

- implements policy decisions made by government for the sharing and management of water resources
- develops, amends and implements subordinate legislation to effectively administer the water management framework
- implements reforms following reviews and enquiries.

This activity involves the testing of scenarios to understand the most effective and efficient policy and regulatory approach. It often requires the development or amendment of subordinate legislation or regulatory instruments. Extensive research, analysis and consultation is needed to ensure the recommended policy position and regulatory option is customer-focused and able to be effectively implemented and understood.

Expenditure

Table 38: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-06	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Development of water planning and regulatory framework	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	1,874	1,835	1,796	1,759					
Actual expenditure	3,091	3,172	3,980	3,980					
Proposed expenditure					2,321	2,256	2,358	2,309	2,354

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

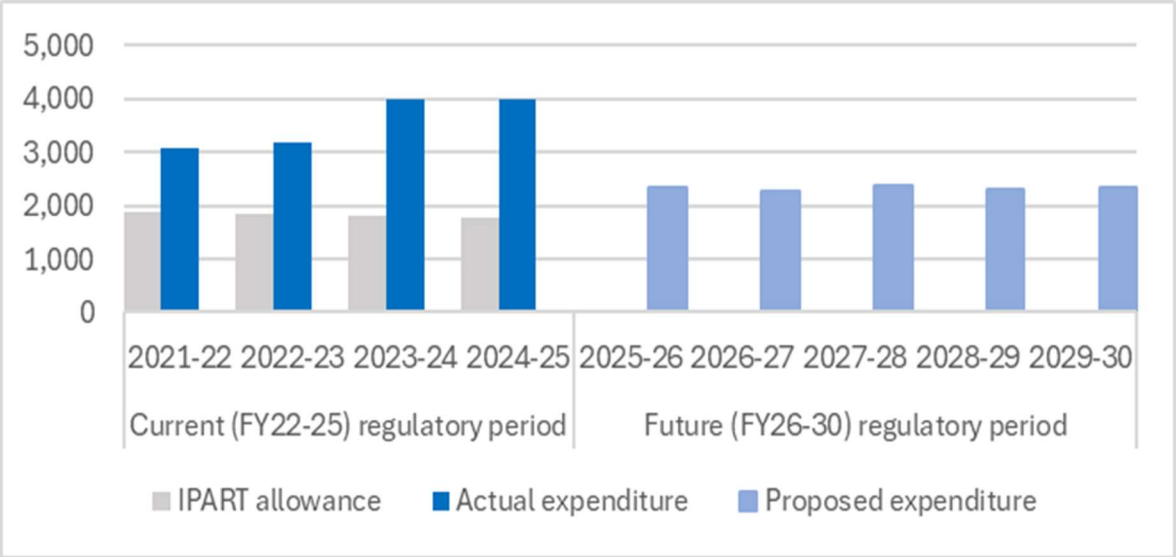

Figure 29: W06-06 Development of water planning and regulatory framework 2026-30 ($000, 2024-25)

Current period performance

The overall expenditure against this activity is overspent relative to IPART's allowance. The increased volume of WAMC-related work and the resourcing required are the drivers for the overspend. Staff time to implement policy decisions and regulatory frameworks form most of this expenditure.

Although the overall expenditure against this activity is overspent relative to IPART's allowance, expenditure for activities such as public consultation and travel have been underspent to date, partly due to the COVID-19 pandemic. Efficiencies in stakeholder engagement have also been achieved through the shift to online meetings and consultation.

However, a balanced increase in consultation and travel is being realised in the final 2 years of the determination period, as face-to-face consultation has increased post COVID-19. In particular, there is an ongoing commitment to face-to-face engagement with First Nations stakeholders, this being essential to effective and meaningful consultation and information-sharing on water management activities. Increases are also expected in expenditure required for advertising to communicate policy and regulatory changes to water users.

A risk assessment framework is used to prioritise work through the policy work program (OM63), ensuring time and resources are allocated to the projects that present the greatest risks or provide significant benefits and opportunities.

Performance over the current period has been strong, with this activity having met **100% (5/5)** of its output measures and performance indicators as of financial year 2023–24. All output measures and performance indicators are expected to be met by June 2025. See the current performance against output measures and performance indicators in Table 39 below.

Table 39: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM62 - Provide a register of regulatory and policy instruments progressed during the year. Output = 5 **Met**	N/A	Output measure exceeded in 2023-24 and is projected to be exceeded again in 2024-25.
OM63 - Policies and regulations supporting the water planning and regulatory framework are developed and reviewed using a risk-based approach. **Met**	A risk-based framework is used 100% of the time for informing the priorities for development of water policy and regulatory instruments. **Met**	A risk-based framework is used 100% of the time for informing the priorities for development of water policy and regulatory instruments.
OM64 - Timely public access to key policies and regulatory instruments. **Met**	Key policies and regulatory instruments are published on the department's website within 4 weeks of their approval = 90% **Met**	Timely public access to key policies and regulatory instruments exceeded in 2023-24.

Proposed services and costs for the 2025 determination period

We are forecasting an increase in expenditure from the allowance for the current determination period. This is none the less a reduction on the expected expenditure for the 2024 financial year to deliver similar levels of work, as efficiencies and more strategic approaches to the work program are implemented. The forecast is the same across all years because the exact level of work and its nature are unable to be reliably forecast on a year-to-year basis. Most of the expenditure under this activity is staff time to implement and operationalise regulatory frameworks and policies.

The department now has strategies in place that are the roadmap for customers to understand what government will look at to review and deliver. This enables the department to take a more strategic approach to the water policy work program. For example, the regional water strategies have taken account of climate change, providing better information to water users about the risks and respond to challenges resulting from the increased frequency of dry periods and issues with water availability.

Proposed efficiencies

Efficiencies on community and stakeholder consultation have been achieved through broader application of online consultation and a targeted whole-of-department approach to face-to-face consultation, in line with customer expectations and their capacity to engage. Efficiencies have also been realised through improved project planning and management to provide clarity on scoping of work and the outcomes. This forms the output measures for the next determination period. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy. These improvements will continue and are reflected in forecast costs for the future period.

While responsive policy will always drive a significant component of the required activity under W06-06, the department intends to focus effort on proactive, planned policy in the next determination period. It is anticipated that by undertaking planned, strategic projects to resolve broad, known issues, the number of responsive projects can be reduced and efficiencies improved over the medium- to long-term.

Activity drivers

- The department is responsible for an extensive portfolio of legislation and subordinate legislation, including those listed below that drive and frame much of the W06-06 activity. Some of these instruments require statutory review and remake on a regular 5-year cycle. The application of some statutory function under this legislation, such as the remake of water sharing plans and controlled allocation orders, also often requires decision frameworks to be updated and applied on a regular basis. New policy and review of current policy is driven by the need for it to remain current and effective and is strongly influenced by government's evolving policy and reform agenda, often in response to the need to provide more clarity for water users and more effective compliance and enforcement settings. The current suite of water related policy is also included in the list below:
- *Water Management Act 2000*
- *Water Act 1912*
- Water Management (General) Regulation 2018
- Natural Resources Access Regulator Regulation 2018
- *Water NSW Act 2014*
- *Dams Safety Act 2015*
- Access Licence Dealing Principles Order 2004
- Harvestable Rights (coastal-draining catchments) Order 2022
- Harvestable Rights (central inland–draining catchments) Order 2022
- Controlled allocation orders – made approximately annually
- Water sharing plans
- Murray–Darling Basin Plan 2012

- NSW Floodplain Harvesting Policy 2018
- NSW Aquifer Interference Policy 2012
- NSW Non-Urban Water Metering Policy 2020
- NSW Extreme Events Policy 2018
- Intergovernmental Agreement on a National Water Initiative & renewal of the National Water Initiative
- NSW State Water Strategy
- Regional Water Strategies
- NSW Groundwater Strategy
- Draft/proposed NSW Aboriginal Water Strategy

W06-07 Cross border and national commitments

Description

This activity is responsible for the development of interstate (cross-border and national) water sharing arrangements (including funding arrangements) and the implementation of operational programs to meet national and interstate commitments[4].

The activity ensures that NSW access to water is protected and not eroded through activities conducted, managed and influenced by joint management arrangements. It is a complex task that involves negotiating the rules governing NSW access to surface water and groundwater across our shared boundaries with Queensland, Victoria, South Australia and the ACT, and nationally.

Under this activity, the NSW Department of Climate Change, Energy, the Environment and Water (the department):

- represents the NSW Government in interjurisdictional water planning and management forums, including, but not limited to the following:
  - Murray–Darling Basin Ministerial Council
  - Basin Officials Committee, Basin Officials Committee Principals and Alternates
  - Environmental Watering Committee
  - River Murray Operations Committee
  - Joint Venture Budget and Performance Committee
  - National Water Reform Committee
  - Northern Basin Project Committee
  - Capacity Policy Working Group
  - National Water Initiative Working Group
  - Dumaresq–Barwon Border Rivers Commission
  - Great Artesian Basin Senior Officials Committee Participation

[4] (i.e. Murray–Darling Basin Agreement (Schedule 1 of the *Water Act 2007*), Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin, Intergovernmental Agreement on a National Water Initiative (2004), obligations under the *New South Wales — Queensland Border Rivers Act 1947* and the NSW-Queensland Intergovernmental Agreement 2008 etc)

- provides input into statutory reviews including the MDBA's Basin Plan Review, the Australian Government's Water Act Review, BSM2030 strategy review and National Water Productivity Commission reviews and inquiries
- fulfills reporting requirements under the *Water Act 2007* (Cth), Murray–Darling Basin Plan and IPART objectives, outcomes and implementation. Examples include annual reporting on Basin Plan implementation and Water Take Reports under the Basin Plan Sustainable Diversion Limits.

The activity also delivers the Basin Salinity Management (BSM) Program, which is responsible for implementing interstate commitments under the BSM2030 strategy, meeting NSW obligations under Schedule B of the Murray Darling Basin Agreement (the Agreement) and integrating requirements within the NSW water management framework. Under the BSM2030 strategy, NSW (along with other jurisdictions and the MDBA) is required to fund and implement an agreed work program prior to the strategy's mid-term review in 2026.

This activity is dependent on the outputs from the water management implementation (W05) and from the W04 modelling activities.

Expenditure

Table 40: Current period operating expenditure and proposed costs ($000, 2024-25)

W06-07	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Cross border and national commitments	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	1,899	1,876	1,862	1,928					
Actual expenditure	2,803	4,853	9,767	9,767					
Proposed expenditure					2,863	2,716	3,007	2,781	2,439

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

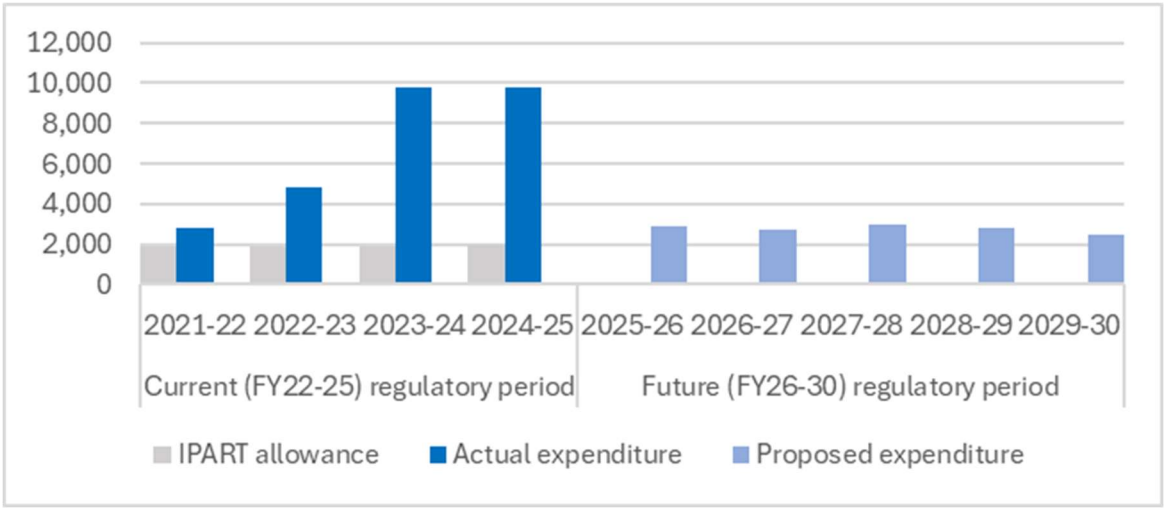

Figure 30: W06-07 Cross border and national commitments 2026-30 operating expenditure ($000, 2024-25)

Current period performance

The overall expenditure against this activity is overspent relative to IPART's allowance. The increased volume of WAMC-related work and the resourcing required are the drivers for the overspend.

The current period allowance for the BSM Program only included labour costs and was quickly determined to be insufficient to deliver all required activities. No allowance was made to undertake salt load modelling that is required to complete salinity register reviews. A redirection of cost savings and priorities enabled some modelling activities to proceed in the current period through contracted or external service provision.

This activity has met **100% (1/1)** of its output measures and performance indicators as at financial year 2023–24. All output measures and performance indicators are expected to be met by June 2025. See the current performance against output measures and performance indicators in Table 41 below.

Table 41: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM65 - DPIE Water publishes on its website an annual statement on interjurisdictional participation and performance against interstate agreements. **Met**	N/A	This output measure has been met. NSW will publish an annual statement demonstrating its interjurisdictional participation and performance against interstate agreements for each year of the determination period.
OM66 - Additional IPART performance indicator annual statement published. **N/A** **Note: This was an incorrect inclusion in IPART's Final Report of Output Measure in 2021.**	N/A	No additional IPART performance indicator was developed by IPART. NSW will publish an annual statement demonstrating its interjurisdictional participation and performance against interstate agreements each year (as per OM65)

The MDB & Intergovernmental team has delivered across each activity area in the current pricing period, having actively participated in discussions on River Murray delivery shortfall sharing arrangements with other jurisdictions, worked on improvements and reforms to cross-border management arrangements, facilitated environmental water delivery, negotiated further funding and new programs that deliver enhanced social, environmental and economic outcomes in the Murray-Darling Basin and actively participated in negotiations to enable full implementation of the Basin Plan, including delivery of SDLAM projects and water recovery activities.

Proposed services and costs for the 2025 determination period

National and interstate governmental agreements and reviews

We are forecasting increased expenditure under W06.07 in the 2026-2030 pricing period. This increase is due to additional significant bodies of work, including:

- completion of SDLAM projects and implementation of Basin Plan requirements including water recovery and the Basin Plan Evaluation due in 2025, which will significantly inform the 2026 Basin Plan Review.
- the Basin Plan Review to be conducted in 2026 which will involve substantial effort and involvement by NSW. This is expected to lead to subsequent legislative amendments and interjurisdictional negotiation.
- renewal of the National Water Initiative and development of jurisdictional action plans under a new National Water Agreement.

A detailed cost breakdown of activities expected in the new determination period of 2026-2030 can be provided.

The Basin Salinity Management (BSM) Program

We propose to maintain our average operating expenditure from this period into the next to allow us to efficiently deliver the water planning and management outcomes that legislation requires and reflect our stakeholders' expectations and agreements for delivery. This will enable the program to catch up on some deferred projects from the current period, but also to meet existing requirements and new demands to influence the review of the BSM2030 strategy.

The NSW BSM program will build on the achievements of this current period and continue to integrate BSM requirements into the NSW water management framework to provide for a more effective and efficient means of meeting both state and federal legislative obligations.

Additional work is needed to develop an evidenced position and provide critical review of any new proposals to ensure the next iteration of the BSM2030 strategy, its procedures and resourcing requirements are commensurate with a contemporary risk and in the interests of NSW government and stakeholders. The mid-term review of the BSM2030 strategy will be a key element in identifying and implementing future program efficiencies. It is expected that the review will commence in 2026 and likely extend until the adoption of a new BSM Strategy in 2030.

In addition, those salinity register reviews unable to be actioned during this current period (8) are proposed to be delivered during the next period; however, the quantum of effort will be reflective of the risk, improved knowledge (through various investigative initiatives) and application of more efficient modelling and/or technical methods.

Outcomes also seek to develop and make publicly available information and tools that will enable agencies, water users (including industry) and stakeholders to take individual responsibility for assessing and managing the salinity risk of activities that take water or impact on a water source – for example, water infrastructure or land-use change proposals, changes in water delivery (including use

and application of environmental water) and implementation of salinity impact offset measures). This will significantly reduce the reliance on the NSW BSM program to provide these services.

Successful delivery of the program is dependent on maintaining in-house expertise and capacity, in addition to the maintenance of an appropriate governance structure. Initial focus will be to ensure that high priority projects have been delivered, and mitigation measures such as improved assessment and regulation tools have been adopted, to demonstrate NSW's commitment to salinity management.

To that end, the service levels and budget requirements are consistent with current period requirements, noting that the BSM2030 mid-term strategy review will require substantial effort. Future activities will be reprioritised in line with the review outcomes and an improved understanding of catchment salinity risks.

The next period will include:

- ensuring compliance with the BSM2030 strategy (including completing outstanding salinity register reviews) to ensure NSW's commitment to salinity management and its credibility with other Basin states and the MDBA is not undermined
- addressing knowledge and process gaps in NSW water management framework to ensure the salinity risk (under NSW and federal legislation) is properly and consistently considered in decision-making within a changing climate
- influencing the next iteration of the Basin Salinity Management Strategy to ensure NSW Water Strategy priorities and actions are captured as part of the BSM2030 mid-term strategy review
- making information and tools available to both government and the public to increase awareness and capacity to make informed decisions on the management of salinity risks and impacts and provide for greater transparency.

Proposed efficiencies

National and interstate governmental agreements and reviews

Measures implemented during this current period have enabled intergovernmental activities to be undertaken efficiently while maintaining delivery of effective and high-quality services. Additional efficiencies are proposed during the next period; however, this is unlikely to offset the increased forecast workload and expenditure from additional work under W06.07. Proposed efficiencies include:

- reducing travel expenditure through online attendance of meetings, training and conferences where possible
- increasing the installation and use of efficiency software by the team e.g. Adobe Acrobat Pro.
- continuing to streamline and automate reporting and briefing processes.

The team's participation in the review of the Basin Plan in 2026 should result in a more efficient Basin Plan, reducing the administrative burden on Basin states associated with implementing the Basin Plan and including streamlined reporting obligations and processes.

The Basin Salinity Management (BSM) Program

The proposed 11% reduction from the current funding level is achievable due to benefits realisation from efficiency measures, which commenced in the current period and are planned for the next period. These include implementation of policy, procedures, a better knowledge base and data, an improved monitoring framework and maturation of modelling needs.

Efficiency improvements are likely to start being realised during the next period, with costs savings redirected back into the program. These include completing salinity models for all high-risk areas, adopting improved assessment processes, improving data and understanding of the salinity risk, and publication of information to support independent decision-making. The development of salinity models for the Sunraysia irrigation region also has the potential to recoup some costs from the proponents of the new development through use of WAMC modelling tools. These efficiency assumptions have been applied in the later years of the next period.

We have drawn on past experience to forecast the resources required to efficiently deliver this activity, with an adjustment for efficiency (i.e. past costs with an adjustment to account for efficiencies over time).

Activity drivers

The key drivers of the WAMC activities and services are **legislative requirements** , for example:

- prepare for, attend and support the Ministerial Council and Basin Officials Committee, and their sub-committees, under the Murray–Darling Basin Agreement (Schedule 1 to the *Water Act 2007*)
- coordinate annual and 5-yearly monitoring, evaluation and reporting on the Basin Plan implementation (s 13.05 and s 13.14 of the Basin Plan)
- coordinate Water Take Reports under the Basin Plan Sustainable Diversion Limits (s 71 of the *Water Act 2007*)
- table annual reports in NSW Parliament (e.g. s 386F of the *Water Management Act 2000*, NSW *Annual Reports (Statutory Bodies) Act 1984*).

There are also several **intergovernmental agreements** that NSW is a party to that drive these activities.

Activity W06-07 is also driven by:

- National Cabinet decisions and the national water reform agenda
- state and federal election cycles and commitments and priorities pre- and post-election
- priorities of the Murray–Darling Basin Ministerial Council
- NSW Cabinet decisions that set NSW negotiating parameters prior to Ministerial Council meetings
- NSW Parliament, government and agency inquiries, reviews and recommendations
- independent inquiries, reviews and recommendations
- environmental water holder priorities

- water user and stakeholder feedback and expectations
- impact of shifts in major weather cycles (e.g. El Niño, La Niña, drought periods, flooding)
- land use and agricultural trends.

Stakeholder views

The BSM Program activities in the current period and the next will contribute to the priority areas raised by local communities, industry, irrigators, other landholders, local councils and Aboriginal groups, as expressed in What matters to our customers: Insights Report (2023). These include climate risk mitigation strategies to address changes in water quality, investing in research and modelling to understand groundwater condition and consequential impacts on surface water, consideration of salinity impacts associated with implementation of SDLAM projects and relaxation of river constraints under the Basin Plan, and improving knowledge and monitoring and sharing this data with the community.

Performance against interjurisdictional agreements and meeting legislative obligations are the drivers of all services and activities delivered under the BSM Program.

The NSW BSM Program plan (2018–2026) consolidates all legislative obligations, aligns stakeholder expectations and has been endorsed by the MDBA. The MDBA and other governments are kept informed of progress and arising issues are discussed at interjurisdictional meetings including the Basin Salinity Management Advisory Panel (BSMAP).

W07-01 Water management works

Description

This activity undertakes water management works to reduce the impacts arising from water use and delivery. This involves 2 main areas of program delivery – to reduce salinity effects and to reduce the prevalence of riverbank erosion borne about by dam operations and river regulation. Erosion effects are addressed by the implementation of Riverworks programs that improve riverbank stability through structural erosion controls, such as log and rock revetment, fencing to exclude stock and protect vegetation, and planting of local native species. Salinity effects on surface water are mitigated by the operation of Salt Interception Schemes (SIS). This activity will also be responsible for delivering the actions identified in the WAMC Corporate Strategy relating to the management of water management assets owned by WAMC. The WAMC management team will ensure programs are delivered effectively and efficiently in compliance with legislative, financial, asset management and regulatory obligations.

This activity is dependent on the outputs from water management implementation (W05).

Expenditure

Table 42: Current period operating expenditure and proposed costs ($000, 2024-25)

W07-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water management works	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - the department	2,549	2,509	2,469	2,429					
IPART allowance - WNSW	0	0	0	0					
Actual expenditure - the department	1,458	2,056	9,772	9,772					
Actual expenditure - WNSW	0	0	0	0					
Proposed expenditure - the department					4,534	3,902	3,632	4,022	4,021
Proposed expenditure - WNSW					372	1,491	1,908	1,393	713
Total proposed expenditure					**4,906**	**5,393**	**5,540**	**5,415**	**4,734**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

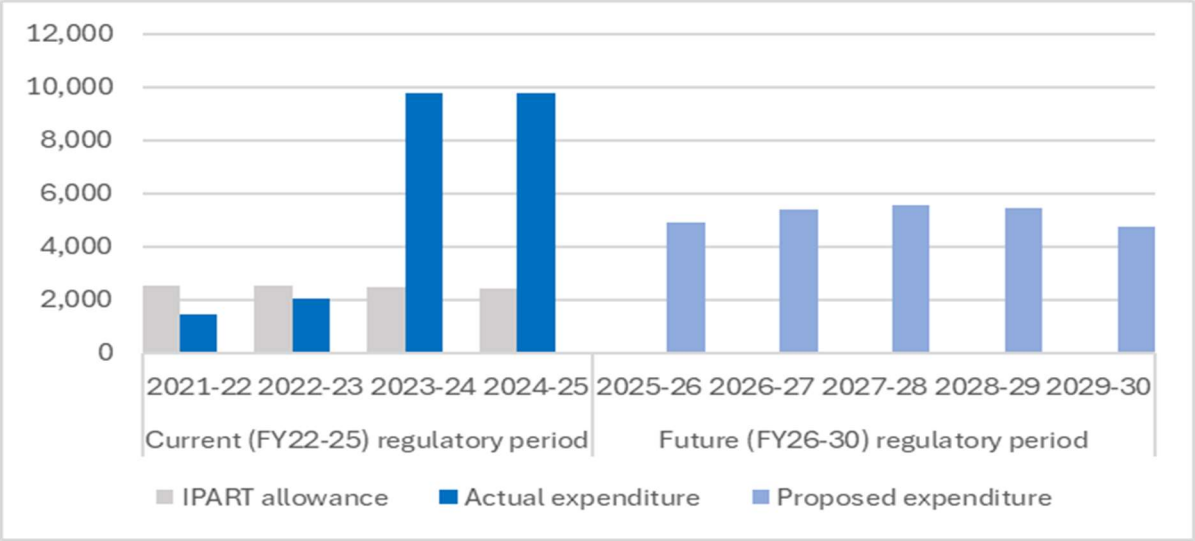

Figure 31: W07-01 Water management works operating expenditure 2026-30 ($000, 2024-25)

Table 43: Current period capital expenditure and proposed costs ($000, 2024-25)

W07-01 Capital Expenditure	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Water management works	2021-22	2022-23	2023-24	2024-25a	2025-26	2026-27	2027-28	2028-29	2029-30
IPART allowance - DCCEEW	0	0	0	0					
IPART allowance - WNSW	0	0	0	0					
IPART allowance	**0**	**0**	**0**	**0**					
Actual expenditure - DCCEEW	0	0	0	0					
Actual expenditure - WNSW	0	0	0	0					
Actual expenditure	**0**	**0**	**0**	**0**					
Proposed expenditure - DCCEEW					1,030	1,030	1,030	1,030	1,030
Proposed expenditure - WNSW					128	124	124	124	76
Proposed expenditure					**1,158**	**1,154**	**1,154**	**1,154**	**1,106**

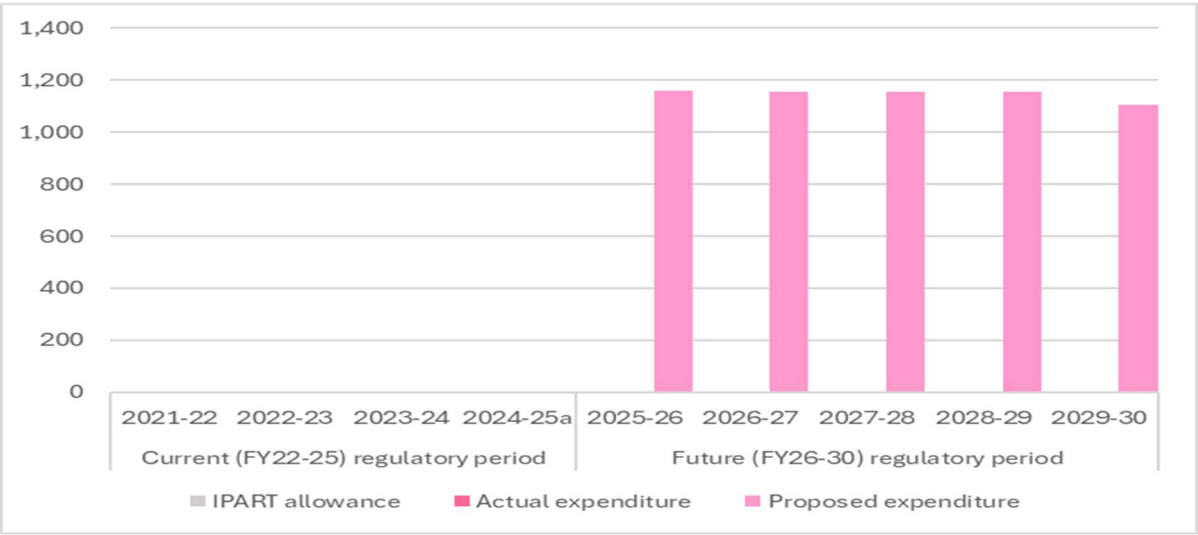

Figure 32: W07-01 Water management works capital expenditure 2026-30 ($000, 2024-25)

Current period performance

The underspends from the financial years 2022 and 2023 can be attributed to high river flows and major flooding events, with many sites inaccessible for an extended period, which resulted in reduced delivery of works and salt interception scheme (SIS) shutdowns in accordance with operating protocols. The large overspend in recent years relates to WAMC asset management costs, which were externally funded in the current period. In the next period, this activity will involve WAMC asset management costs.

This activity met **40% (2/5)** of its output measures and performance indicators for this period, as of the financial year 2023–24. Apart from output measure OM67, all other output measures and performance indicators are expected to be met by June 2025. Channel capacity is unlikely to be met due to the difficulty in decoupling river operations, impact of extreme climatic events (flooding) and the attribution of bank erosion remediation to this output measure. It is therefore removed for the next determination period. Further, the 2024–25 budget will prohibit this output measure being achieved. The approximate cost to remediate the remaining 6 km is $4.3m; however, only $0.6m is available for new works to be completed. See the current performance against output measures and performance indicators in Table 44 below.

Table 44: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM67 - Length of river remediated Output = 12km **At risk as of 2023-24 (5.54kms).**	High priority areas of erosion identified and remediated = 90% **Met** Channel capacity at Tumut = >=9,200 ML/day **At risk to be met as of 2023-24 (4,801ML/day).**	5.54km of 12km Tumut River target remediated as of 2023-24. This is due to high river levels and flooding over 2021-22 and 2022-23. While floods resulted in a reduced program of works for both 2021-22 and 2022-23; the proposed works program was able to be delivered in full for both these years. The 2023-24 works program was also delivered in full. 4,801 ML/day of 9,200 ML/day was achieved in 2023-24. Recent high rainfall and floods have affected Snowy Hydro operations, meaning the channel capacity performance target has not yet been met.
OM68 - Rolling 3-year average of salt diverted from the Murray River system = >50,000 t/year **On track to be met as of 2023-24 (47,999t/year).**	Maintain net credit (EC) balance for NSW on the BSM2030 Salinity Register = >20 EC **Met**	47,999t salt removed/year of 50,000 t salt removed/year was achieved in 2022-23. This is lower than forecast due to the 2022-23 floods resulting in salt interception schemes being shut down for an extended period. In 2023-24 NSW maintained a net credit (EC) on the BSM2030 Salinity Register of 26.7 compared to the target of 20.

Proposed services and costs for the 2025 determination period

Salt interception schemes (SIS)

Reliance on engaging external service providers will be reduced during the next determination period, leading to cost savings because of increasing in-house capacity to operate and maintain SIS. Several major projects to address the current condition and renewal backlogs will largely be completed during the current determination period, with the next determination period focusing on completion of outstanding renewal backlogs, routine maintenance and implementing SIS asset management plan requirements.

The next pricing determination period will include (in addition to current SIS service levels):

- a performance and efficiency review of the Billabong SIS scheme. Any recommendations pertaining to efficiency gains will be applied during the next determination period
- the completion of the SIS Responsive Management Trial (2025–26), with outcomes from this trial likely to result in reduced operations. This will lead to reduced costs in operations (power savings) and maintenance. A 10% reduction has been applied to forecast operational budgets to account for assumed cost savings.
- the completion of Buronga SIS major projects – removal of existing towers that do not meet Australian Standards and replacement of outdated electrical components. The replacement of these structures will result in reduced ongoing maintenance and operational costs – a 15% reduction in forecast budget requirements has been applied for the next determination period.

The MDBA also has an SIS program, which includes all schemes across the Murray–Darling Basin. W07-01 covers a portion of the Buronga SIS costs, as per the MDB Agreement, and all of the NSW state-owned scheme Billabong SIS (not included in the MDBA SIS program).

Riverworks

Despite the success of the Tumut Riverworks program in maintaining reliable water flow rates, the program review (2023) has identified several key areas where the Tumut Riverworks Program should be improved and strengthened. This refresh of the program is particularly urgent, given its longevity, the need to consider co-benefits in delivering activities and to uplift current governance, reporting and monitoring requirements are now considered common place for a program of this scale. Structural activities to address bank erosion will continue to remain a priority. However, program planning and delivery will have a stronger alignment to preserving environmental and cultural values.

In addition, the department proposes the inclusion of 2 new Riverworks programs (located in the Edward/Wakool/Lower Murrumbidgee and Upper Murrumbidgee areas) to mitigate the impacts of current and proposed changed river and dam operations as part of the next determination period. Services provided by these new Riverworks programs will be consistent with the Tumut Riverworks program and will be delivered alongside other natural resource management programs. Continued stakeholder engagement and investigative work completed prior to the commencement of the next determination period will assist in identifying further efficiencies and targeted program design.

The next determination period will also continue to repair existing work sites delivered as part of the Upper Murray Riverworks program (between Jingellic and Khancoban).

The next pricing determination period will include (in addition to current Riverworks service delivery):

- implementation of the Edward/Wakool/Lower Murrumbidgee Riverworks and the Upper Murrumbidgee Riverworks programs
- facilitation of community reference groups to ensure the program delivery is cognisant of local concerns and priorities
- development of strategic frameworks that capture outcomes from geomorphic investigations
- on-ground activities to mitigate high priority bank erosion sites
- baseline surveys of the bank condition to ensure activities are delivered efficiently using a risk-based or prioritised approach.

The outputs and performance measures reported against during the current determination period are largely still fit for purpose. The high priority sites remediated and channel capacity measures have been modified for internal reporting in the next period due to the difficulty of interpretation during current period reporting.

Additional performance measures have been developed to reflect:

- SIS asset and Riverworks site condition – it is expected that as asset renewals and site repairs are completed, condition ratings will improve over the next determination period
- the increasing emphasis on community engagement and transparency of the program delivery.

WAMC asset management

Ongoing operating and capital expenditure is required to ensure effective asset management that delivers cost efficiencies over the long term. This includes ensuring that an optimal balance between capital and operating expenditure occurs, that assets are appropriately maintained, refurbished or replaced and that assets that are not necessary to provide services efficiently are appropriately disposed of.

The next pricing determination period includes activities to enhance the management of assets within the WAMC portfolio. These activities and the step-up in operational expenditure are required to ensure WAMC's water planning and management services are efficiently delivered in accordance with legislated obligations, with operational expenditure to:

- undertake a range of management and governance activities – to ensure appropriate oversight, risk management and financial probity across the asset portfolio
- establish and implement asset management plans for a range of specific assets
- maintain and manage assets required to deliver WAMC's water planning and management services.

Over the next IPART period, there is $5 million in forecast capital expenditure under this activity. Most of the capital expenditure in 2025–26 will be used to progress investigation, design and maintenance and renewal works for the Anabranch Lakes project, the Nimmie–Caira project and other WAMC-owned water management assets.

This capital expenditure is consistent with WAMC's asset management framework and necessary to ensure that assets are fit for purpose and can meet water management objectives, including:

- effective environmental watering of the Nimmie–Caira area and Yanga National Park, as part of the Nimmie–Caira Enhanced Environmental Water Delivery Project
- effective and safe operation of infrastructure in the Poon Boon Lakes to allow for environmental flows and flood management
- progress the repairs to Regulator 183, so that it can be transferred to Anabranch Water in accordance with the deed of transfer
- progress the outcomes of the Fletchers Lake Reserve Management Plan, including environmental and cultural watering
- the management of water flows at GolGol and Oil Tree Lagoon
- ensuring assets are appropriately managed and maintained on an on-going basis.

WaterNSW has 54 unregulated weirs and intends to use the funds in the upcoming regulatory period to undertake inspections, conduct surveys and further investigations along with some minor renewals where required including for public safety purposes.

Proposed efficiencies

Several key initiatives (listed below) have been progressed over the current period to secure future efficiency improvements. We have categorised these process improvements as catch-up efficiencies in our Efficiency Strategy.

Salt Interception Schemes

- Upgrade of SIS telemetry and communication systems (to enable remote system monitoring, shutdown and restart of the schemes) and engagement of local contractors to undertake regular site visits and preventative maintenance, as required) was historically delivered by staff being on-site. These initiatives will lead to savings in labour and travel costs, as staff are not required to attend sites as regularly to operate and maintain the schemes.
- Development of a groundwater model to assess the effectiveness of the Billabong SIS and provide a decision support tool to manage salinity in the Billabong Creek – this is a critical input in assessing the performance of the scheme and in identifying future operational efficiencies.
- Development of an SIS Asset Management Framework (including an asset register) that aligns to both the department and MDBA joint venture asset management requirements, allowing the development of a strategic long-term program to address legacy issues (to mitigate increased operating and maintenance cost due to aging infrastructure). This will streamline identification and provide transparency of future program delivery and forecast budget requirements, creating further resource efficiencies.
- A groundwater monitoring network review for the Buronga SIS was completed in 2022, with various recommendations identifying where efficiencies could be achieved while ensuring groundwater response to SIS operations continues to be adequately captured and reported. The proposed

reduced groundwater monitoring network will create cost savings, with a 42% reduction in manually monitored sites proposed.

- The delivery of the SIS Responsive Management Trial (due for completion 2025–26 – operating the scheme in response to groundwater-river conditions rather than 24/7 (current operational requirement) and assessing any impact to water quality or salinity targets. This is likely to result in power cost savings and reduced operation and maintenance costs and improve the longevity of assets if successful.
- The inclusion of a solar array for the Billabong SIS to reduce future power costs (due for completion 2024–25).

Riverworks

- We established a partnership with the Brungle–Tumut Local Aboriginal Land Council (LALC) to support delivery of on-ground activities and condition assessments (including cultural heritage values) along the Tumut River. This will reduce the reliance on external contractors, with resourcing to deliver activities being redirected to local Aboriginal communities.
- We developed an Environmental Planning Strategy to streamline approvals for future on-ground works delivery.
- We undertook an open-tender process to engage a principal contractor to deliver monitoring services and on-ground activities. Soil Conservation Services were the successful tenderer and are currently contracted until 30 November 2024, with the option to extend for another 2 years.
- We established a Tumut and Upper Murray River Asset and Monitoring Database to capture data (including site prioritisation, activities and costs) and streamline reporting requirements, leading to an 8% reduction in forecast labour costs.
- We applied decision-making frameworks supported by a prioritisation process to ensure Riverworks activities are delivered at high-priority sites (i.e. those exhibiting significant bank erosion or severe geomorphic issues that may impact channel capacity or hydraulic conveyance) to ensure cost benefits are maximised within the cost envelope.
- The cost savings realised (as the program transitions to repair of existing sites rather than remediation of bank erosion or new works) will be redirected to support activities that address broader geomorphic issues such as reinstatement of in-stream habitat, mitigating anabranch development and native vegetation and wetland management.
- We will undertake a review of the program implementation and outcomes in the final year of the next determination period to identify further efficiencies for the program delivery.

WAMC asset management

Ongoing operational and capital expenditure is required for efficient asset management, to both maximise a useful asset life and minimise the risk of asset failure. Strategic asset management and asset management plans have been developed to create efficiencies that address maintenance and repair requirements, which will reduce asset renewal costs and costs of unexpected downtime over the long term.

The implementation of asset management plans has been impacted due to the constrained funding allocation. This has resulted in deferred maintenance liabilities, which will impact useful life of the assets. Capital and operational constraints are expected to continue over the forward period. Investigations and analysis will be conducted across the WAMC asset portfolio to assess the water management and service risk to allow funding to be directed to the most critical assets and achieve asset management outcomes. This will enable prioritisation of available resources to most efficiently manage assets in the WAMC portfolio and contribute to the continued delivery of WAMC statutory obligations.

Activity drivers

The department's activities related to the operation and maintenance of salt interception schemes and maintenance of channel capacity are undertaken in compliance with various state and federal requirements and legislative obligations.

- *Water Act 2007* (Cth)
- *Water Management Act 2000* – Murray and Murrumbidgee Water Sharing Plans (WSP) – specifically, mitigation of riverbank erosion and geomorphic instability that arises from river regulation and dam operations

The development, implementation and review of water management actions delivered under W07-01 are key initiatives of:

- the Murray–Lower Darling (SW8) and Murrumbidgee (SW9) Water Quality Management Plans (Water Resource Plans and Basin Plan)
- the (Draft) Murray and Murrumbidgee Regional Water Strategies.

In addition, delivery of this WAMC activity will meet several NSW Water Strategy priorities, including:

- improve river, floodplain and aquifer ecosystem health and system connectivity (Priority 3), primarily by improving water quality in these systems, by stabilising riverbanks and the operation and maintenance of SIS
- increase resilience to changes in water availability (variability and climate change) (Priority 4) through maintaining channel capacity and stabilising riverbanks to manage any future risks associated with changes to how water is delivered to meet forecast demand.

This activity is also driven by recent community and stakeholder engagement activities and WAMC's *What matters to our customers: Insights Report (2023).*

WAMC asset management is necessary to ensure that WAMC can efficiently deliver its water planning and management services to customers and the community, as required under the *Water Management Act 2000*, while complying with other legislative requirements[5] and government policies. A key driver is achieving compliance with the NSW Government's Asset Management Policy.

[5] For example, the Public Works and Procurement Act 1912, Land Acquisition (Just Terms Compensation) Act 1991, Crown Lands Act 1989, Government Sector Finance Act 2018, State Records Act 1998 and Dam Safety Act 2015.

Effective asset management can ensure that assets deliver maximum value at minimal cost over the long-term. This includes ensuring that an optimal balance between capital and operating expenditure occurs (considering the present value of costs and benefits over the long term), that assets are appropriately maintained, refurbished or replaced and that assets that are not necessary to provide services efficiently are appropriately disposed of.

W08-01 Regulation Systems Management

Description

These activities require WaterNSW to undertake a number of tasks including:

- management of the public register for access licences, approvals, trading and environmental water
- systems development, maintenance and system upgrades
- monitoring of systems performance
- development of and maintenance of online tools, online applications and online payments, and smartphone tracking applications
- development of application forms and guidelines
- develop and maintain system manual and standard operating procedures
- records management
- updating customer records in database
- uploading conditions onto licensing system
- production of monthly performance reports for consent transactions

Expenditure

Table 45: Current period operating expenditure and proposed costs ($000, 2024-25)

W08-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Regulation Systems Management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	0	0	0	0					
Actual expenditure	3	8	4	47					
Proposed expenditure					42	41	42	43	44

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

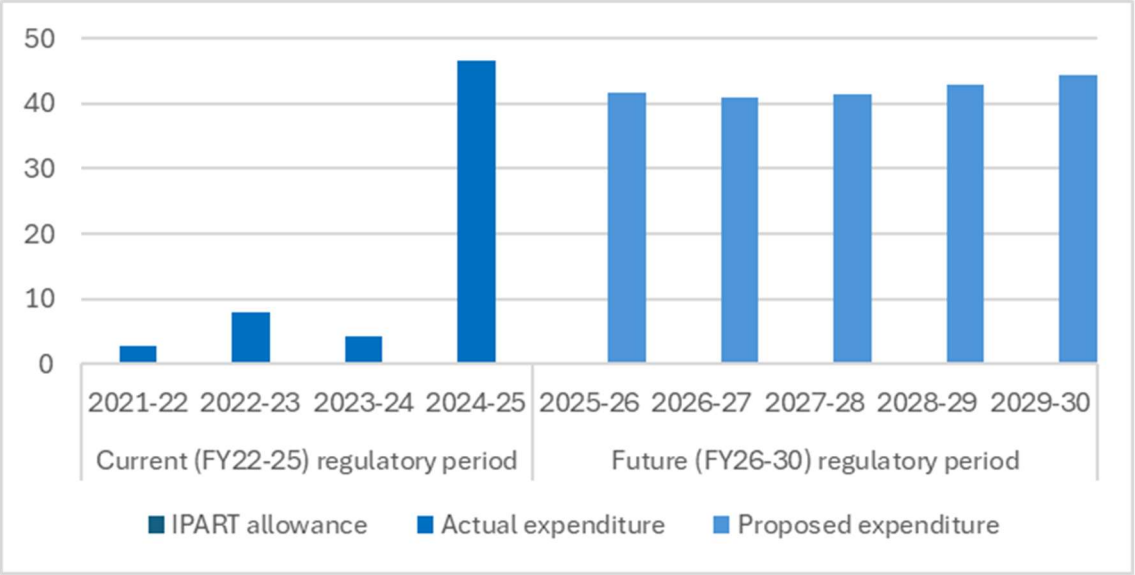

Figure 33: W08-01 Regulation systems management 2026-30 operating expenditure ($000, 2024-25)

Current regulatory period

Key outputs or performance outcomes that we sought to achieve over the current regulatory period included:

- system availability, security and privacy of user data, specifically:
- system availability = 95%
- no major nonconformances in security and privacy of user data as per audit outcomes

Against these performance indicators outcomes WaterNSW met expectations.

The NSW Water Register has a system availability of 99% with minimal downtime due to system upgrades, windows patching and disaster recovery activities.

In 2023/2024 WaterNSW online applications increased to 3,100, accounting for 47% of consent transaction applications. During the determination period WaterNSW introduced Water Markets System (WMS) with Basic Landholder Rights (BLR) bores as the first application available to customers. Once this was embedded, we removed the paper-based application form from public view, directly all BLR bore applicants to the new online WMS service.

Next regulatory period

WaterNSW will continue to expand the types of consent transaction applications that can be applied online through WMS, including water supply works approvals, combined and use approvals, which are currently paper based only applications.

System availability will become more important as we transition customers to WMS, not only for submitting applications, but to view and self-service changes to personal details, approvals and licences.

W08-02 Consents management and licence conversion

Description

This activity involves imposing mandatory conditions on water access licences and approvals to give effect to rules in the NSW *Water Management Act 2000* (WM Act) and its statutory instruments, and the conversion of licences under the *Water Act 1912* to water access licences and approvals under the NSW WM Act.

This activity is dependent on inputs from W03 and W09 codes. See the dependence of this activity with the planning activities in Figure 35 below.

These activities entail the provision of:

- The transcribing of water sharing provisions into licence conditions and the conversion of licences to the Water Management Act 2000.

WaterNSW has a wide range of activities and requirements arising from its roles under this activity. Including:

Mandatory conditions

Provides input to the department into the drafting of mandatory conditions and notification materials.

Undertakes mass notification for all WAL and approval holders of the conditions imposed on approvals and WAL's when:

- the WMA, WMR or a WSP is amended,
- a new WSP commences or a WSP is remade; and
- as a result, changes to the conditions on approvals and WAL's are required.
- Keeps accurate records of notification of conditions.

Responds to licence holder enquiries arising from mass notification of conditions.

Requests the department applies or removes mandatory conditions required through the assessment process for WAL in relation to WNSW Customers.

Keeps the WLS database up to date, including stakeholder contact details.

Entitlement Conversion

Undertakes the data cleansing of holders of Water Act 1912 licences prior to conversion.

Undertakes all tasks in WLS to set up new or amended WSP or FMP.

Notifies LRS of changes to WSP, as follows:

- provides instruction to LRS on changed/new WSP, water source, management zones and WSP/water source/management zone relationship for LRS database,
- provides formal instruction to LRS.

Prepares Water Accounting System for changes.

Converts licences to WMA approvals and WALs as applicable.

Implementation of Water Management Plans

Giving effect to any required establishment of new water sources/management zones or giving effect to any changes to existing boundaries.

Giving effect to any required amendments to a WAL or approval's nominated water source or management zone.

WLS and/or process changes or enhancements to enable new or amended rules to be implemented (e.g., IDECs).

Other system changes or enhancements to enable new or amended rules to be implemented (e.g., water allocation debit and accounting rules).

Giving effect to mandatory conditions required to implement any new or amended rules in the water management plan.

Expenditure

Table 46: Current period operating expenditure and proposed costs ($000, 2024-25)

W08-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Consents management and licence conversion	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - the department	759	745	730	716					
IPART allowance - WNSW	905	917	902	884					
IPART allowance	**1,664**	**1,662**	**1,632**	**1,600**					
Actual expenditure - the department	489	673	917	917					
Actual expenditure - WaterNSW	1,453	1,180	888	1,013					
Actual expenditure	**1,943**	**1,853**	**1,805**	**1,930**					

W08-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Consents management and licence conversion	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Proposed expenditure - the department					819	767	805	794	804
Proposed expenditure - WNSW					953	924	886	967	997
Proposed expenditure					**1,772**	**1,691**	**1,691**	**1,761**	**1,801**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

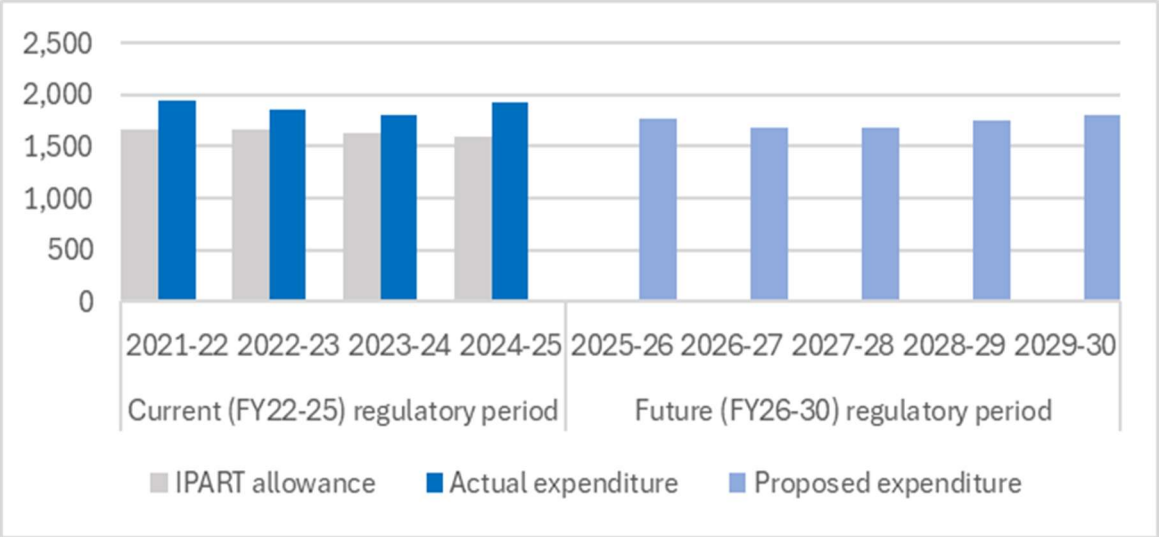

Figure 34: W08-02 Consents management and licence conversion 2026-30 ($000, 2024-25)

Current period performance

The underspend against the IPART allowance in 2021–22 was largely due to the difficulty in filling positions. This did not significantly impact immediate service levels, as only one water sharing plan was remade that year. However, it did impact on the time taken to catch up on the backlog of 27 water sharing plans that had been remade or amended in the previous year, as well as on the time taken to address the historic backlog. The increase in expenditure in 2022–23 reflected the efficient level of expenditure required to adequately deliver activities and services. Spending increased above IPART's allowance in 2023–24, and there is expected to be an overspend in 2024–25.

This activity met **67% (2/3)** of its output measures and performance indicators for this period, as of the financial year 2023–24. The output measure and first performance indicator are expected to be met by June 2025. The second performance indicator will be met by June 2025 for all mandatory conditioning

work considered high priority. See the current performance against output measures and performance indicators in Table 47 below for more information.

Table 47: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM69 - WSP rules are enforceable because the plan mandatory conditions are reflected on the licence **Met**	Rule changes are reviewed to identify whether condition changes are necessary within 3 months of the event requiring = 100% **Met** Necessary changes to conditions are notified to the licence/approval holder within 6 months of the event requiring notification = 100% **Not Met**	As of 2023-24, all WSPs now have conditions that are reflected on licences. All WSP amendments were reviewed within 3 months of the commencement of the amendment to determine if conditions changes are required. It is not possible for all mandatory conditioning work to be completed within 6 months, given the batched nature of WSP remakes and amendments and the need for targeted, plain-English notifications material. Prior to the current performance period, mandatory conditions were issued with a 2.9 year timeframe on average. The performance in the current period represents a major improvement.

Proposed services and costs for the 2025 determination period

The imposition and maintenance of mandatory conditions is an ongoing legislative requirement, which is necessary for implementing the legislative framework for water management in NSW. Without the issuing of mandatory conditions, under this activity, instruments such as water sharing plans cannot be enforced.

This activity will continue, as water sharing plans and floodplain management plans are remade and amended. 40 plans are due to expire and be remade in 2025–30, which is greater than the 27 plans for the current period.

Rules in the Act and Regulations may also be revised from time to time following policy developments and reforms, but we do not yet know if this will occur in the next period or what it would involve, but it is likely – as a minimum – that major changes to all Northern Murray–Darling Basin water sharing plans will be implemented as part of the government's work on connectivity reforms.

Any customer feedback we receive will be considered as part of our continuous improvement.

However, ongoing review and updating of water management plans that often include greater specificity and granularity will lead to additional requirements for updating of conditions and trading rules. This complexity is forecast to place upwards pressure on WaterNSW costs for this activity and require similar levels of effort and engagement with customers. On this basis the current period output measures and performance indicators are expected to remain relevant.

WaterNSW is proposing a realistic but challenging operating expenditure to facilitate this activity. The average annual proposed operating expenditure is 7% lower than the final year operating expenditure of this regulatory period, and 11% lower than the average annual spend in the current regulatory period. This highlights that WaterNSW is proposing an operating expenditure profile that offers real cost decreases over the next regulatory period compared to the final year of this regulatory period.

The proposed operating expenditure reflects and incorporates ongoing efficiency outcomes that are able to offset real cost increases impacting on WNSW costs, most notably real labour rate increases arising from the EBA that responds the substantial real labour purchasing power dilution over the current regulatory period.

Reflecting on the potential for changes to water management plans over the forthcoming regulatory period, it is also apparent that WaterNSW is proposing an operating expenditure profile that seeks to manage this regulatory risk and uncertainty without passing that risk on to customers.

Proposed efficiencies

Efficiencies over time, through system and process improvements, are resulting in an expected gradual decline in efficient expenditure for routine activities from 2023–24 onwards. The department will continue working on making efficiencies by maintaining a library of mandatory conditions for related rules and fact sheet descriptions. We are also exploring potential system efficiencies for the work imposing conditions using the Water Licensing System (WLS).

Any resources made available through further efficiencies or quieter periods in the schedule of plan remakes will be offset by the need to undertake projects focused on quality assurance and continual improvement. These types of projects should be undertaken to ensure mandatory conditions are accurate and are applied to licences and approvals accurately, for example:

- reviewing mandatory conditions for specific purpose access licences to ensure the conditions are consistent with the intended purpose
- identifying data discrepancies or gaps in licence or approval records, which may have led to mandatory conditions being applied incorrectly and requesting their correction
- ensuring our documented processes and procedures are complete and up to date for the purpose of ensuring this work is undertaken efficiently and to facilitate auditing by the Natural Resources Commission
- actively seeking stakeholder feedback on our notification and information documents to ensure they meet customer preferences and expectations
- working with WaterNSW to identify issues with the WLS database and work through priorities for improving the database.

In aggregate over the course of the current regulatory period the actual operating expenditure for WNSW was approximately 25% higher than the IPART allowance. However, it is notable that WaterNSW was able to actively manage its costs over the current regulatory period that resulted in actual operating expenditure being 14% higher than the allowance in the final year compared to being 60% higher in the first year. While the allowance set for the first year was overly ambitious, WaterNSW adopted a range of process improvements and leveraged the delivery of WAVE outcomes

over the course of the current regulatory period to the gap in actual costs relative to that allowed by IPART by 45%. However, increased regulatory complexity as well as real cost drivers in key cost elements (such as labour rates) continued to place upwards pressure on WaterNSW's underlying costs.

Activity drivers

The remake or amendment of water sharing plans and floodplain management plans is a key driver of this ongoing activity, as plans have a duration of 10 years under section 43 of the *Water Management Act 2000* and are often revised when remade.

The conversion of *Water Act 1912* licences to access licences and approvals is a legislative requirement under Schedule 10 and 11 of the *Water Management Act 2000*. Most of the statutory functions for licence conversions have been conferred on WaterNSW. This the department activity is limited to identifying any conversion errors when undertaking our mandatory conditions work, and then requesting WaterNSW to correct the error.

Mapping of W08-02 with other WAMC activities

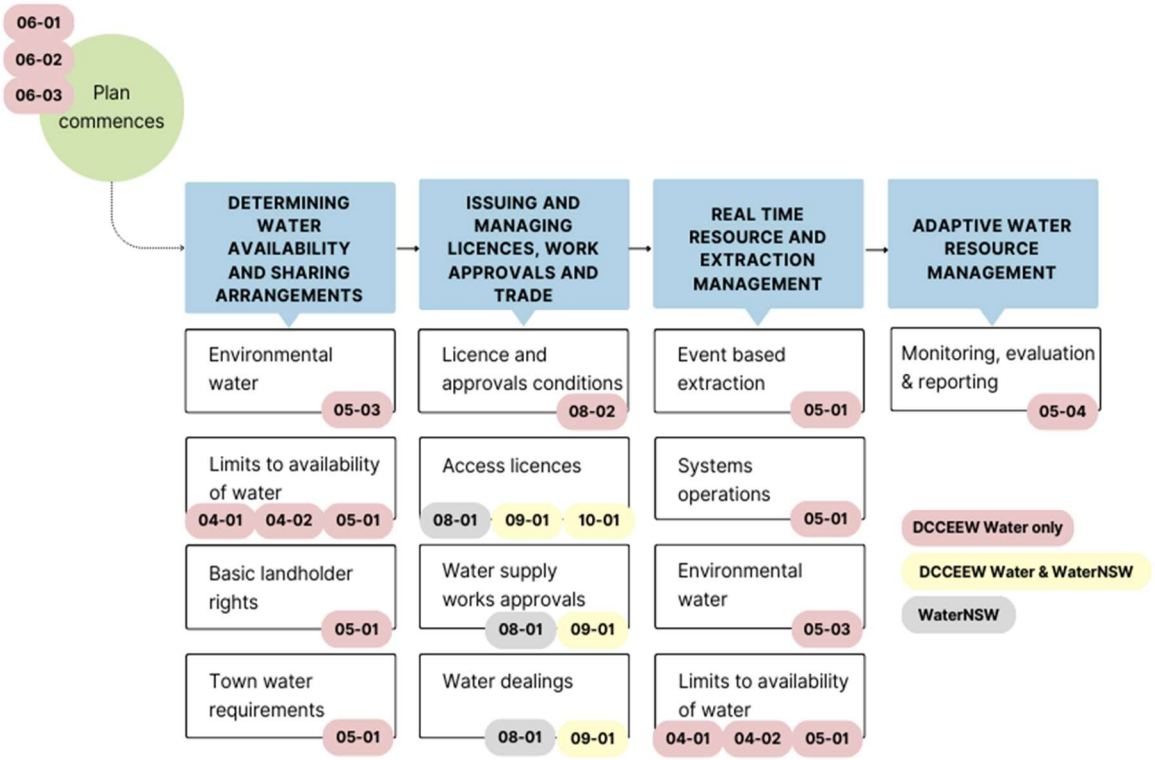

Figure 35: WAMC water sharing plan implementation program logic

W08-03 Compliance management

Executive summary

This business case presents a comprehensive overview of the costs, efficiency, credibility and customer engagement strategies of the National Resources Access Regular (NRAR), demonstrating its effectiveness as a water regulator under IPART's guidelines.

It is important to assert at the outset that NRAR was deliberately established under the *Natural Resources Access Regulator Act 2017* (NRAR Act) as an independent regulatory authority, to ensure it can make decisions free from political or water user influence. In this regard, the New South Wales (NSW) Independent Commission Against Corruption (ICAC) has indicated that regulators should not conceptualise regulated parties as customers.

> *Regulators are often required to make unwelcome decisions which do not necessarily equate to positive customer feedback. Characterising regulated parties or complainants as 'customers' misconstrues the relationship they should have with a regulator*[6].

Consequently, while NRAR listens to water users and responds where it makes sense from the perspective of raising compliance rates, this business case does not refer to 'customer', but rather to 'water user' to reflect the appropriate relationship that is required between an independent regulator and the regulated community.

NRAR was established by the NRAR Act as an independent statutory entity to change the water compliance landscape in NSW, following reports by the Ombudsman and the Matthews investigations from 2015 to 2017 of mismanagement of water resources, misconduct and under-resourcing and funding of the compliance function.

Our principal statutory objectives under the NRAR Act are to ensure effective, efficient, transparent and accountable enforcement of the law, and to maintain community confidence that the laws are now being properly enforced.

Community and water user surveys over the current price determination period indicate:

- 84% of the community expect more to be done to address illegal water take, including a higher frequency of on-ground inspections by NRAR
- 59% of NSW water users find the water rules complex to understand.

NRAR's business case responds to this community expectation by:

- continuing a strong enforcement approach for serious and deliberate non-compliance developed in response to the Matthews recommendations, to ensure specific and general deterrence and fairness for the compliant

[6] ICAC. November 2022. Managing Corruption Risks in Regulatory Work.

- investing more ‘boots on the ground’ to face-to-face education and outreach services to help willing water users comply voluntarily, and intelligence services to target proactive compliance programs. This is a deliberate cost-effective decision, with educational interaction with water users costing approximately 10% of an investigation and enforcement action
- championing improvements to the water rules, where this simplifies the framework for water users and supports more effective, efficient compliance and enforcement of the rules.

NRAR's projected average costs in this business case are $33.5 million per annum from 2025 to 2030. These costs reflect the true ‘impactor pays’ costs to perform NRAR's statutory functions and meet the requirements of the *Water Management Act 2000*, government policies and community expectations. NRAR’s modelling shown in this business case demonstrates that these costs are well below the optimal point at which the marginal cost of compliance equals the marginal benefit in increased compliance rates.

NRAR's ‘impactor pays’ costs have increased since IPART’s 2021 determination because:

- we have responded to water user feedback by enhancing on-ground engagement through additional frontline education and outreach services
- the NSW Crown Solicitor’s Office has transferred costs to NRAR for prosecutions
- NRAR is delivering increased business-as-usual compliance activities stemming from meter reforms and floodplain harvesting licensing
- NRAR has invested in Information and Communications Technology (ICT) upgrades to address continuity and cyber security risks

Despite these increases, NRAR's costs remain modest, given:

- the estimated NSW water entitlement value of $41 billion, which enables an estimated $2.9 billion to $4.5 billion in annual production value from irrigated agriculture alone
- comparatively lower resourcing levels than similar NSW regulators like the NSW Environment Protection Authority (EPA) and NSW Resources Regulator.

W08-03 directly reflects NRAR WAMC revenue

Activity code W08-03 encompasses the revenue requirements for NRAR to undertake WAMC-related compliance activities to enforce the *Water Management Act 2000* and *Water Act 1912* components conferred on NRAR by the NRAR Act, or otherwise delegated by the minister. These compliance management activities are undertaken exclusively by NRAR.

NRAR’s compliance approach

To fulfil these statutory obligations, NRAR undertakes a modern approach to compliance and enforcement that seeks to build public trust and confidence in water law enforcement by:

- educating, enabling and encouraging people to actively comply with water laws
- enforcing the law to provide a deterrent and ensure fairness for the compliant
- championing improvements to the law and policy where NRAR finds that change is needed to more effectively and efficiently deliver water-management outcomes on the ground

- ensuring transparency in our operations through the maintenance of public registers required by the NRAR Act and publishing and promoting regular reports of our compliance activities

These services are supported by investment in:

- intelligence, remote monitoring, data analytics and modelling of compliance behaviour change to better inform the deployment of staff to the highest priority matters
- internal systems to ensure consistent approaches and decisions based on best regulatory practice principles
- staff training to ensure the staff are knowledgeable, confident and capable.

Enforcement - reactive

Where non-compliance is detected and confirmed, NRAR takes a proportionate approach to enforcement in accordance with its published Regulatory Policy. The agency considers a range of factors when responding, including:

- the harm of non-compliance to other water users, the environment and the integrity of the regulatory framework
- the culpability of the offender
- the likely public interest in the matter
- the attitude of the offender toward shifting to compliance.

At lower levels of harm, culpability, public interest and attitude, NRAR is likely to encourage and enable the water user to comply through education and outreach. As levels of harm, culpability, public interest and attitude toward compliance become more serious, NRAR responds with regulatory interventions such as official cautions, penalty notices and directions. Prosecutions, licence suspension and cancellations are reserved for the most severe matters of high culpability. This approach is depicted in Figure 36.

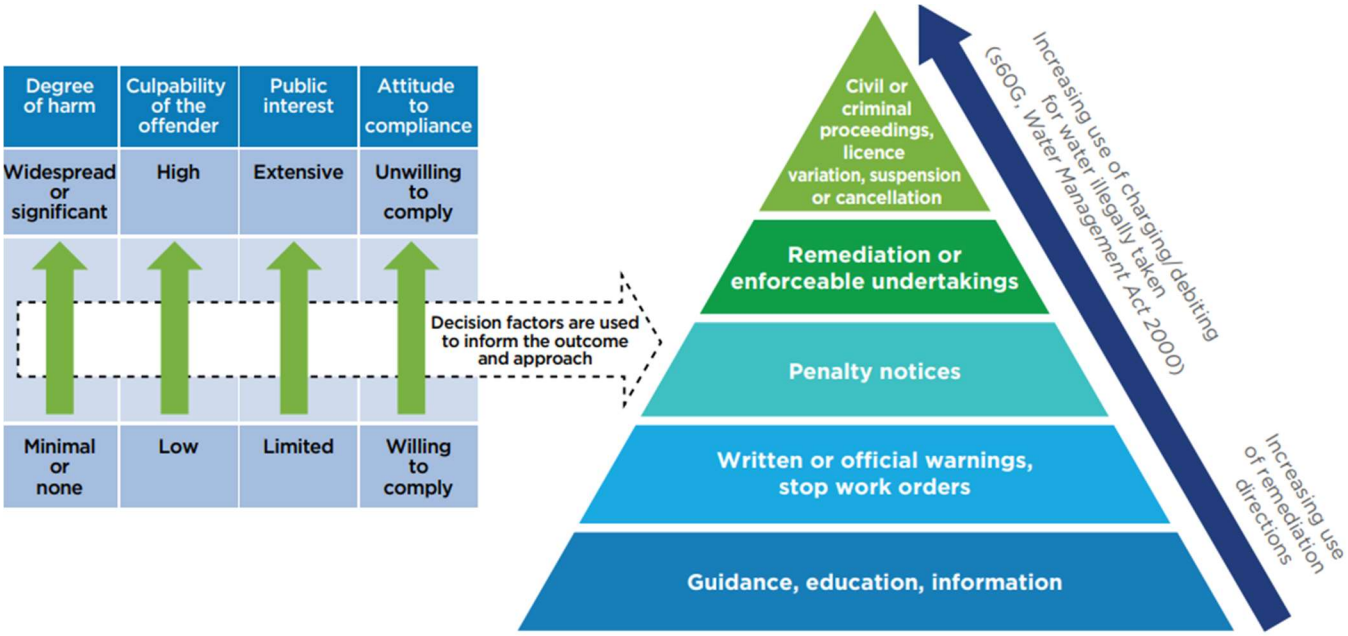

Figure 36: NRAR's Compliance Approach

Proactive programs

NRAR is a modern, risk-based and intelligence-informed regulator with proactive compliance programs that efficiently drive compliance by addressing collections of compliance issues at geographical, industry or system-thematic levels.

Most water users want to comply, as evidenced by the Inspector General of Water Compliance 2022 compliance report, which found that 93% of water licence holders reported they were very likely or somewhat likely to comply with the water rules.[7] Consultation with Customer Advisory Groups during July–August 2023 highlighted a preference among water users for local knowledge and support, particularly valuing on-farm visits[8]. The 2023 Water Sector Survey also revealed that 57% of water users considered property inspections by uniformed officers to be effective or extremely effective, while 60% had the same opinion about educational programs[9].

Water users clearly want and need guidance and support to understand the rules. NRAR, therefore, generally operates proactive compliance programs with low-touch, high-volume interactions with water users. These programs are designed to enable, encourage and educate water users to voluntarily comply with the laws and to prevent harm to the water resource in the first place.

NRAR's compliance and enforcement activities

Since its commencement, NRAR has:

- delivered significantly increased enforcement activity, including investigating 9,832 suspicious activity reports[10], sending 3,165 advisory letters and taking over 2,084 enforcement actions
- taken a balanced approach by increasingly helping water users to understand the water laws better and to enable them to voluntarily comply
- experienced and adapted to various climatic events, including drought and floods
- commenced implementing government reforms such as metering and floodplain harvesting frameworks.

NRAR has a track record of being a firm but balanced regulator that delivers what it promises, including:

- pivoting to proactive compliance, as foreshadowed in our 2021 IPART submission, to prevent harm through increasing rates of voluntary compliance
- publishing regulatory priorities that make it clear to the public and water users where NRAR is investing its resources
- meeting or significantly exceeding most of our performance measures

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[7] Murray–Darling Basin community perceptions research 2022 - Findings relating to compliance and enforcement
[8] Customer Advisory Groups WAMC consultation Valley-by-valley analysis of feedback July-August 2023Cags page 8
[9] 2023 Water Sector Voice of the community NRAR insights report 2023 page 60
[10] Include incidents and alleged offences 2018/2019 previous terminology.

- maturing our regulatory approach and capability, as evidenced by independent assessment against the Australasian Environmental Law Enforcement and Regulators Network (AELERT) Modern Regulatory Improvement Tool (MRIT)
- listened to community and water users, evidenced by NRAR investment into outreach programs, to enable reporting of base compliance rates and help water users to voluntarily comply.

Clear strategy

NRAR now understands its mandate well, has a clear direction established by statutory objectives set out in the NRAR Act and our published strategic plan 2024–2026, and a refreshed internal structure to:

- continue reactive enforcement to provide deterrence and to ensure fairness for the compliant
- deliver proactive education, support and encouragement to the many water users who comply with water laws voluntarily
- continuously improve through a Quality Management System (QMS), staff capability, championing improvements to the water management framework, and constant search for cost efficiencies in our operations to enable greater reach and effectiveness for the same costs.

NRAR delivers significant benefits to WAMC customers and the NSW community

The compliance work delivered by NRAR provides significant benefits to water users, the environment and the broader community.

Benefits to water users

- **Will restore social licence** : NRAR's compliance presence, transparency and accountability builds public trust over time, creating a more stable and fairer operating environment for water users.
- **Protects entitlement value** : Water entitlement in NSW is estimated to be worth up to $41 billion, including tradeable entitlement (up to $34 billion), stock and domestic entitlements ($0.8 billion) and town water ($5.8 billion)[11]. The 6-month volume-weighted average price (VWAP) of tradeable entitlements in June 2023 was at around $2,600 per ML, compared with the 5-year VWAP at around $2,000 per ML, demonstrating that entitlement value is also increasing over time across NSW[12].
- **Supports irrigated agricultural production:** These water entitlements support irrigated agricultural production valued at between $2.9 to $4.4 billion per annum, or a 5-year average of $3.7 billion.[13]

[11] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 5
[12] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 42
[13] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 42

- **Enables other major industries:** Other industries such as the mining sector are reliant on water for production. The mining industry contributes approximately $23.6 billion per annum to the NSW economy and $5.8 billion per annum in taxes and state royalties[14].
- **Incentivises the compliant:** By only using water they are entitled to, and not a drop more, compliant water users doing the right thing expect fairness and equity, and to not be disadvantaged by those who steal water for financial gain.

Benefits to the community and environment

- **Preservation of the non-market economic value:** The total economic value of NSW waterways in their current state is estimated at $470 billion[15]. Compliance activity helps protect our waterways and *in situ* planned environmental water, which is fundamental to these non-market values.
- **Community confidence**: Enhanced compliance measures increase public trust in water management, although results from the 2023 Community Insights Voice survey indicate more needs to be done to rebuild this public trust and provide confidence that adequate measures are in place to address unlawful water take.
- **Revenue protection** : NRAR's compliance helped secure $65.8 million in government revenue from water sales for the 2021–22 fiscal year[16].
- **Protection of town water entitlements:** Valued at $5.8 billion[17], town water entitlements support regional communities and economies.
- **Recreational user benefits** : The estimated recreational value for NSW waterways in the FY22 is $1 billion[18].

Compliance management revenue needs

NRAR seeks to recover an average of $33.5 million per annum through this WAMC price determination for the 2025–2030 period, with this revenue representing NRAR's costs that meet the 'impactor pays' principle.

NRAR's total FY25 operational budget of $45 million per annum is expected to remain consistent throughout the pricing period. The additional budget to the revenue sought through this WAMC submission relates to NRAR compliance costs that do not align with the 'impactor pays' principle, such as compliance for controlled activity approvals and unlicensed activity.

The projected costs in this business case for 2025–2030 reflect the true costs of water law compliance in NSW in line with current expenditures and NRAR's legislative objectives. Notwithstanding, NRAR's costs have grown since the 2021 WAMC price determination, which is explained later in this submission.

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[14] https://nswmining.com.au/mining-in-nsw/our-economic-contribution/
[15] Marsden Jacobs Associates. 2023. DRAFT NSW Water Valuation: Non-consumptive values of water in NSW
[16] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 38
[17] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 5
[18] Marsden Jacobs Associates. 2023. DRAFT NSW Water Valuation: Non-consumptive values of water in NSW

Where NRAR's costs have increased since 2021, it is prudent and aligned with stakeholders' service level expectations expressed by the community and water users during and since the 2021 IPART determination.

Statutory basis for service

Legislation driving NRAR's services

- The *Natural Resources Access Regulator Act 2017* sets out NRAR's functions and principal objectives to be an efficient, effective, transparent and accountable regulator that maintains community confidence in the enforcement of water laws. The Act also establishes the independence of NRAR's Board and operations.
- The *Water Management Act 2000*, amongst other things, establishes offences and penalties and sets out investigation and enforcement powers used by NRAR.
- The *Water Act 1912* creates offences and penalties for specific licences that remain in force under that Act.

NRAR's costs are partly driven by the design of the legislation and the licensing and approval framework, the construction of the offence provisions, the nature of the investigation and enforcement tools established in law, and government policy and commitments that impose compliance obligations on water users that NRAR must oversee.

NRAR's costs are also driven by:

- the former Minister's letter to the NRAR Board Chair[19] which included general directives such as maintaining constructive relationships with other government bodies, establishing an expectation for stakeholder engagement and embedding ethics into NRAR practices
- the MDBA Compliance Compact, which sets numerous obligations for NRAR, such as for accountability by publishing our approach to compliance, audits for meter installations and high-impact stock and domestic rights (NSW 3.1) and ensuring compliance activities remain consistent with the National Framework for Compliance and Enforcement Systems for Water Resource Management
- the NSW government's Quality Regulatory Services Initiative (QRSI), which requires all regulators to implement a risk-based, outcomes-focused approach to compliance and enforcement.

Whilst NRAR exercises discretion in its compliance and enforcement activities, this discretion does not extend to declining to enforce the law due to cost considerations.

[19] The Hon Niall Blair MLC, Letter of Expectations - from Minister Blair to Mr Craig Knowles, Chair, February 2018

Challenges for water compliance in NSW

NRAR faces several challenges, most notably:

- **the sheer magnitude of the task** – NRAR regulates 39,000 water access licences and around 170,000 approvals across 157,000 km of waterways, with compliance work often being in remote locations
- **community expectation is high** – the 2023 Community Insights Voice survey found that 84% of the community expects more to be done to address unlawful water take [20], and community and water licence holders expressed a compliance target of 88%[21] compared to the current 73% baseline compliance rates across the MDB
- **climate and weather variability –** NRAR needs to be able to pivot its resources to deal with climatic events such as drought, flood and extreme temperature events, all of which bring different community expectations and compliance challenges
- **increased competition for water** – the value of entitlement increased by an estimated 17% between 2021 and 2023 during wet years[22], meaning that while the water trading market can assist water users to be compliant, strong demand driving high prices may also introduce a higher motivation for non-compliance
- **regulated community's attitude and understanding of complex laws** – a national Regional Wellbeing survey showed that:
  - NSW irrigators generally have historically more negative views towards NSW authorities than those in neighbouring states [23], noting though that the 2023 Water Sector Voice survey found that confidence in NRAR had increased across water licence holders who have engaged directly with NRAR officers[24]
  - 59% of NSW respondents find water regulations and laws too complicated, surpassing the national average of 47% [25]
  - 47% of NSW respondents report difficulties complying with all water laws, compared to the national average of 35% [26]
  - 49% of NSW respondents believe that a lack of adequate knowledge about water regulations is prevalent, compared to the national average of 41% [27]
- **differing demographics** – this includes:

[20] 2023 Water Sector Voice of the community NRAR insights report 2023 page 53
[21] WAMC Working group February 2024
[22] Marsden Jacobs and Associates. June 2023. NSW Water Valuation Consultancy, pg. 20
[23] Wheeler et al., 2017 Water policy debate in Australia: Understanding the tenets of stakeholders' social trust
[24] 2023 Water Sector Voice of the community NRAR insights report 2023 page 30
[25] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[26] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[27] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)

  - perceptions about compliance differ, with 80% believing most people comply with water laws in southern inland NSW *versus* 67% in northern inland and 58% in coastal areas[28]
  - willingness to report illegal water extraction varies markedly by region, with 55% in southern inland, 29% in northern inland and 24% in coastal areas reporting likely occurrences of non-compliance[29]
- **new government policy –** NRAR will need to continue implementing new government policies such as the non-urban metering reform reviews, new floodplain harvesting licences in north inland NSW and maybe delegated additional compliance responsibilities over the next price period for new policies recently conferred (i.e. private irrigation trusts and drainage boards) or being considered, such as drillers licensing.

NRAR response to drivers and challenges

NRAR is responding to these drivers and challenges by continuing to implement its statutory remit set out under the NRAR Act and Water Management Act, guided by its published strategy 2024–2026, and focusing on efficiency, effectiveness, accountability and transparency, and maintaining community accountability. In particular, NRAR will:

- **continue strong enforcement** – NRAR will continue to act to address serious non-compliances in order to ensure deterrence to others and a fair playing field for the compliant
- **undertake risk-based compliance and enforcement programs** – NRAR will continue to be risk-based, using triaging of alleged breach notifications to direct investigative efforts to the most serious matters, and using data analytics and intelligence to direct compliance campaigns to higher risk areas and activities
- **help customers to voluntarily comply** – NRAR will help the willing to navigate complex water legislation and rules, to support voluntary compliance through education and outreach as both an effective and cost-efficient means of raising compliance rates
- **champion improvements to the water management framework** – NRAR will continue to provide feedback to policymakers about how the water management rules work in practice and to suggest changes that make compliance more effective, more efficient and simpler for NRAR and customers
- **ensure transparency and accountability** – by publishing a Regulatory Policy explaining how we undertake compliance, regularly reporting compliance activity and enforcement actions, publishing annual regulatory priorities to ensure the community understands where NRAR is investing additional regulatory effort, and investing in regular stakeholder engagement
- **capture efficiencies** – NRAR has a statutory objective under the NRAR Act to be an efficient regulator. NRAR takes this seriously by ensuring our compliance programs use a cost-effective mix of outreach, education and enforcement and that these activities are supported by investment into:
  - remote sensing (such as satellite technology) and data analytics to help design compliance programs and direct our operational 'boots on the ground' to real and higher risk matters

[28] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[29] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)

  - staff capability to ensure staff are competent and confident to undertake their roles as effectively and efficiently as possible
  - an ICT upgrade that will, *inter alia*, deliver operational efficiencies
  - a QMS to ensure staff are guided by consistent processes
  - a maturity assessment process to ensure we improve toward best regulatory practice
  - championing improvements to water management rules and administration where this will improve NRAR's ability to be efficient (and effective)
  - using leading academic behavioural science and leading economists to understand the cognitive behaviours and economic influences that result in illegal take
- **remain adaptable** – NRAR has demonstrated adaptability in response to extreme weather and COVID-19 events by refining its monitoring and enforcement strategies and being able to shift internal resources, where needed, to respond to changing needs and circumstances.

Behaviour change model

NRAR continues to stand out amongst other regulators by working with an academic consortium to develop a sophisticated water compliance behaviour change model in NSW. This evolving model helps NRAR understand and predict water user behaviour in various conditions. It examines the following issues:

- **ability to comply** – water users' technical, financial and knowledge-based capacity to adhere to regulations
- **willingness to comply** – the ethical and motivational factors that drive users' intentions to follow the law
- **perception of detection and consequence** – users' beliefs about the likelihood of being caught and the severity of penalties.

The model is validated against a recognised framework[30] and a Transparent and Comprehensive model Evaluation (TRACE) document[31].

NRAR has used the model to inform its understanding of what combinations of compliance activities are most effective at improving compliance rates, through examining perceptions about likelihood of detection and consequences of penalty regimes. NRAR has also used the model to help NRAR understand the marginal cost that would represent an efficient investment into compliance, which is discussed later in this business case.

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[30] Augusiak, and V. Grimm (2014). "Merging validation and evaluation of ecological models to 'evaluation': A review of terminology and a practical approach".
Schmolke, A., P. Thorbek, D. L. DeAngelis, and V. Grimm (2010). "Ecological models supporting environmental decision making: a strategy for the future".

[31] Grimm, V., J. Augusiak, A. Focks, B. M. Frank, F. Gabsi, A. S. Johnston, C. Liu, B. T. Martin, M. Meli, V. Radchuk, P. Thorbek, and S. F. Railsback (2014). "Towards better modelling and decision support: Documenting model development, testing, and analysis using TRACE".

Current regulatory period

What NRAR is delivering in the current regulatory period

Since the 2021 WAMC price determination, NRAR has continued programs to drive improved compliance rates across NSW to maintain community confidence in the water management framework.

In 2022/23, NRAR restructured its operations to better reflect its strategic plan to continue strong law enforcement for serious and deliberate breaches of the law, as well as to invest in education and outreach programs. This would offer more on-ground support to help water users understand their obligations and comply with water laws.

This approach also reflects the feedback from water users, who value proactive detection, audits, educational services and responsive investigations of suspected non-compliance, evidenced by:

- consultation with customer advisory groups during July to August 2023, which highlighted a preference among water users for local knowledge and support, particularly valuing on-farm visits [32]
- the 2023 water sector survey revelation that 57% of water users considered property inspections by uniformed officers to be effective or extremely effective, while 60% had the same opinion about educational programs[33].

The following sections describe each of NRAR's functions required to deliver a modern, risk-based and outcomes-focused compliance approach.

Reactive – responding to harm – Investigation and Enforcement

NRAR responds to suspicious activity reports (SARs) submitted by the public, interagency referrals or by NRAR's remote monitoring and intelligence activities, including its satellite imagery program. SARs are triaged to ensure that high-risk cases are prioritised for investigation. Authorised Officers, appointed in accordance with the *Water Management Act 2000*, gather a range of evidence (through site inspections and interviews, and examining data from systems such as the Water Licensing System, Data Acquisition System and Water Accounting System) to determine whether an offence has been committed.

NRAR responds to confirmed breaches of the law in accordance with its published Regulatory Policy. Enforcement actions range from advisory letters for less severe matters to penalty notices and legal directions for more severe offences, to enforceable undertakings, criminal prosecutions and licence suspension or cancellation for the most egregious violations.

[32] Customer Advisory Groups WAMC consultation Valley-by-valley analysis of feedback July-August 2023Cags page 8
[33] 2023 Water Sector Voice of the community NRAR insights report 2023 page 60

Investigation and enforcement are the foundation of any compliance program because they provide specific deterrence to offenders and general deterrence to those contemplating non-compliance. The deterrence messages created by enforcement outcomes are then promoted in education, outreach and communications programs to motivate compliance in the wider regulated water user community. Visible enforcement actions contribute to community confidence that water laws are being adequately enforced, reinforcing the legitimacy and effectiveness of the regulatory framework.

The community expects their concerns to be promptly addressed when reporting a compliance issue to NRAR. This expectation drives the need for a call centre to receive SARs, a triage service to prioritise SARs and investigators to investigate SARs and take regulatory action where non-compliance is confirmed.

NRAR has responded to more than 9,832 SARs since commencement in April 2018[34].

These investigations have resulted in more than 2,084 enforcement actions since 2018, including 539 penalty notices, more than 659 directions or enforceable undertakings, more than 872 warnings and cautions for less serious breaches and commencement or completion of 39 prosecutions through the courts for serious breaches of law, which have achieved cumulative penalties of $1.8 million. Table 48 sets out NRAR's enforcement activities for each year since commencement in 2018.

The enforcement actions are also detailed on the NRAR Public Register[35].

Table 48: NRAR enforcement actions 2018-2023

Activity	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Suspicious activity reports received	840*	1464*	1606	1716	1536	2670	9832
Reports investigated and finalised	332	1377	1179	752	769	1052	4898
Formal warnings and official cautions issued	53	173	217	129	108	237	872
Penalty notices issued	28	149	170	69	67	73	539
Directions or enforceable undertakings issued	47	166	85	148	34	231	659
Advisory letter (all types)	163	171	204	734	611	1282	3165
Prosecutions commenced	9	12	13	3	1	1	39

* Incidents and alleged offences (methodology amendment)

Several examples of NRAR enforcement work are presented in the following case studies.

Case study: Substantial fines for illegally tapping irrigation pipeline

Prosecution by NRAR in the NSW Land and Environment Court: Concluded March 2024

[34] Include incidents and alleged offences 2018/2019 previous terminology

[35] https://www.nrar.nsw.gov.au/progress-and-outcomes/public-register

Offence: A former Wentworth region wine company and its manager pleaded guilty to 2 offences of illegally tapping into the Western Murray Irrigation (WMI) pipeline, involving an illegal take of just below 365 ML of water.

Outcome: The company was fined $326,500 and the manager was fined $172,500. Defendants also agreed to pay NRAR $95,000 in costs. This significant court fine serves as a strong deterrent to other water users who may consider illegal water use.

Case study: Enforceable undertaking – Dendrobium Mine

Illawarra Coal Holdings Pty Ltd (IC), operating the Dendrobium Coal Mine, agreed to an enforceable undertaking with NRAR following an investigation into unauthorised surface water take.

The company agreed to a $2.88 million community project to improve waterways and pay NRAR $70,000 to cover investigation, legal and Enforceable Undertaking monitoring costs. IC was required to consult with local Aboriginal communities and groups connected to the area where the community project will be undertaken and commit to improved surface water management by investing in and using an array of new and emerging technologies.

This undertaking not only rectifies compliance issues but also supports environmental sustainability and community engagement.

Proactive compliance: monitoring and auditing

NRAR is committed to proactive compliance programs because they seek to prevent or minimise harm to water resources, water users, cultural assets and the environment. These proactive programs respond to published annual priorities that are selected based on intelligence, spatial and data analytics as well as economic and climate condition forecasts.

The proactive compliance programs use a mix of monitoring, auditing and inspection activities informed by NRAR's intelligence, spatial and data analytics services.

As a risk-based regulator, NRAR focusses monitoring and auditing on larger water users. In line with feedback received during community engagement, NRAR has implemented a program that sees users with more than 100 ML of entitlement proactively audited at least once every 4 years, equating to 2,396 audits annually.

Proactive campaigns ensure targeted, efficient allocation of resources to compliance issues, leveraging the willingness to comply while generating greater on-ground visibility and presence. These programs are also designed to prevent and mitigate harms, rather than reacting to harm already caused.

Research indicates:

- proactive monitoring and auditing can significantly enhance compliance rates by fostering a culture of preventive behaviour in the regulated community [36]
- regular on-ground audits and inspections increase the perceived likelihood of detection by water users, which is a crucial element in encouraging voluntary compliance[37]
- proactive compliance initiatives build confidence within the regulated community.

The outputs of NRAR's proactive monitoring and audit program in 2023–24 are provided in Table 49. Below is a list of highlights.

- Non-Urban Water Metering Project: This project aims to enforce compliance with metering obligations among the largest water users in northern and southern inland NSW, representing some of the most significant recent reforms in water management. The project targeted water users with a combined entitlement volume of approximately 9.6 million ML. Compliance officers conducted desktop assessments for 1,135 properties with 8,581 works, encompassing an entitlement volume of about 8.2 million ML. Additionally, compliance staff visited 622 properties with 3,605 works, which included some of the largest water users in NSW. Enforcement actions were issued for 160 properties with a combined entitlement of 622,000 ML to further drive compliance and ensure accurate water accounting. As of June 2024, 554 audits and ongoing investigations are continuing to ensure compliance with the non-urban metering rules. These efforts are critical to NRAR's enduring priority of accurate water measurement and management. Due to factors outside the control of industry and governments, higher rates than expected of non-compliance with metering obligations persist, with NRAR continuing to invest resources to accelerate compliance as fast as practicable.
- Improving Floodplain Connections (IFC) Project : This project has been run in partnership with the Water Group of the NSW Department of Climate Change, Energy, the Environment and Water and funding from the Australian Government, which aimed to bring unapproved or non-compliant flood works into compliance across more than 100 priority areas in the northern Murray–Darling Basin. This aligns with NRAR's enduring priority to ensure water gets where it is meant to be on the floodplain. Among the more than 200 significant flood structures identified, NRAR completed in-field assessments for 113 properties and conducted physical inspections and documentation for 205 works. Consequently, NRAR has received 42 flood work referrals requiring action, including significant modification and removal. Eight flood works have commenced on the pathway to compliance and 7 have been removed from the landscape. As at June 2024, 33 investigations are ongoing.
- Irrigated Agriculture Compliance Program : This initiative targeted unlawful water storage, exceeding harvestable rights and poor water management practices in NSW's irrigated agriculture sector. NRAR conducted spatial analysis through its 'Eyes in the Sky' program, examining 78,627 dams and works across 22,350 properties in the Far North Coast, Murray and Murrumbidgee regions. These properties collectively held an estimated 653,980 ML of water. As a result,

[36] Scholz, J. T., & Lubell, M. (1998). Trust and taxpaying: Testing the heuristic approach to collective action. *American Journal of Political Science*, 42(2), 398-417.
[37] Tyler, T. R. (2006). *Why People Obey the Law*. Princeton University Press

compliance staff desktop-assessed 229 properties, reviewing a total of 1,532 dams and works. Targeted fieldwork led to inspections of storages containing 14,331 ML of water. As of June 2024, 47 investigations are ongoing, which are likely leading to significant enforcement actions including directions to require the removal of unlawful storages from the landscape.

- **Monthly Metering Reporting (MMR) Campaign** : This campaign was designed to increase self-reporting rates among 686 water users with cumulative entitlement of 559,370 ML in at-risk water sources. Because of this program, 12 investigations are ongoing as of June 2024. Increased water reporting via the MMR campaign is supporting the department to undertake vital analysis in at-risk ground water sources to calculate available water determinations (AWDs) for stock and domestic purposes and industry usage.
- **Overdrawn Accounts Project** : NRAR has developed the technology to review thousands of water accounts every year and automatically flags those requiring assessment. In 2023–24, the overdrawn account dashboard assessed 12,323 water accounts from 2022–23, which held a cumulative 11,849,581 ML of water entitlements. Detailed compliance officer assessments were required on 259 accounts, with a combined entitlement volume of 106,078 ML, which have resulted in 12 enforcement actions. From this program, 29 investigations are ongoing as of June 2024.

These programs are demonstrably expansive in their reach, through desktop capability and in-field work enabling monitoring over a cumulative 22,662 GL of entitlement across more than 40,000 properties and accounts in 2023–24. This monitoring resulted in enforcement actions at 178 properties, 352 works and in relation to approximately 625,000 ML, with a further 675 cases that continue to be investigated as of June 2024. The programs also give assurance to water users and the community that NRAR is actively monitoring water take in NSW, and that we will detect and respond to non-compliances.

NRAR's enforcement experience from these programs has been communicated to the department and has been instrumental in triggering the review of non-urban metering reform, with on-ground intelligence from these programs informing the review. A case study of NRAR's proactive metering compliance program is provided in Table 49 below.

Table 49: Proactive Compliance Campaigns

		Assurance and 'Eyes in the Sky'	Detection, engagement with water users and 'boots on ground'		Action/outputs, including enforcement	
		Assessed by spatial analysis and/or technology	Detailed desktop assessment (by compliance officer)	In-field visit	Actions	Investigations/ cases continuing as of 30/06/2024
Irrigated Ag. south and far north coast	Property	22,350	229	75	2	47
	Dams and other works	78,627	1,532	138	2	
	Water (ML)	653,980	316,880	14,331	0	
Overdrawn accounts and S60G 2021–22	Accounts	11,742	120	0	0	
	Work					
	Water (ML)	11,882,364	19,350	0	0	
Overdrawn accounts and S60G 2022-23	Accounts	12,323	139	0	12	29
	Work					
	Water (ML)	11,849,581	86,728	0	2,010	

		Assurance and 'Eyes in the Sky'	Detection, engagement with water users and 'boots on ground'		Action/outputs, including enforcement	
Monthly landholder reporting obligations	Property	686	402	5	4	12
	Works	4,862	648	6	5	
	Water (ML)	559,370	208,092	891	319	
Metering tranche 2	Entity	1,800	758	465	146	348
	Works	4,500	5,410	2,759	296	
	Water (ML)	3,400,000	2,343,653	832,812	558,209	
Metering tranche 3	Entity	3,400	377	157	14	206
	Works	7,100	3,171	846	49	
	Water (ML)	6,200,000	5,823,429	4,716,248	64,657	
IFC	Properties	223	113	113	0	33
	Works	0	205	205	0	
	Water					
ANNUAL PRIORITY COMBINED TOTALS	Entity/property/ accounts	40,782	2,138	815	178	675
	Works	95,089	10,966	3,954	352	
	Water (ML)	22,662,931	8,798,132	5,564,282	625,195	

Case study: Non-urban metering reform compliance program

NRAR focused compliance efforts on the rollout of the NSW government's metering reforms in the northern and southern inland regions. The compliance programs targeted higher-volume water users, including Government-Owned Meters (GOMs) in the south, covering approximately two-thirds of all water entitlements in NSW.

Northern Basin: Assessed 5,410 works, with 2,759 inspected in 2023–24. The results of the compliance actions included 420 advisory letters and 51 enforcement actions.

Southern Basin: Assessed 3,171 works through desktop reviews and conducted 157 site visits. Compliance rates in the south exceeded 50%, with 14 official cautions and 74 advisory letters issued.

Future plans: NRAR will continue to escalate enforcement actions, monitor tamper alarms and telemetry systems and monitor the duly qualified person workforce.

The program's findings have contributed to raising water users' awareness of the need to accurately measure water taken through AS4747 meters.

Proactive compliance: education, engagement, outreach and communications

NRAR has invested in proactive compliance functions to lift compliance rates cost-effectively and to respond to our community and water user research. It includes:

- NRAR's 2020 Community Benchmarking Survey, which revealed that one-third of water users were not confident they had adequate knowledge of the rules[38]
- the 2021 Pulse Survey, which indicated a clear demand for increased education about the rules[39]
- data collected during the 2022 National Regional Wellbeing Survey, which showed that NSW is below the national average in many aspects such as:
  - 59% of NSW respondents found water regulations and laws too complicated, compared to 47% nationally [40]
  - 47% of NSW respondents found it difficult to ensure compliance with all water laws and regulations, compared to 35% nationally [41]
  - 49% of NSW respondents believed that many people lack adequate knowledge of water regulations and laws, compared to 41% nationally [42]
  - 24% of NSW respondents believed that misunderstandings about regulatory requirements led to unintentional unlawful water extraction, compared to 15% nationally [43]
  - 45% of NSW respondents felt that irrigators do not receive sufficient support from regulators to comply with water laws, compared to 32% nationally. [44]

Importantly, education and outreach interactions with water users are also around 10 times cheaper than interaction through an investigation, as seen in Table 50.

Table 50: Cost per water user interaction

Function	Cost per landholder interaction
Investigation & Enforcement	$10,182 (FY23)
Outreach	$944 (YTD FY24)

Behavioural research indicates that enforcement alone does not deliver sustained compliance levels. Communicating and engaging with targeted stakeholders and regular on-ground, visible education and outreach services can help to establish compliant behaviours that become normalised over time[45].

Research conducted for the Inspector-General of Water Compliance[46] found that, despite a desire for information, many water licence holders do not actively seek it out. Nearly a third of these stakeholders reported never seeking information. Consequently, NRAR has established an outreach

[38] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0006/477015/NRAR-progress-report-2020-21.pdf page 26
[39] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0018/480222/NRAR-community-pulse-survey-2021.pdf page 7
[40] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[41] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[42] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[43] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[44] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[45] Holley, C., Mutongwizo, T., Pucci, S., Castilla-Rho, J., Sinclair, D. (2020). Groundwater Regulation, Compliance and Enforcement: Insights on Regulators, Regulated Actors and Frameworks in New South Wales, Australia.
[46] Annual Community Sentiment Survey 2023

function that visits water users on farms to actively engage and provide information and advice about compliance.

NRAR focuses its education and outreach services as an early compliance intervention, particularly for smaller water users. In line with feedback received during community engagement, NRAR has implemented an outreach program that focuses primarily on on-farm outreach and inspection of small users (less than 100 ML of entitlement) once every 8 years, equating to 3,714 inspections annually.

Water users often seek guidance from trusted sources like family, neighbours and water user groups, making partnerships with these entities essential for maintaining long-term compliance efforts[47]. NRAR therefore has developed an education unit that prepares education materials and makes these materials available online, at agricultural field days, and through trusted institutions such as TAFEs.

Since 2021, NRAR has undertaken the following education, engagement and outreach activities.

Education programs

- NRAR attended more than 10 agricultural field days annually across NSW to engage directly with local stakeholders and water users.
- NRAR conducted more than 10 focused educational sessions for water user groups.
- NRAR collaborated with NSW TAFE to develop and publish interactive educational materials about water compliance, which are available to TAFE colleges, students and water users online. These materials are available through TAFE courses and online for students and efficiently leverage the resources of other institutions to deliver education about water law and compliance.
- NRAR collaborated with local land services (LSS) to educate LSS project officers and farmers about water compliance. Like the work with TAFE, this education activity seeks to establish relationships that leverage external resources to help deliver water compliance information to broader audiences in a cost-efficient way.

Engagement programs

- NRAR developed a sophisticated stakeholder strategy based on an analysis of stakeholder reach and influence.
- NRAR held more than 100 interactions each year with stakeholders, including more than 30 face-to-face meetings.
- NRAR established relationships with the NSW State Emergency Service (SES) and the NSW Reconstruction Authority to facilitate effective collaboration during flood or drought events.

[47] Holley, C., Mutongwizo, T., Pucci, S., Castilla-Rho, J., Sinclair, D. (2020). Groundwater Regulation, Compliance and Enforcement: Insights on Regulators, Regulated Actors and Frameworks in New South Wales, Australia.

Outreach services

- NRAR undertook baseline compliance monitoring to support the social licence of water users and provide a baseline for assessing changes in compliance levels over time.
- NRAR inspected up to 3,700 sites each year providing on-site education and gathering valuable intelligence to enhance NRAR's operational insights and planning.

Communications

Public communication of NRAR's activities and programs is integral to maintaining community confidence in the enforcement of the law. It is used to inform water users about compliance and NRAR's compliance priorities. Public communication itself is designed to further motivate voluntary compliance and to promote and amplify general deterrence messages resulting from NRAR's enforcement activities. NRAR uses a range of communications platforms. Examples of NRAR communications since 2021 are:

- social media – NRAR's social media reached more than 44,000 impressions and 5,000 engagements in 2023, including nearly 1,000 link clicks
- traditional media – NRAR used radio, print and TV media, including interviews, to broadcast compliance messages widely
- NRAR website – NRAR's website provides guidance and information on water rules, enables the public to electronically report suspicious activities and provides updates on compliance activities and compliance rates. It received 52,000 visitors in FY24.

NRAR has developed and implemented a sophisticated communication strategy designed to increase the reach of communications as a key means of maintaining community confidence, amplifying deterrence messages and informing of NRAR activities. This strategy has significantly increased NRAR's presence in 2023–24, as evidenced by:

- a 54.3% increase in social media shares, comments and saves
- a 169.5% increase in interaction rates
- a 366.7% increase in LinkedIn engagement or educational posts, which received more than 35,800 impressions and 2,600 engagements
- content promoting NRAR's success stories and activity reports achieving more than 60,215 impressions and 6,995 engagements in 2023.

Enabling functions

NRAR's operational compliance functions described above rely on enabling functions to deliver NRAR's statutory objectives for efficiency, effectiveness, transparency and accountability. These enabling functions and achievements in the current price period are described below.

Legal Services

Following the NSW Ombudsman's recommendation, NRAR established a dedicated legal capability to provide NRAR with early guidance on briefs and evidence collection[48]. The legal services also manage NRAR's prosecution processes through the courts and legal interactions. Importantly, NRAR funds this service, but the legal FTE structurally remain within the department, and so legal services are a line-item cost in this business case.

NRAR has commenced or completed 39 prosecutions through the courts since 2018 and finalised 20 prosecutions since July 2021, which have achieved cumulative court-imposed penalties of $1.8 million since 2018.

Since commencement, this legal service has also helped NRAR to negotiate and accept 10 enforceable undertakings as legally binding alternatives to prosecution for water law violations, ensuring companies address their non-compliance and contribute positively to the community and environment[49].

Intelligence, Spatial, and Data analytics

NRAR is an intelligence-informed regulator, using intelligence, spatial and data analytics to:

- remotely monitor water take and use through satellite imagery programs and data analysis of overdrawn accounts, ensuring that non-compliant water users are identified and investigators are deployed to high-risk non-compliances
- inform NRAR's annual priorities to ensure NRAR's compliance campaigns target and address important compliance issues
- provide data analysis to assist in the design of compliance and education campaigns
- integrate complex data sources, including satellite imagery, water licensing system information, water orders and accounts data, and external data, to inform NRAR's strategy and programs.

NRAR's intelligence and detection capabilities have become increasingly important over the current price period, especially where the COVID-19 pandemic meant that responding to public reports was constrained by travel restrictions. Figure 37 shows a substantial increase in NRAR detected (self-generated) alleged breach notifications since 2020.

[48] NSW Ombudsman Special Report https://www.ombo.nsw.gov.au/__data/assets/pdf_file/0006/57903/Water-compliance-and-enforcement-a-special-report.pdf

[49] https://www.nrar.nsw.gov.au/about-us/compliance/regulatory-responses/enforceable-undertakings

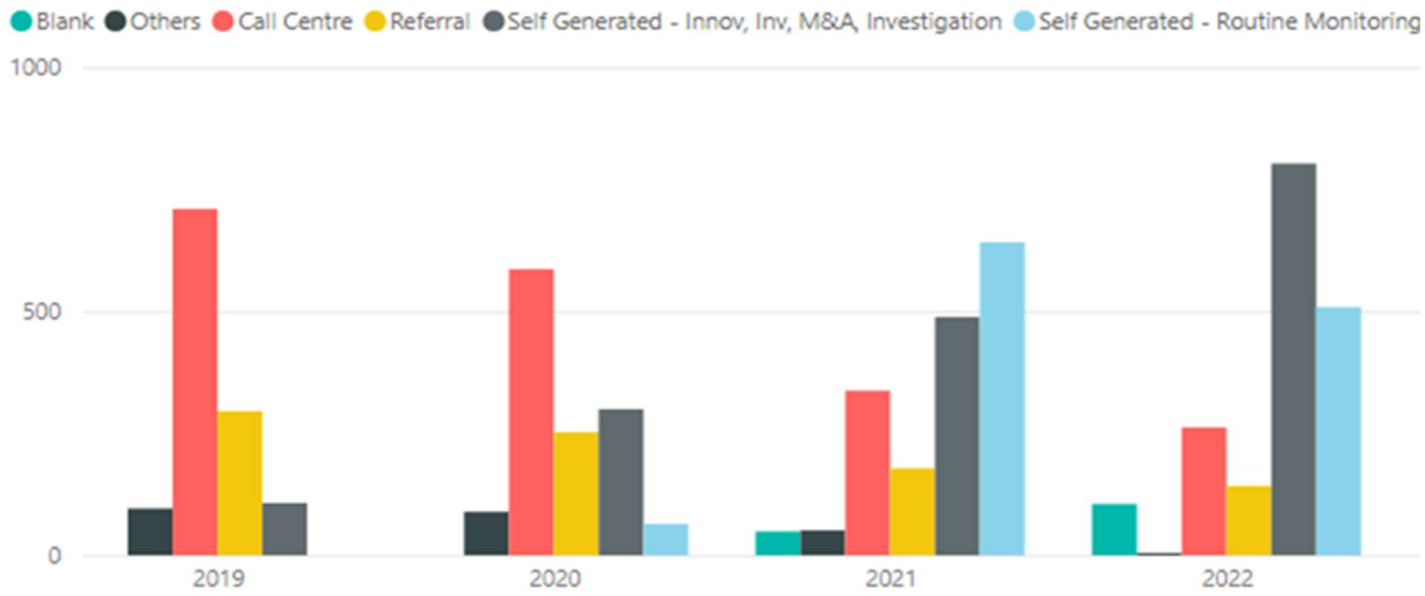

Figure 37: Number of ABN generated by source type

The case studies below demonstrate the contribution of intelligence, spatial and data analytics capabilities to the efficient deployment of NRAR's on-ground operational activities.

Case study: Satellite imagery informing the design of NRAR's Irrigated Agriculture Murray/Murrumbidgee on-farm dam campaign 2023–24

NRAR used satellite imagery to identify unapproved water storages and those likely to exceed maximum harvestable rights. From 22,350 properties, NRAR identified 305 high or medium priorities requiring further assessment, which contained 5,288 individual dams. Seventy-five of these properties required compliance officer inspection, with spatial analysis ensuring the efficient deployment of field staff.

Case study: 'Eyes in the Sky' Floodplain Harvesting Monitoring (FPH)

NRAR has operationalised a floodplain harvesting volumetric compliance monitoring dashboard based on satellite estimates of water volume changes in the 1320 potentially FPH-capable dams across the Northern MDB of NSW. The dashboard automates a water balance calculation for any floodplain harvesting rainfall runoff event of interest, whereby satellite estimates of water take by FPH dams are compared against all metered take volumes aggregated at a per-property level for the 584 FPH entity properties, which cover 16,100 km^2 of the NSW Northern Basin. The program is designed to highlight and risk-rank any FPH property, where large water volume increases in their FPH dams cannot be explained through per-property metered water take and exempted rainfall-runoff volumes. Any such 'anomalous properties' are flagged for further detailed investigation. The program is monitoring:

- 584 FPH entity properties that cover an area of 16,100 km^2 and contain 1320 potential FPH capable dams

- storage volume curves (SVCs) that NRAR considers to be reasonably accurate are available for 1065 of the 1320 potentially FPH-capable dams. These 1065 dams have a total volumetric capacity of 1,240 GL (after applying a 1 m freeboard), which is equivalent to 2.5 Sydney Harbours (one Sydney Harbour is 500 GL).

The total floodplain harvesting, regulated river, unregulated river and groundwater entitlement shares associated with the 584 FPH entity properties that are being monitored through this program is 2,340 GL, or approximately 15% of the total 15,200 GL of water entitlement shares in NSW.

Case study: Eyes on the Data - Bore Extraction Limits

NRAR efficiently monitors groundwater extraction limits or bore extraction limits (BELs).

NRAR monitors all 1,337 groundwater approvals with BEL conditions using satellite technology to track and monitor groundwater use. This approach allows for the continuous monitoring of 420 GL of water, representing a substantial portion of the state's groundwater resources.

The extent of NRAR's remote monitoring capability is summarised in Table 51.

Table 51: NRAR's remote monitoring capability

NRAR remote monitoring program	NSW total entitlement share volume (GL)*	Entitlement share monitored by program (GL)	Entitlement share monitored by program (%)
Floodplain harvesting volumetric compliance	15,200	2,340	15%
Negative water account balances	15,200	9,377**	62%
Bore extraction limits	1,993***	420	21%

*Assumes 1 share equals 1 ML across all NSW water sources.
**9,377 GL represents the highest annual metered water take recorded in NSW (2016-17 water year).
***1,993 GL is the total volume of groundwater entitlement shares in NSW, with 420 GL (21%) under BEL conditions, monitored via satellite technology.

Regulatory Policy

NRAR operates within the broader water sector, where our role is to enforce the law. The regulatory policy function helps NRAR understand the law and its intent so that it can effectively enforce the law, and importantly, is a vital contributor to continuous improvement of NRAR's internal operations and in championing improvements in the water management framework.

In particular, the regulatory policy function enables:

- feedback to policymakers (the department), implementers of the water management framework (the department and WaterNSW through the licensing and approval function) and to have input into

new policies being developed (by the department) to ensure they are enforceable, based on NRAR's on-ground experience (e.g. feedback on non-urban metering reforms and about licensing and approval conditions). This is a vital function to ensure that the water rules are enforceable, that they can be understood by NRAR and water users, and that they can be practically and efficiently implemented

- development of internal operational guidance to NRAR staff about the application of complex or difficult parts of the law, such as in applying Enforceable Undertakings
- coordination of NRAR interactions with water sector governance, such as the water sector Roles and Responsibilities Agreement, the Memorandum of Understanding between WaterNSW and NRAR, and the role of the WaterNSW Operating Licence in enabling NRAR's efficient and effective operations.

Over the current price period, NRAR has documented various enforcement challenges within the regulatory framework and provided this feedback to the department and WaterNSW. Key contributions of the Regulatory Policy function include:

- a review of non-urban metering reforms in 2023, which was prompted by NRAR's intelligence, operational observations of the reforms in practice and policy analyses, which indicated the meter rollout was being impacted by market barriers, which needed to be addressed for the reforms to be timely and effective. This analysis prompted the Minister to commission a review of these reforms in 2023, reflecting NRAR's proactive role in improving regulatory frameworks for the benefit of water users, and in enabling improved enforcement of metering requirements
- strengthening enforcement powers, which the Minister commissioned in late 2023, based on NRAR's advice to the department and the Minister about NRAR's operational and legal experiences and challenges since commencement in 2018
- a statewide water valuation methodology, where NRAR advocated for an amendment to the Water Management (General) Regulation 2018 to enable section 60G of the Water Management Act to be fairly applied across NSW
- providing feedback to WaterNSW and the department as the licensing authorities under the Water Management Act about the enforceability of some conditions, and currency of information in approvals to enable efficient NRAR liaison with water users
- data management improvement, which has commenced as a consequence of NRAR providing feedback to WaterNSW about data accuracy and currency, and also working with IPART to seek data management standards in the WaterNSW Operating Licence.

Staff Capability

NRAR is committed to ensuring its staff are competent and confident, delivering effective compliance services efficiently to water users and the community. To achieve this, NRAR operates a comprehensive staff capability function that focuses on:

- inducting new staff through standard training that ensures staff are aware of NRAR's objectives, the water rules, NRAR's strategy and policy, Work Health and Safety (WHS) and commitment to strong ethical behaviour

- establishing standards for Authorised Officer knowledge and capabilities and delivering training to enable staff to meet these standards
- developing and delivering tailored training and capability development programs to address identified gaps in knowledge and skills and to enable the rollout of new technologies that allow operational staff to operate more efficiently (e.g. drone training).

Case study: Improvements in staff training and engagement

A 2021 water user pulse survey revealed concerns about NRAR officers' customer service, practical field experience and local community presence[50].

NRAR responded to this survey by commencing field camp training for staff to ensure they have basic water management skills, can use technology and can engage well with water users. This resulted in a significant improvement in NRAR staff performance, as evidenced by the 2023 Water Sector Voice survey and seen in Figure 38. This 2023 survey found a statistically significant increase in confidence across every metric among water users who had engaged directly with NRAR officers.[51] Even licence holders with grievances expressed relatively high levels of satisfaction with the professionalism of NRAR staff.[52]

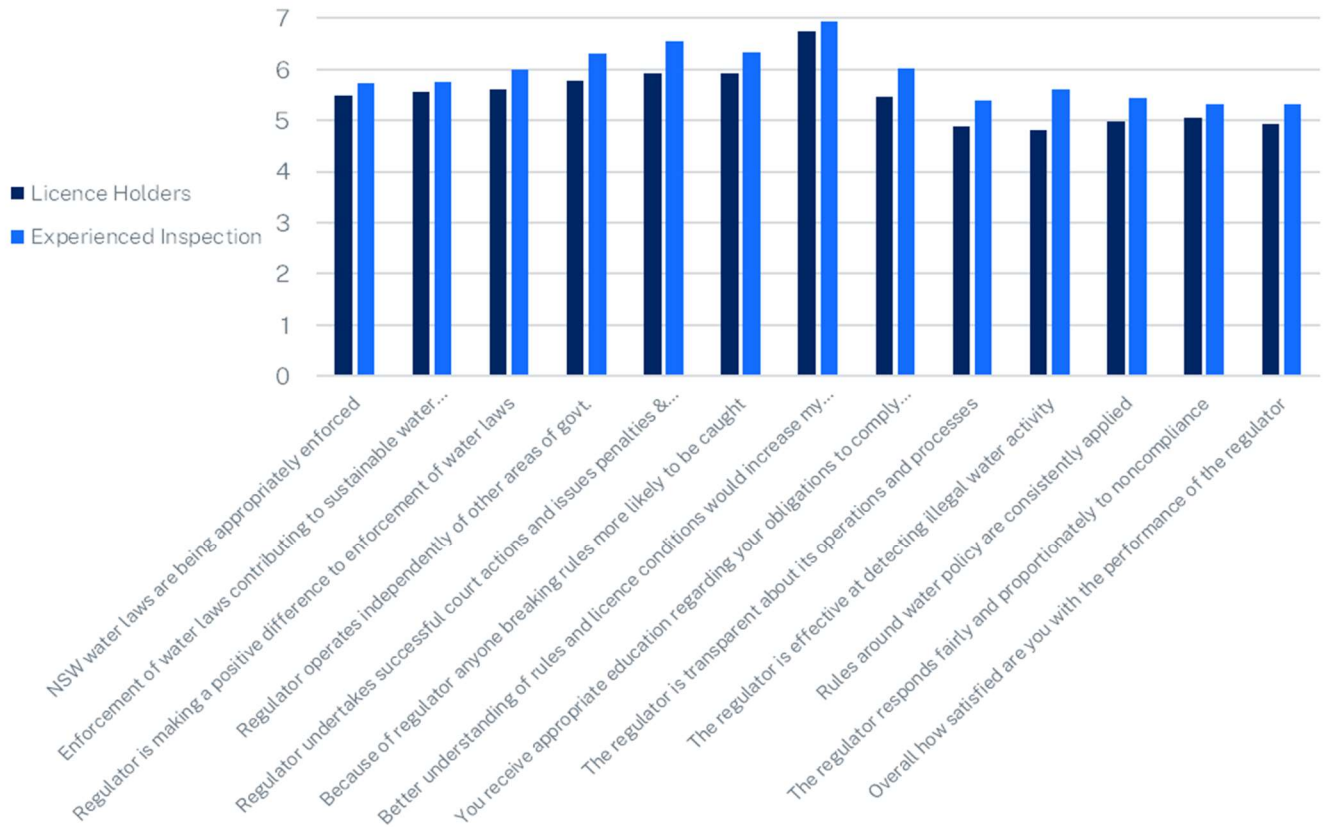

Figure 38: Level of satisfaction amongst water licence holders who experienced NRAR interaction vs those who didn't

[50] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0018/480222/NRAR-community-pulse-survey-2021.pdf page 10
[51] 2023 Water Sector Voice of the community NRAR insights report 2023 page 30
[52] 2023 Water Sector Voice of the community NRAR insights report 2023 page 44

Systems and Assurance

NRAR seeks to be a modern, best-practice regulator and, as such, invests in systems assurance and continuous improvement to progress toward this objective.

The systems and assurance function:

- maintains and embeds NRAR's ISO 9001 Quality Management System (QMS). The QMS ensures a consistent compliance process, assuring NRAR and the community of proper, robust work practices and establishing constant review and improvements to processes, including identifying opportunities for efficiency. A case study of an assurance activity undertaken as part of QMS is presented below
- assesses NRAR's maturity against a best-practice regulatory framework published by AELERT (Modern Regulator Improvement Tool – MRIT) to ensure NRAR continuously improves toward best practice in an orderly, deliberate manner and then supports and monitors this progress. Since 2017, and through the current determination period, NRAR has advanced from 'absent' or 'emerging' in many of the 12 criteria of the MRIT to 'maturing' in 9 out of 12 criteria by 2022, as shown in Figure 39 below. NRAR will continue to assess its maturity against the MRIT and judiciously invest in further maturing its regulatory practice.

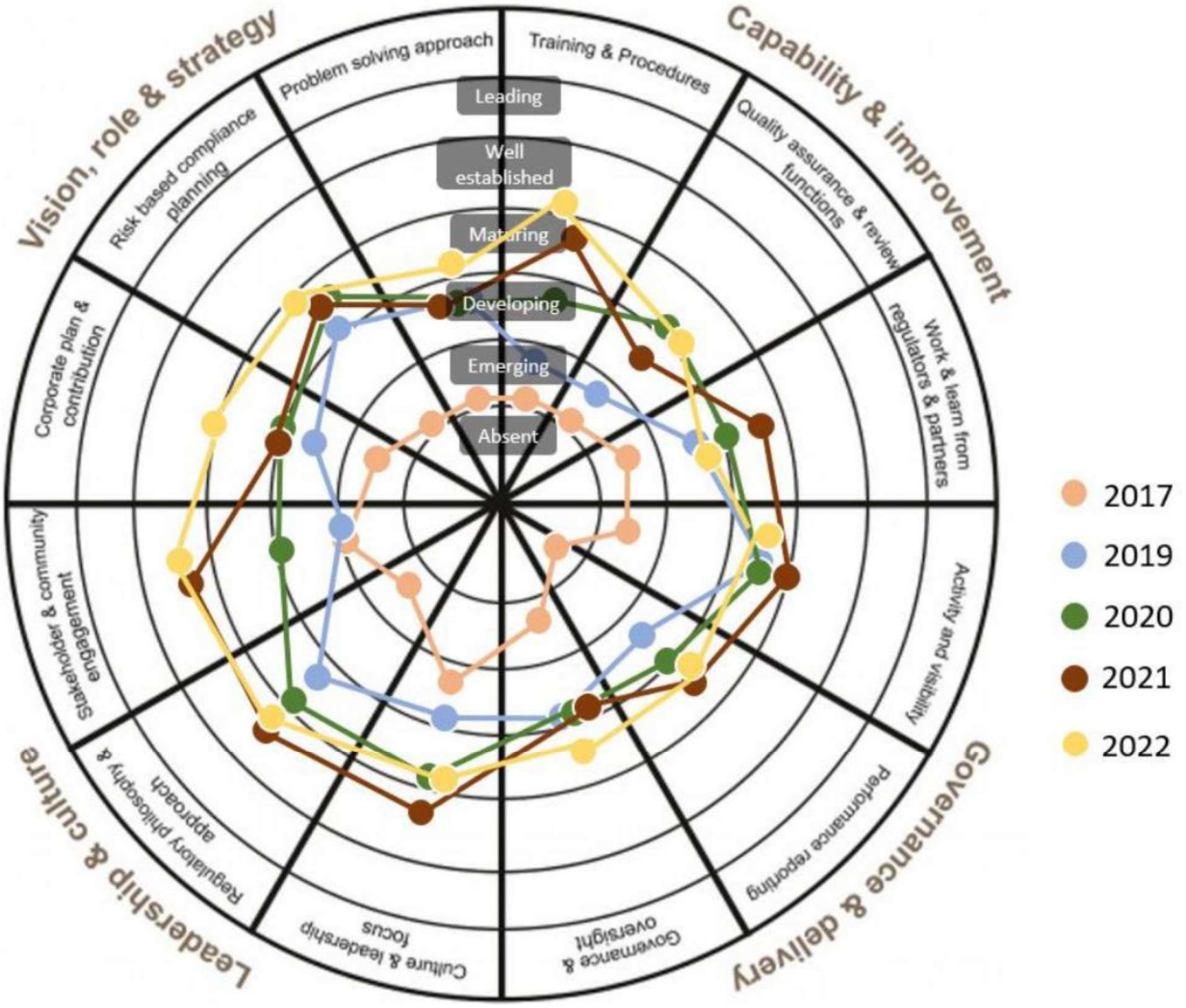

Figure 39: NRAR's Regulatory Maturity Assessment 2017–2022

NRAR's improved maturity was recognised in a 2022 report by the Inspector-General of Water Compliance (IGWC),[53] which:

> *commended New South Wales for its progress since 2017, particularly regarding the resources dedicated to managing compliance; the level of public reporting on compliance and enforcement activities; and the adoption of new technologies to increase monitoring capabilities.*

The 2023 Community Insights Voice survey[54] also found that NRAR is on the right path and is now a balanced regulator.

> *NRAR is observed to be maturing as an organisation and achieving a better balance for licence holders.*[55.]

Case study: Assuring proper process for managing compliance campaigns

NRAR evaluated the implementation of our compliance campaign for the non-urban metering reform Regulatory Priority in 2024. Our quality experts evaluated how NRAR identified and communicated with licence holders, undertook fieldwork and kept records.

The assurance activity found the campaign used an appropriate risk-based approach to identify licence holders and plan inspections, that effective campaign planning ensured capable staff and equipment were available to efficiently conduct fieldwork, that communications with licence holders were supported by adequate guidance and templates, and that appropriate records were kept and data gathered and analysed.

The assurance activity identified opportunities to clarify processes and procedures as well as to improve aspects of record keeping. These recommendations are being implemented and tracked until fully implemented.

Organisational support

As with any organisation, NRAR requires dedicated organisational support to undertake fundamental administration and governance activities and to support operational field staff. NRAR has established an organisational support function to:

- handle public and stakeholder enquiries
- manage procurement and payment activities to ensure transparency and accountability
- undertake budgeting and financial management to ensure fiscal responsibility
- fulfil corporate and activity reporting obligations to ensure accountability and transparency and maintain public trust and insight into NRAR's activities
- provide essential project and administrative support to facilitate smooth operations.

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[53] Inspector General Water Compliance. August 2022. Compliance and enforcement across the Murray-Darling Basin.
[54] Fourt Consulting. 2023. NRAR Feedback Insights Presentation 2023, p 13
[55] Fourt Consulting. August 2023. NRAR Insights Feedback Presentation 2023, p 13.

ICT

NRAR administers 2 bespoke ICT systems critical for compliance and enforcement, namely:

- a case management system for documenting compliance activities and storing electronic information to evidentiary standards to ensure effective enforcement
- an ICT platform for documenting compliance processes and supporting NRAR's ISO9001 QMS. Robust documentation systems are essential for maintaining compliance standards and facilitating audits and reviews of NRAR processes.

NRAR has been working throughout the current price period to replace the existing case management system to address vendor continuity and cyber security risks.

NRAR's current allocation of resources to each compliance function is shown in Table 52. This is the FTE included in this business case.

NRAR considers this to be an effective mix of on-ground, operational FTE to respond to harm, undertake activities that seek to prevent harm, respond to customer feedback desiring more assistance in navigating complex legislation and enable functions that support effective operational activity. NRAR can pivot this resource according to prevailing circumstances and priorities.

Table 52: NRAR Full-time equivalent roles across the functions

Function	Team	FTE*
Responding to harm	Investigations & Enforcement / Proactive Compliance	77
Preventing harm	Education	7
	Engagement	6
	Outreach	33
	Communication	6
Enabling functions	Intelligence, Spatial and Data Analytics	9
	Organisational Support	21
	ICT	4
	Regulatory Policy	9
	Capability	5
	Systems & Assurance	4
Total		181

*Note that legal services FTE are not included in this table as NRAR FTE, as the legal service FTE is domiciled in the department.

Expenditure

One activity code for NRAR

In the previous determination, NRAR recovered revenue across 3 activity codes and shared those codes with the other WAMC agencies, making it difficult for stakeholders to correlate IPART-determined costs directly with NRAR.

NRAR has responded to stakeholders' requests for simplification and transparency by allocating all NRAR costs to activity code (W08-03) in this 2025–2030 business case.

NRAR difference from AIR to actuals for W08-03 under 'impactor pays' principle

NRAR has historically reported expenditures to IPART in the Annual Information Return (AIR) separately for W08-03 Compliance Management and W10-01 Customer Management. Additionally, NRAR's AIR has excluded expenditures on compliance activities where other funding sources were available. These separate expenditures include:

- metering compliance – NRAR received temporary funding from the NSW Government to implement the non-urban metering reforms (NUMR) rollout. This initiative involved education to enhance water users' understanding of their obligations to install and validate meters, as well as audits, investigations and enforcement actions to ensure compliance with requirements to install meters
- legal services from the Attorney General's Legal Fund (AGLF) – since its establishment in 2018, NRAR has used funding from the AGLF for prosecutions and litigation. The NSW Crown Solicitor has advised that this funding should be recovered through the WAMC determination in accordance with M2016-04-NSW Government Core Legal Work Guidelines
- federally funded compliance activities – the Australian Government has funded several programs, including efforts to enhance floodplain connections by removing unlicensed flood works, funds to help build a compliance performance benchmarking framework across MDB jurisdictions, and the Hydrometric Networks and Remote Sensing Program to improve water measurement and monitoring in the Basin.

While these activities have been funded from other sources to WAMC up to date, the functions fall within the definition of W08-03 Compliance Management. As a consequence, NRAR has underreported the total AIR reported expenditure that should have been reported for FY22 and FY23.

NRAR has undertaken an analysis of our total expenditure to consider what should have been reported for FY22 to FY24. Table 53 presents the results of that analysis, showing previously reported AIR costs and the revised NRAR WAMC expenditure that should be attributed to W08-03 Compliance Management services, including both the previously excluded costs and consolidating the expenditure under a single activity code.

Table 53: NRAR WAMC AIR reported 08-03 costs and actual NRAR WAMC-related expenditure

	FY22	FY23	FY24
AIR reported compliance	$17,411,591	$21,275,217	$31,494,987
AIR reported customer management	$887,186	$627,976	-
Total AIR reported expenditure	$18,298,777	$21,903,193	$31,494,987
NRAR total expenditure (from financial report)	$26,649,000	$32,443,000	$40,421,000*
*Less controlled activity approvals (7.2%)***	-$1,918,728	-$2,335,896	-$2,910,312
*Less licensing and approvals****	-$1,568,000	-	-
*Less compliance on unlicensed activity 16.4%)*****	-$4,370,436	-$5,320,652	-$6,629,044
Plus CSO costs	$1,548,660	$1,737,992	$613,343
Revised NRAR WAMC expenditure	$20,340,496	$26,524,444	$31,494,987
Difference	$2,041,719	$4,621,251	$0

*NRAR total expenditure for FY24 is projected until the audit of accounts is finalised.

**7.2% of NRAR's compliance cases relate to Control Activity Approvals for works on waterfront Revised NRAR WAMC expenditure

Revised NRAR WAMC expenditure land, which is not associated with licensed water take, and so these costs should not be borne by licensed water users under the 'impactor pays' principle.

***The licensing and approval function was transferred from NRAR to the department in FY22.

****16.4% of NRAR's compliance cases relate to unlicensed activity, and licensed water users should not bear these costs under the 'impactor pays' principle.

Table 54 outlines the combined WAMC expenditure for W08-03 for the current period. NRAR notes that a small component (approximately $180,000 per year) of the combined proposed expenditure is assigned to WaterNSW and captured in the cost model. This cost has been separated out in Table 54 to enable IPART to undertake a comprehensive review of NRAR's efficient costs. Table 54: Current period operating expenditure and proposed costs ($000, 2024-25)

W08-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Compliance management	**2021-22**	**2022-23**	**2023-24**	**2024-25[a]**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - NRAR	19,206	19,092	18,467	18,360					
IPART allowance - WNSW	206	208	207	202					
IPART allowance	**19,412**	**19,301**	**18,674**	**18,562**					
Actual expenditure - NRAR	25,762	31,815	40,421	45,900					

W08-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Compliance management	**2021-22**	**2022-23**	**2023-24**	**2024-25[a]**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Actual expenditure - WaterNSW	165	87	105	183					
Actual expenditure	**25,927**	**31,902**	**40,526**	**46,083**					
Proposed expenditure - NRAR					38,374	35,966	34,130	32,842	31,853
Proposed expenditure – WNSW					178	174	176	182	187
Proposed expenditure					38,553	36,140	34,306	33,023	32,040

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

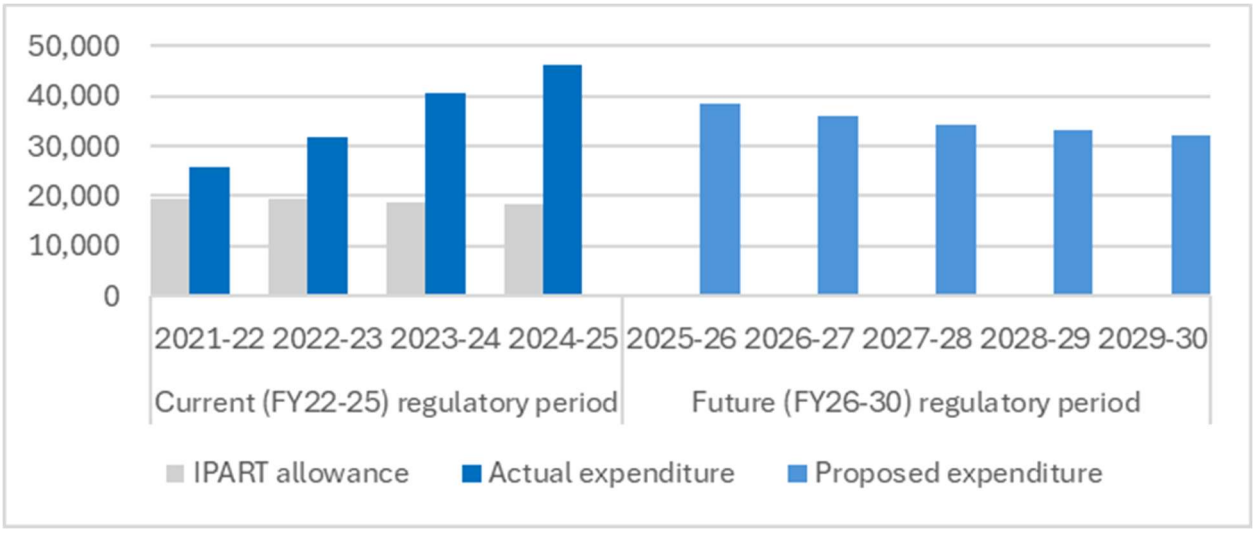

Figure 40: W08-03 Compliance management 2026-30 ($000, 2024-25)

Why our actual expenditure is higher or lower than the IPART allowance in the current regulatory period

NRAR's compliance management costs have exceeded the 2021 IPART determination due to:

- responding to water user needs for improved outreach and education services to help navigate complex water management legislation and to voluntarily comply
- transfer of costs from the Attorney General's Legal Fund to NRAR to run prosecutions
- new compliance requirements such as non-urban metering and floodplain harvesting
- ICT costs to respond to vendor continuity and cyber security risks.

These additional costs are explained below.

Importantly, NRAR secured the additional funding needed over the current price period from sources other than WAMC, and so the additional costs since the IPART 2021 price determination have not been borne by water users.

Additional education and outreach services

NRAR has undertaken multiple surveys and analysed various research, which all indicate that water users in NSW are mostly willing to comply but are subject to complex legislation and need help to understand the water rules to voluntarily comply. In addition, the community has indicated that it expects more to be done to increase compliance rates. This is evidenced by the following:

- NRAR's 2020 Community Benchmarking Survey found one-third of water users were not confident in their understanding of the rules[56]
- NRAR's 2021 Community Benchmarking Pulse Survey found a sentiment from water users 'that NRAR should provide education about the rules'[57]
- the 2021 Regional Wellbeing Survey found that 59.3% of NSW water users found the laws too complicated, which was higher than the national average of 47.4%[58]
- the 2021 Regional Wellbeing Survey found that 23.9% of NSW irrigators believed misunderstandings led to illegal water extraction [59]
- the 2023 Community Insights Voice survey[60] found more needed to be done to increase compliance rates and community confidence in water law enforcement
- the 2021 IPART determination and Customer Advisory Groups (CAGs) found water users expressed a need for:

[56] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0006/477015/NRAR-progress-report-2020-21.pdf page 26
[57] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0018/480222/NRAR-community-pulse-survey-2021.pdf page 7
[58] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[59] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[60] Fourt Consulting. 2023. NRAR Feedback Insights Presentation 2023, p 13

  - a balanced approach to compliance, including extension services to help users achieve voluntary compliance
  - data on unbiased compliance rates to restore social licence and provide context for NRAR's public reporting
- Community Insights 2023 found that 84% of the community expects more to be done to address unlawful water take[61]
- compared to NRAR's measured baseline compliance rates in the MDB of 72.9%[62], community forums during the WAMC consultation processes advised they would be confident in the framework when compliance reaches 88%[63]
- consultation with CAGs during July–August 2023 highlighted a preference among water users for local knowledge and support, particularly valuing on-farm visits[64]
- the 2023 Water Sector Survey also revealed that 57% of water users considered property inspections by uniformed officers to be effective or extremely effective, while 60% had the same opinion about educational programs[65].

NRAR has invested an additional $2 million per annum in education and $5.5 million in engagement and outreach services since 2022 to ensure there is an on-ground presence to help willing water users to voluntarily comply with water rules.

While NRAR reserves the right to re-allocate resources to functions as needed to respond to changing circumstances, NRAR's current outreach services have been deliberately resourced to enable compliance monitoring of up to 3,700 sites per annum. This enables a 95% statistical confidence in the monitoring results across 39,000 water users in NSW, noting that outreach staff not only monitor compliance but concurrently offer on-farm extension services and collection of intelligence, information and data to inform compliance program design.

These monitoring results are important as they provide the baseline compliance rates that support social licence for water users, enable NRAR and the community to monitor change in compliance rates over time and enable NRAR to evaluate the effectiveness of specific program interventions over time.

Interestingly, the community forums undertaken to help inform this submission expressed a desire for a higher audit frequency than enabled by 33 FTE on this function, with 81% wanting a 34% increase in the frequency of inspection at high-risk sites and 57% wanting a 14% increased frequency of inspection of all other water users.

Legal costs

Legal costs for NRAR have increased due to:

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[61] 2023 Water Sector Voice of the community NRAR insights report 2023 page 53
[62] https://www.nrar.nsw.gov.au/__data/assets/pdf_file/0006/477015/NRAR-progress-report-2020-21.pdf page 26
[63] WAMC Working group February 2024
[64] Customer Advisory Groups WAMC consultation Valley-by-valley analysis of feedback July-August 2023Cags page 8
[65] 2023 Water Sector Voice of the community NRAR insights report 2023 page 60

- the Crown Solicitor's Office (CSO) advice to NRAR that funding for NRAR prosecutions be recovered through the pricing process, in accordance with the Core Legal Work Guidelines. These costs are an average of $2 million a year
- a growth in internal demand for legal support and advice for frontline compliance work as a result of increasing complexity of cases requiring legal guidance on evidence requirements, more sophisticated defences and NRAR's increased use of enforcement tools such as EUs and s 60G charges, which are more likely to be challenged. This demand has increased legal costs from $720,000 (adjusted for inflation) to $1.4 million annually to increase legal resources from 4.6 to 7 FTE, which remains modest compared to other regulators such as the NSW EPA, which has 88 legal and corporate FTE. [66]

ICT system replacement

NRAR has commenced the replacement of its case management system (CIRaM). The ICT costs in this business case are operating expenditure and are for contractors to develop the final modules of this new system. The 2010 CIRaM case management system presented risks associated with vendor continuity and cyber security.

The NSW Cyber Security Policy requires NSW government departments to manage cyber security risks to their information and systems. Under this policy, CIRaM has been identified as a 'crown jewel' and an operationally vital system. 'Crown jewels' are required to meet specified standards, and the CIRaM system has scored poorly in a departmental audit against those standards.

Due to the critical nature and increased risk of delay, the NSW Government has already funded the first stage of this project to replace CIRaM.

NRAR has projected the outstanding ICT replacement cost to be $3,721,742 over the course of the determination period but will be delivered in year 3 where the efficiencies are to be realised. These efficiencies are reflected in the cost forecasts included in this business case.

Non-urban metering and floodplain harvesting

NRAR has had additional compliance work over the current price determination period resulting from new water rules for non-urban metering and floodplain harvesting. Specifically, NRAR has been doing additional compliance and enforcement work related to the rollout of the non-urban metering reforms to ensure water users are installing accurate meters, and now regulates 500 new floodplain harvesting licences that have been issued in northern NSW.

This business case includes new, additional ongoing compliance costs that NRAR will incur because of the meter reforms, namely:

1. normalising the need for water users to operate, maintain and validate meters as an ongoing requirement, noting that in NRAR's experience with the meter rollout, compliance intervention is required to motivate water users to secure duly qualified persons (DQP) services for validation

[66] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/whoweare/21p3355-epa-annual-report-2020-21.pdf

2. monitoring and responding to telemetry alarms that may indicate meters are faulty. NRAR estimates that, based on current alarm rates, NRAR will receive 8,800 additional suspicious activity reports for the projected 15,000 meters required to be installed under the meter reforms. This is a significant additional workload to the current 2,400 suspicious activity reports received by NRAR in FY24. Additionally, NRAR will continue to monitor sites with conditional cl 233 exemptions and alternative telemetry setups, such as water utilities using SCADA systems
3. enforcing replacement of failed meters and local intelligence devices (LIDs). NRAR estimates 1,500 meter replacements will be required per annum and, with a voluntary compliance rate of 75% determined by NRAR's compliance monitoring, this will translate into an additional 375 investigation and enforcement cases per year. This represents a 30% increase in NRAR's current case load
4. monitoring DQP performance and compliance. DQPs are the cornerstone of the meter reforms, providing assurance to water users, the community and NRAR that meters are accurate. DQPs performance is therefore essential to community confidence in the meter reforms. NRAR will provide assurance about the veracity of the DQP scheme by auditing 5% of DQP installations per year or 750 audits annually. Even if only new installations or revalidations are audited, the number would still be significant, at approximately 150 audits per year
5. reviewing reporting requirements (cl 244 and cl 250). Reporting of water take is essential to the enforcement of water user volume limits, for water accounting and for water planning purposes. NRAR will therefore review 10% of large user reports per annum, which equates to 1,500 desktop assessments, with substantially more required for the smaller user group, as annual reporting is the only mechanism to capture water use where no telemetry is present.

This business case includes an additional 18 FTE, or $4.5 million per annum, to undertake this additional business-as-usual compliance work, noting that 18 FTE will enable only the projected additional 375 investigations. The remainder of the additional business-as-usual activity listed above will be absorbed by existing NRAR resources.

Importantly, the metering costs may reduce over the longer term beyond the next price period, as metering becomes a normal feature of water management and subject to the data acquisition system meeting evidentiary data standards that would obviate much ground verification currently needed by NRAR to confirm metered data.

Delivered Service Level

NRAR's performance against current period output measures and performance indicators is presented in Table 55.

Table 55: NRAR current period performance against output measure and performance indicators

Measure number	Output measure / performance indicator	Target	Performance	Commentary
OM70	Publish compliance activity by water sharing plan on the NRAR website quarterly, including observed levels of compliance and noncompliance. Output = 100% coverage of WSPs per month	100%	2021–22: 100% 2022–23: 100% 2023-24: 100%	NRAR has improved transparency with quarterly compliance activity published in an interactive dashboard on its website.
OM71	Publish annual progress reports. Output = 5 (this should be one annual report per year)	5	2020-21: 1 2021–22: 1 2022–23: 1 2023-24: 1	NRAR publishes annual progress reports detailing its compliance work.
OM72	Community benchmarking survey (2 yearly) Output = 2	2	2021–22: n/a 2022–23: 1 2023-24: 1	NRAR has collaborated with the department on the Water Sector Survey to benchmark community sentiment.
OM73	High-priority cases assigned to an investigator within 15 working days of receipt = 90%	90%	2021–22: 74% 2022–23: 75% 2023-24: 76%	As NRAR pivoted to intelligence-informed investigations, bulk creation of compliance cases being detected through intelligence and data analytics occasionally led to public reports being triaged and assigned outside the performance measure timeframe. NRAR has invested in a more detailed triage process to better assess whether matters require investigative work. As new processes have stabilised, performance has continued to improve during 2023.
OM73	Incoming public reports assessed and prioritised	90%	2021–22: 67% 2022–23: 71%	Performance indicator exceeded in FY2023-24.

Measure number	Output measure / performance indicator	Target	Performance	Commentary
	within 5 working days of receipt = 90%		2023-24: 96%	
OM73	Water licence holders are audited and/or inspected each year. Output = 1,722 per year	1722	2021–22: 3112 2022–23: 4431 2023-24: 4771	Performance has greatly exceeded the target on this measure as NRAR has pivoted to more proactive education campaigns and intelligence-led inspection programs in response to water user preference and data about levels of understanding about what was required to voluntarily comply.
OM73	Public informants will be contacted (by letter or a telephone call) within 15 working days of lodging an alleged breach with NRAR = 90%	90%	2021–22: 100% 2022–23: 100% 2023-24: 100%	All informants are contacted with reference details on lodging a report of suspicious activity with NRAR.
OM77	Number of customer enquiries received.	Forecast: 6,981 calls per year 14,259 emails per year	2021-22: 4238 Customer Enquiries 2022-23: 1537 tickets, 1080 calls	The transfer of the water consent transactions function from NRAR to the department in 2022 has impacted the number of enquiries received by NRAR. The development of online resources and tools has also supported self-service answers for licensees.
OM77	Emails responded to within 24 hours = 90%	90%	2021-22: 100% 2022-23: 100%	Performance indicator exceeded in FY2023-24.

NRAR faced significant challenges during the current price period, which occasionally impacted performance, including:

- COVID-19 pandemic – NRAR, as primarily an on-ground, operational organisation, had to pivot its normal business model due to travel restrictions during COVID-19. NRAR developed remote monitoring, audit and enforcement capabilities where possible. This included the 'Eyes in the Sky' program, which used satellite imagery to detect possible illegal water take
- drought – the drought from 2017 to early 2021 led to increased unlawful water behaviour and heightened public scrutiny of water user actions. Investigations stemming from this period can take several years to complete, resulting in ongoing investigations during the current price period
- floods – floods in 2022 restricted NRAR's access to farms and affected water users' ability to install, maintain and operate meters in flood-affected areas. NRAR adjusted its compliance approach, exercising discretion in enforcement actions for non-compliance where appropriate

during the floods, while undertaking investigation and enforcement actions where floods may have been used as cover for illegal activities. Resources were also redirected to support emergency services and local government responses, impacting planned compliance activities

- organisational restructure – NRAR restructured its services in 2022 to align its resources with its strategy to strongly enforce the law for serious non-compliances, to focus compliance campaigns on high risk activities identified through intelligence and data analytics, to invest in educating, enabling and encouraging willing water users to voluntarily comply, and to champion improvements to the water management framework to support effective and efficient compliance and enforcement of water rules. Performance was temporarily affected by the restructuring process in late 2022 and early 2023. NRAR has transitioned through the typical forming, storming and norming stages[67] following this restructure and is now consistently performing
- implementation of new rules – NRAR assumed new functions during the current price period, including the implementation of the government's non-urban meter reforms and floodplain harvesting licensing. This required resource adjustments and the development of staff capabilities to meet the new requirements.

[67] Tuckman, Bruce W. (1965) http://dennislearningcenter.osu.edu/references/GROUP%20DEV%20ARTICLE.doc.

Next regulatory period

Why our forecast efficient expenditure will be higher or lower than in the current regulatory period

NRAR's forecast costs to deliver WAMC compliance management services for the 2025–2030 period are an average of $33.5 million a year. These forecast costs compare with NRAR's FY24 expenditure of $31.5 million.

The forecast expenditure consists of:

- $18.5 million per annum as per the (CPI adjusted) 2021 IPART determination for compliance services
- $7.5 million per annum into education and outreach services, as previously explained
- $4.5 million per annum for additional compliance activity required by the metering framework, as previously explained
- $2.5 million per annum as a consequence of the Crown Solicitor's Office cost transfer to NRAR and additional demand for legal services, as previously explained
- $3.7 million ICT costs averaged across 5 years of the determination period, as previously explained.

Importantly, NRAR's forecast costs do not include:

- costs that are not appropriate to be recovered from WAMC customers under the 'impactor pays' principle, including compliance costs associated with controlled activity approvals and unlicensed activity (as set out in Table 53)
- compliance revenue – NRAR's business case excludes $1.5 million per annum that is forecast to be recovered from regulatory actions under the Water Management Act, such as s 60G charges for unlawful water use, cost recovery included in Enforceable Undertakings, and costs and moieties awarded to NRAR by the courts
- labour vacancy rates – NRAR has projected that it will continue to operate with an 8% staff vacancy rate due to turnover and recruitment timeframes, in line with its historical vacancy rate. This 8% vacancy rate will not be charged to water users
- duplication within departmental overhead charges – NRAR has established independent legal, financial and project management services, and these costs have been excluded from the department overheads charge to NRAR. This results in a reduction of overhead charges in this business case by 1.5% of NRAR's total annual operating budget.

NRAR commits to a 3% annual efficiency over the price period, effective from the second year of the determination period, consistent with our statutory objective in the NRAR Act to be an efficient (and effective) regulator. The cumulative cost saving from this efficiency is $10.33 million over the price period to 2030, with the saving for each year from FY26 shown in Table 56.

Table 56: NRAR compounded 3% efficiency dividend in the determination period

Financial year	2025–26	2026–27	2027–28	2028–29	2029–30
Labour related expenditure	$36,214,032	$35,066,501	$ 34,006,616	$32,141,337	$31,166,195
Compounded 3% per annum efficiency applied to labour-related expenditure		$1,084,531	$2,144,416	$3,148,763	$4,123,906

This efficiency commitment exceeds the public sector efficiency standard. The efficiencies will largely be driven by the investment into enabling services such as intelligence and data analytics, ICT investment, staff capability, continuous improvement of our process and procedure through our QMS and seeking changes to the regulatory framework.

Cost components

NRAR's bottom-up determination of the WAMC component of the revenue requirement is shown in Table 57.

Table 57: High level summary of NRAR cost components (FY25)

Cost component	Average financial impact ($)
Labour (salaries + on-costs)	$26,778,283.24
Labour-driven operating expenditure (travel, accommodation)	$4,811,080.60
Departmental overheads (HR, ICT, etc.)	$4,008,572.54
Other expenditures (Legal, CIRaM upgrade, Crown Solicitor's Office cost transfer, the department legal staff supporting NRAR)	$6,106,981.55
Average annual cost reduction of the 3% p.a. efficiency commitment over the 5-year price period	$2,704,166.06
Less Compliance revenues	$1,500,000.00
Less Vacancy rate (8%)	$2,951,506.99
Treasury announced wage increase	$159,583.00
Total	$34,708,827.88

NRAR's Efficient costs

This business case presents the true costs of delivering an efficient and effective compliance management service. NRAR's efficiency case is founded on the fact that:

- we have a statutory duty under the NRAR Act to pursue efficiency, which we systemically do as part of our approach to business

- we commit in this business case to a 3% per annum efficiency and commensurate cost reductions over the price period as shown in Table 56
- our modelling indicates NRAR's forecast cost of $33.5 million per annum is well below the optimal point of compliance expenditure where there is marginal benefit in increased compliance rates.

These reasons are described in more detail below.

NRAR Act objective for efficiency

NRAR has a statutory objective under s 10 of the NRAR Act to, *inter alia*, be an efficient regulator. NRAR actively pursues efficiency in all its individual activities and specifically through:

- use of education, engagement, outreach and communications as the most cost-efficient means of driving compliance and having the most effective reach, noting that:
  - an outreach interaction costs about 10% of an investigation and enforcement action
  - enforcement for serious and deliberate non-compliance will always remain a cornerstone of NRAR's work
- design of programs to leverage external resources to increase NRAR's reach with greater efficiency, such as the education programs NRAR is running with TAFE and Local Land Services
- use of intelligence, spatial and data analytics and technologies to undertake desktop assessments across significant numbers of licences and properties more efficiently than would be achieved with on-ground officers to ensure our programs target the highest compliance risks, and 'boots on the ground' are deployed to the right locations, as shown by multiple case studies presented in this business case
- continuous improvement through orderly review of our processes and practices in accordance with our ISO 9001 accredited QMS, and where some assurance activities focus on potential efficiency gains
- providing feedback to the department and WaterNSW about the effectiveness and efficiency of the water management framework on the ground, and championing improvements to this framework where it would better support compliance and enforcement. For example, for tranche 1 (T1) of the non-urban metering reforms, NRAR estimates that if data in the water licensing system had supported desktop compliance, NRAR could have undertaken the T1 compliance program for less than 40% of the actual cost. Since the T1 compliance campaign, the NRAR Board initiated the development of a data remediation plan with WaterNSW resulting in some of the proposed investment in the ICT roadmap by WAMC in the pricing submission with efficiencies captured in the ICT roadmap in section 4.2 of the Price Proposal document.
- investment into staff capabilities, as capable staff are also more efficient and effective, as research has shown, for example, by the International Labour Office (2023), which estimates that a 1% per cent increase in training days delivers a 3% increase in productivity[68]

[68] International Labour Office. 2011. A Skilled Workforce for Strong, Sustainable and Balanced Growth: A G20 Training Strategy.

- investment into ICT to better automate and expedite case management ICT functions, with projected long-run cost savings of up to $1 million per annum, or a staffing efficiency of 5 FTE from FY2028. These savings will be derived through the automation of some currently manual tasks and improvements in information cataloguing that will reduce the time required to retrieve data. The savings have been accounted for in this business case from FY2028.

Importantly, while NRAR strives for efficiency in all its activities, it is also prudent and necessary for NRAR to fulfil its other NRAR Act objectives of being an effective, accountable and transparent regulator that ensures community confidence (and water user social licence) in water management.

Efficiency Target

As outlined in section 1.1.3 of the WAMC Efficiency Strategy (Attachment H), NRAR is committed to a 3% annual efficiency target across its entire business case.

By the final year of the next price period, the cumulative impact of this efficiency target is projected to result in a cost reduction of more than $4 million (equivalent to approximately 19 FTE). These efficiencies are expected to be achieved through enabling functions such as Capability Development, Systems and Assurance, and championing improvements to policy settings. These enabling functions include 18 FTE. As such, a 3% per annum efficiency will mean that the savings generated by these functions would exceed their operating costs, representing a net positive investment in these functions in future years.

A note on the assumed efficiencies in the 2021 IPART determination report

IPART identified cost inefficiencies in NRAR's 2021 submission, namely 'historical ineffective compliance management' and government 'delays in undertaking metering reform'[69] and stated that 'these costs should not be paid for by users through its water management prices'[70].

These assumed efficiencies from meter reform and associated cost reduction in compliance service costs are not realistic, as:

- NRAR's intelligence and the NUMR review 2024 suggests that non-urban meter reform is unlikely to be completed until late in the next price period, and that NRAR will incur additional business-as-usual costs as outlined in this business case
- NRAR's experience indicates that the efficiencies expected by telemetry are optimistic because not all water users are required to install telemetry, and telemetry and the data acquisition system are not delivering evidence-grade information to support desktop compliance, meaning that NRAR still needs to ground truth meter reads when it takes enforcement action.

In any case, 70% of the community believe water theft is continuing, which requires continued high NRAR visibility and presence to provide community confidence.

[69] Review of prices for the Water Administration Ministerial Corporation from 1 October 2021 to 30 June 2025 43
[70] Review of prices for the Water Administration Ministerial Corporation from 1 October 2021 to 30 June 2025 38

Modelling the efficiency of NRAR's forecast costs

NRAR has worked with leading water market economists and behavioural scientists over the past 4 years to develop a sophisticated water compliance behaviour change model for NSW. While this model is designed to help NRAR with campaign planning, acting as a 'flight simulator', it also has other applications such as guiding the optimal application and sequencing of NRAR functions to address compliance scenarios, testing the efficacy of altering the penalty amounts to inform recommendations for legislative change, and to guide whether NRAR forecast costs are below the optimal point of expenditure at which the marginal increase in compliance cost equals or is less than the marginal increase in compliance rates.

The model is leading edge, grounded in evidence from social behavioural research, climate conditions and NRAR costs. The model can estimate outcomes across a wide spectrum of conditions and water user and regulator behaviours by applying the different compliance functions of reactive investigation and enforcement, proactive compliance campaigns and outreach services. The model considers more than 80 interacting factors that simulate water user compliance behaviours across various scenarios.

NRAR has used the compliance behaviour change model to determine the optimal point of compliance cost represented by the point at which there is reduced change in compliance rate for the next compliance cost incurred.

This point was determined for NSW by extrapolating a model run of 1,000 water user samples for the Macquarie–Bogan catchment to the 39,000 water access licences across NSW. The model run has assumed NRAR uses a combination of investigation and proactive and outreach compliance services. The outputs from this model run are presented in Figure 41. The optimal compliance cost for the 1,000 water users in the Macquarie–Bogan model run is around $1.96 million per annum, at which point there is a diminishing change in the compliance rate from further compliance effort.

Assuming water user behaviour is reasonably similar between valleys, extending this model output to 39,000 water access licence holders across NSW suggests that the optimal compliance cost point for NSW is in the order of $75 million per annum. NRAR's forecast costs of $33.5 million per annum are clearly modest and well below this optimal expenditure level.

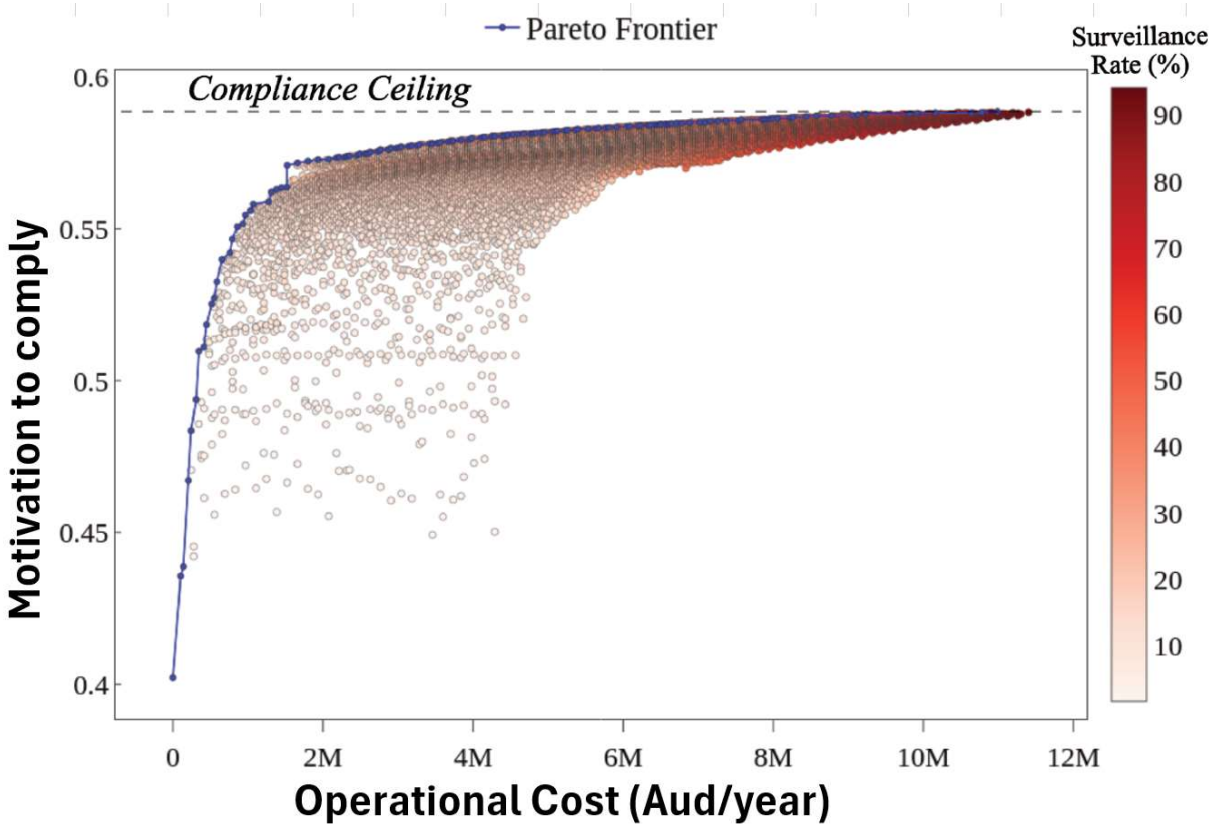

Figure 41: Compliance rates versus operational costs demonstrating compliance ceiling (for one valley)

NRAR costs also represent a good business proposition

To demonstrate the value of investment into compliance, NRAR requested compliance behaviour change modelling of the difference in water theft volumes between NRAR's forecast costs set out in this business case ($33.5 million per annum), and at the funding levels passed through to water users by the 2021 IPART determination ($6.7 million per annum).

This modelling suggests NRAR funding at $33.5 million per year prevents an additional 200 GL per annum of water theft across NSW, relative to water theft expected at $6.7 million per annum of compliance effort that was passed through to water users in the 2021 IPART determination. The cost difference is $26.7 million per annum.

El Niño events in eastern Australia drive conditions of higher temperature and lower rainfall[71], which in turn causes increased demand for agricultural water and higher prices. El Niño events occur once every 3 to 7 years[72].

[71] What is El Niño and what might it mean for Australia? (bom.gov.au)

[72] The ARC Centre of Excellence for Climate Extremes | What is El Niño's impact on Australia's weather and climate? - The ARC Centre of Excellence for Climate Extremes

At a conservative assumed tradeable value of $99/ML in non-El Niño years, the avoided water theft is valued at $19.8 million, and at an assumed (modest) tradeable value of $800/ML in El Niño years, the avoided water theft is valued at $160 million. The $26.7 million per year cost difference between the 2021 determination and our forecast costs over the next price path represents a net positive investment of $91 million over a (conservative) 7-year El Niño cycle, or an average annual net benefit of $13 million per annum.

Clearly, NRAR's forecast costs are below the optimal compliance costs as modelled by NRAR and represent a sensible investment when considered in the context of the value of avoided water theft. This will increasingly be so as the value of water increases in coming years with increased industrial competition for water, higher climate variability, cyclical drought and extreme weather events.

Benchmarking compliance costs

While benchmarking across states offers valuable insights, it should not be the sole basis for evaluating NSW's compliance management revenue needs because of the following issues:

- compliance maturity – NSW's distinct history in water management, highlighted by reports by Matthews, the Ombudsman and ICAC, indicates a different level of regulatory maturity to many other jurisdictions
- the Regional Wellbeing Survey shows stark differences in NSW, such as that only 40% of NSW water users understand water management regulations, compared to the national average of 55%, showing we have a unique challenge in NSW with the complexity of the law
- legislative environment – NSW's regulatory framework presents unique challenges impacting enforcement and compliance efforts, even when compared to the national average.[73]

As the NSW ICAC 2022 report asserts:

> *It makes sense to measure how a particular regulator compares with established benchmarks or averages and determine whether any outlying data requires further examination. However, this data may not speak for itself, and there may be valid reasons for being above or below average.* [74]

NRAR maintains that the benchmarking with Victorian water regulation and compliance undertaken by IPART's consultants for the 2021 price determination was flawed. Specifically, the analysis:

- did not properly account for differences in industry mix, compliance culture and regulatory frameworks
- found that Victoria concentrated its compliance effort on metered take and not to invest in comprehensive compliance across non-metered and unlicensed sites[75], and therefore did not provide a suitable benchmark for comparing the costs across the comprehensive compliance approach needed in NSW

[73] UTS Survey collected during the Annual Regional Wellbeing Survey (Nov2021 – Feb 2022)
[74] ICAC 2022 MANAGING CORRUPTION RISKS IN REGULATORY WORK
[75] Suspected unlicensed dams multiplying across stressed river system reveal holes in Victoria's water compliance - ABC News

- undervalued NRAR's statutory obligations, such as NRAR's need to invest in achieving its NRAR Act objectives, such as being transparent and accountable and maintaining community confidence in water law enforcement.

Despite this, NRAR considers benchmarking useful when like-for-like comparisons can be made. NRAR has, therefore, worked with the Inspector-General of Water Compliance and other Murray–Darling Basin (MDB) jurisdictions to develop a compliance performance benchmarking framework. This compliance performance benchmarking framework is still being finalised. However, preliminary data from this framework on the number of authorised officers operating in each MDB jurisdiction indicates that NRAR is modestly resourced relative to most other MDB jurisdictions. This is especially the case when it is considered NSW has the largest area of the MDB, as well as the largest share of water take (about 50% of the MDB total).

Comparison with other NSW regulators

NRAR regulates approximately 39,000 water access licences and 169,000 approved works under the *Water Management Act 2000*, operating with 181 FTE and forecast costs of $33.5 million per annum, as presented in this business case. These are comparable costs to other regulatory bodies in NSW. For example:

- the Resource Regulator has around 180 staff and a similar operating revenue of $35.5 million per annum[76], regulates the 40 operating coal mines[77], 58 large metalliferous mines and large quarries and 6,000 small opal, gem or quarry operations
- the NSW Environment Protection Authority (EPA) employs around 750 staff and regulates 4,600 environment protection licences under Schedule 1 of the *Protection of the Environment Operations Act 1997*. The EPA's staffing includes:[78]
  - legal, corporate, and CEO: 88 staff
  - regulatory practice and environmental solutions: 118 staff
  - regulatory operations: 317 staff
  - education, engagement and programs: 136 staff

The challenge with determining cost levels based on customer expectations

We have listened and engaged with water users, as expected under IPART's guidelines for pricing submissions, and responded to their expressed needs where relevant. However, it is important that NRAR remains separate from the regulated community to make compliance decisions free from influence and to preserve the independence set out in the NRAR Act, which also serves the interests of restoring social licence for water users.

As noted by the NSW ICAC:

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[76] https://www.resourcesregulator.nsw.gov.au/sites/default/files/2023-12/RR-annual-report-2022-23.pdf
[77] https://www.coalservices.com.au/statistics/nsw-black-coal-producers-directory/
[78] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/whoweare/21p3355-epa-annual-report-2020-21.pdf

> *It does not make sense to conceptualise regulated parties or complainants as 'customers'. Regulators are often required to make unwelcome decisions which do not necessarily equate to positive customer feedback. Characterising regulated parties as 'customers' misconstrues the relationship they should have with a regulator.* [79]

NRAR therefore requests that IPART considers the uniqueness of this situation when considering this business case to fund the independent water regulator in NSW, to ensure that NRAR maintains its independence and perceived independence by ensuring adequate funding to fulfil its statutory remit.

[79] ICAC 2022 MANAGING CORRUPTION RISKS IN REGULATORY WORK

What we will deliver in the next regulatory period

NRAR is seeking to maintain its current levels of compliance activity in the next price period.

Current levels of activity will enable NRAR to continue delivering strong enforcement for serious non-compliance, run intelligence-informed compliance campaigns for annual priorities, provide face-to-face on-ground outreach and extension services to support voluntary compliance and monitor base compliance rates, and offer feedback to policymakers on improvements for more efficient and effective compliance and enforcement. We will also continue to pursue our published enduring priorities for accurate measurement of water take, matters that cause significant harm to other water users, the environment or the integrity of the water management framework, unapproved works on floodplains, and ensuring our programs value the intrinsic connection of Aboriginal peoples to land and water.

NRAR will remain adaptable and flexibly allocate resources based on the circumstances of the day, new annual priorities throughout the course of the price period and emerging community expectations. NRAR will commence the next price period with 181 FTE until 2028–29 when FTE will reduce to 176 FTE because of efficiencies realised from ICT investment. Note also that NRAR is committed to a total 3% efficiency gain per annum over the next price period, with our projected costs shown in **Error! Reference source not found.**.

Measuring NRAR's performance over the next price period

NRAR has consulted widely with stakeholders throughout the current price period, including seeking input from community forums about how compliance management outcomes should be measured and reported to IPART, water users and the public.

The community forums agreed that NRAR's performance for the compliance management service could be measured against the following 3 outcomes:

- efficiency and effectiveness as per NRAR's statutory objectives – s 10 of the NRAR Act
- water user understanding of the rules, as this is an indicator of reducing barriers to more cost effective, voluntarily compliance
- public confidence in the compliance and enforcement activities of NRAR, as required by s 10 of the NRAR Act objectives and as a means of supporting the social licence of water users.

Based on this feedback, NRAR propose following performance measures for W08-03 compliance management monopoly services in Table 58 below. NRAR will report against these performance measure in the next determination period as part of WAMC outcome reporting.

Table 58: Proposed Outcomes Measures for W08-03 Compliance Management

WAMC outcome & objective	Performance measure	Alignment with 3C principles
Outcome 4: Value for money **Objective 1: An efficient and effective compliance and enforcement program.**	Annual change in labour expenditure on compliance and enforcement services from 2025-26 ($)	Cost – Commitment to efficiency as expected by IPART

WAMC outcome & objective	Performance measure	Alignment with 3C principles
Outcome 3: Confidence in water resource management **Objective 2: Increasing community confidence in the enforcement of water laws**	Customers reporting greater confidence that NSW water rules and regulations are being enforced (%)	Customers – Delivering services that assist water users
Outcome 2: Sustainable and effective water resource management **Objective 3: Increasing water user understanding of water laws and how to comply**	Customers reporting that it is easy to understand the rules in their licence (%)	Credibility – Continual improvement Credibility – Transparency and accountability in reporting

Conclusion and case summary

This business case demonstrates the prudency and efficiency of NRAR's compliance management services against IPART's guidelines of credibility, cost and customer.

Cost

NRAR's costs to be recovered from water users through IPART's 2025 price determination average $33.5 million annually over the price period from 2025 to 2030. This business case presents those NRAR costs caused by water users, consistent with 'impactor pays' principles.

NRAR's costs are driven by statutory objectives and remit under the NRAR Act 2017, the design of the Water Management Act, government policy and commitments, and by NRAR's strong commitment to respond to water user needs and community expectations.

The IPART 2021 determination report agreed that NRAR's costs made up of compliance and customer management were at $ 16.3 million per annum. NRAR's forecast costs outlined in this submission have increased relative to the 2021 determination primarily because:

- we have listened and responded to water users who have indicated a preference for face-to-face contact with NRAR to help them navigate and comply with a complex water management framework by investing in additional frontline education and outreach services
- increased legal costs caused by the cessation of the Crown Solicitor's Office financial support for NRAR prosecutions
- additional compliance needs caused by meter reforms and floodplain harvesting licensing
- a need to invest in ICT upgrades to mitigate continuity and cyber security risks.

Notwithstanding, NRAR forecast costs are modest, given:

- NRAR's annual costs are less than 0.1% of the estimated NSW water entitlement value of $41 billion
- the vast landscape of NSW, and the remote and regional location of our work
- the sheer number of licences and approvals
- resourcing for comparable NSW regulators such as NSW EPA and NSW Resource Regulator.

Separate to IPART processes, NRAR also has a statutory objective under the NRAR Act to be efficient, and we vigorously pursue this objective through:

- investment in the most cost-efficient programs, such as driving voluntary compliance
- 'Eyes in the Sky' to proactively screen for, and detect, large volumes of potentially unlawful unmetered water take across NSW
- pursuit of programs that leverage assistance and support from stakeholders to help water users' voluntary compliance
- investment in ICT improvements

- internal focus on QMS process reviews, staff capability enhancement, intelligence and data that ensures we focus on and deploy staff to the highest risk compliance matters
- providing feedback to the department and WaterNSW and championing improvements to the regulatory framework to improve the framework for more effective and efficient compliance and enforcement in the future.

NRAR's modelling confirms that NRAR's forecast costs are well below the marginal cost of compliance, and therefore are economically efficient.

Credibility

Since our commencement in 2018, we have delivered strong enforcement that has provided a strong deterrence to non-compliance and helped restore public confidence and water user social licence, although the community expects more to be done.

We are now an established, maturing regulator that operates effectively and efficiently to:

- provide fair access to water users to available water, supporting an estimated $2.9 billion to $4.5 billion per annum production value from irrigated agriculture value
- support flow on effects to regional economies across NSW
- protect water users' entitlements across NSW worth an estimated $41 billion
- help restore and support water users' social licence to extract water
- protect the community's water-dependent environments across NSW from unlawful water take
- maintain public confidence in water law enforcement and in the broader water management framework

NRAR now understands its mandate well, has a clear direction established by statutory objectives set out in the NRAR Act, and our strategic plan, and a refreshed internal structure to deliver:

- reactive enforcement to provide deterrence, and to ensure fairness for the compliant
- proactive campaigns, education, support and encouragement to the vast majority of water users who seek to voluntarily comply with water laws
- programs that are informed and prioritised by intelligence and data analytics
- continuous improvement through QMS, staff capability, championing improvements to the water management framework and constant search for cost efficiencies in our operations to enable greater reach and effectiveness for the same costs.

Customer

NRAR has consistently and genuinely listened to the opinions and preferences of water users and the community, reinforcing its commitment to stakeholder engagement and maintaining community confidence.

NRAR has heard through a Community Insights Voice survey that:

- 70% of the NSW community hold the belief that illegal water take is still occurring

- 84% believe more should be done to reduce water theft
- WAMC community forums will be confident in the framework when compliance rates are at 88% (compared to NRAR baseline monitoring in the MDB showing compliance rates at 73%).

Clearly, more needs to be done.

NRAR has tailored its strategies to respond in part to this customer feedback. NRAR's business case proposes the continuation of its strong enforcement program, supported by more investment into:

- education and extension activities to help voluntary compliance, knowing from Community Insights 2023 research and CAG feedback that face-to-face contact with NRAR was preferred and led to improved perception and satisfaction with NRAR performance, and that this is a more cost-effective strategy than reactive enforcement alone
- technology and monitoring, as these are favoured over investigation and enforcement, and support more efficient detection of breaches and deployment of on-ground NRAR staff
- staff capability and knowledge to support meaningful on-farm interactions.

W09-01 Water consents transactions

Description

Water consent transactions are fee-for-service activities that result in the issue, granting or amendment of water access licences and approvals under the NSW *Water Management Act 2000* (WM Act) and Part 5 licences under the *Water Act 1912*. The NSW Department of Climate Change, Energy, the Environment and Water (the department) Licensing & Approvals (L&A) team and WaterNSW share the responsibility for granting and managing water licences and approvals in NSW.

The department also undertakes application-specific groundwater impact assessments to make recommendations on the acceptability of determinations made by licensing authorities (WaterNSW and the department Licensing & Approvals).

Controlled activity approvals are issued and managed exclusively by the department. Application transactions for the controlled activity provisions of the NSW WM Act and the Regulation have not been included in previous WAMC determinations. The issuing of controlled activity applications is critical in ensuring the minister's obligations under the NSW WM Act. Controlled activity approvals ensure the protection and restoration of rivers in accordance with the NSW WM Act objects and principles.

Historically, controlled activity approval transaction fees were set by the department, based on the transaction's cost of delivery. However, it is considered appropriate that transaction fees for controlled activities are now included in the WAMC determination for consistency and transparency.

Expenditure

Table 59: Current period operating expenditure ($000, 2024-25)

W09-01	2021-22	2022-23	2023-24	2024-25[a]
Allowed expenditure	1,340	1,340	1,307	1,340
Actual expenditure	4,275	9,972	10,943	10,943

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

Table 60: Forecast revenue 2026-30 ($000, 2024-25)

W09-01	2025-26	2026-27	2027-28	2028-29	2029-30
Forecast revenue [a]	4,935	4,935	4,935	4,935	4,935

a: These values are revenue numbers, which is an output of prices and forecast demand. Unlike the other costs we are proposing prices to IPART for consent transactions.

Current period performance

Historically, the cost of providing consent transactions has not been fully assessed and the fees for services have been an estimation only. These estimations fell well short of the true cost of providing these services. The teams have undertaken a thorough activity-based assessment of the resources required to provide all services provided, and the proposed fees now represent the amount required for full cost recovery.

This activity met **67% (4/6**) of its output measures and performance indicators for this period, as of the financial year 2023–24. All output measures and performance indicators are expected to be met by June 2025. See the current performance against output measures and performance indicators in Table 61 below.

Table 61: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM74- Water access licence applications Forecast = 16 per year **Met (32 applications received 23/24)**	Water Access Licence – applications determined within 45 days = 80% **Not met (50% - 13 of 26)**	The performance indicators have not always been met due to the complexity of applications and the assessment required which may include seeking additional specialist advice. The department is committed to implementing continuous improvement across these transaction types. In addition, the department is committed to ensuring efficient resourcing is allocated to this stream of responsibility.
OM75 – Water supply works and use Approvals – applications Forecast = NRAR: 131 per year **Met (167 applications received 23/24)**	Works and Use Approvals – applications determined within 65 days = 80% **Not met (58% - 74 of 127)**	
OM76 - Approval extensions Forecast = NRAR: 269 per year **Met (361 applications received 23/24)**	Approvals extensions – applications determined within 25 days = 80% **Met (92% - 256 of 278)**	92% of approval extension applications determined within 25 days. Approval extension numbers received fluctuate from year to year. Future forecasting will be undertaken with improved efficiencies developed within the reporting framework.

To manage customers' expectations, the following standard assessment timeframes are published on the department website:

- controlled activity applications (80 working days)
- integrated development application (IDAS) (40 calendar days)
- water supply work and use approvals (80 working days)
- water access licences (WALs) (45 working days)
- planning proposals, rezonings, amendments to Local Environment Plans or Development Control Plan, Review of Environmental Factors (40 working days).

The L&A team has struggled to meet these timeframes due to a shortage of officers with adequate skills and training to undertake the assessments or determinations, which is critically linked to application fees being well less than cost recovery. The time taken to complete assessments has also been impacted by the volume of applications received and the backlog of assessments and critical licensing administration tasks.

The current period also started during a period of severe drought. Periods of drought result in a significant increase in applications for water access licences, water supply work approvals and groundwater consent transactions. The increase continued following the drought due to local water utilities seeking increased entitlement volumes for urban and town water supply. There was a corresponding increase in the number of applications received for water supply work and water use approvals. However, since 2021, the backlog of groundwater assessments has been cleared due to increased staff numbers (inclusive of consultants funded through various funding sources), more favourable climatic conditions and fewer groundwater bore applications or groundwater dealings received.

WaterNSW and the department L&A team (moved from NRAR to the department in 2022) have undertaken ongoing process improvements and efficiencies in water transactions since 2018. Process improvements implemented since the last pricing submission include:

- implementation of a Service Level Agreement between the department Groundwater Management and Science, WaterNSW and the L&A team. This agreement sets out referral protocols, expected delivery timeframes, approach to prioritising work and referral and response rules for water consent transaction activities
- triage processes that reduce the need for low-risk applications to be referred. The use of triage processes is an efficient means of ensuring only higher-risk applications have a thorough technical examination and attract an additional assessment fee. It is estimated that the triaging process has reduced the number of applications referred to the department Groundwater Science and Management by approximately 15%. Risk-based triages have been established for:
  - basic landholder rights bore applications
  - temporary trades (still being finalised and implemented)
  - water supply works approval for dewatering (still being finalised and implemented)
  - permanent dealings
  - bore approvals and design

- revision of internal templates, forms and procedures for technical staff to increase efficiency and ensure consistency, enforceability, and customer experience, understanding and readability
- development and implementation of the integrated development and controlled activity approval modules of the NSW Planning Portal in 2021:
  - online portal for customers to lodge applications
  - online payments
  - online applications for new, amended, extension approvals
  - online application for the release of security bonds
  - system automated searching for integrated development related matters
  - automated issuing of low risk-controlled activity approvals for integrated development matters assessed and issued as low-risk, removing the need for any further assessment at controlled activity approval application stage for low-risk matters
- third party review of the technical process for impact assessment, including the modelling software used for that purpose – the method was supported by the third-party reviewers
- a range of information products delivered by both agencies such as website updates, and video animations to document and communicate processes
- establishment of a process for resolution of complaints and provision of information to Land and Environment Court cases
- creation of the L&A Central Team to focus on improving the efficiency of receipt, registering and assessment for low-risk applications
- establishment of financial processes between referring agencies and the Groundwater Science and Management team to utilise collected fees to process applications
- creation of dashboards for better oversight of workload and reporting capacity in the Water Assessment Management System (WAMS) for individual staff and management. WAMS is a work request workflow program that supports the administration, tracking, resourcing and reporting of work requests.

Process improvements made within the current IPART determination period have provided the following efficiencies:

- assessment times on a rolling average have decreased from more than 100 calendar days (up to 150) to consistently less than 70 calendar days over the last full quarter of 2023
- triage processes have resulted in a reduction of referred applications, reducing applications times and fees:
  - it is estimated that 80% of basic landholder rights applications have been triaged as low-risk and did not require referral to the department for technical assessment
  - it is estimated that at least 50% of temporary trades (temporary assignment) will no longer need to be referred to the department for groundwater technical assessment, as they are considered low risk
  - it is estimated that 10% of permanent dealing- and approval-type applications did not require referral to the department for technical assessment

- time savings on specific applications, identification of efficient processes and prioritisation through a coordinated approach between agencies during peak workload
- reduction in data processing time through development of data tools, for example, a tool developed to enable the ability to prepare pre-templated hydrographs for reports.

Proposed services and costs for the 2025 determination period

It is proposed to adjust several performance measures to better reflect improvements, efficiency measures and customer expectations. We also propose an increase to the number of performance measures for the 2026–30 period for water access licences and water supply work approvals. The current performance measures do not consider that:

- the time taken to assess and determine applications for zero share water access licences (WALs) is relatively short, compared to other water access licence applications, as the process is administrative but requires attention to detail, as mistakes can significantly increase timeframes
- the time taken to assess and determine applications for controlled allocation order water access licences (WALs) is longer, as the applications need to be referred to Native Title Services for a period of 28 calendar days from the date that the notice is received. Again, attention to detail is essential
- the time taken to assess and determine applications for specific purpose access licences is significantly greater, as the applications need to be referred to specialist teams within the department
- the time taken to assess and determine applications for water supply work and water use approvals and flood work approvals is significantly greater than for applications for zero share and controlled allocation order water access licences
- applications for approvals for production bores and flood works need to be referred to the department for technical assessment. The current assessment timeframe for the department Science is 45 working days.

It is proposed to change the performance measures based on subcategories of water access licence application types to reflect the above information and efficiencies that will be implemented during the next period. For example, the performance measure for zero share WAL applications changed from 45 to 40 working days, and the performance indicator for controlled allocation order WAL applications changed from 45 to 40 working days, which is a significant reduction in time. While these reductions are modest, all assessment timeframes reflect the difficulty in balancing a high volume of variable queries being serviced by skilled analysts and are ample to accommodate this.

Proposed efficiencies

The department is implementing improvements to the water licensing and approval ecosystem through the Water Licensing Improvement Program (WLIP). The NSW Government has committed $14.8 million over 2 years (2022–24) to modernise and improve water licensing and approvals processes through investment in policy, process and system enhancements. These efficiencies are included in the WAMC Efficiency Strategy.

Within the current pricing period, the department is investing in enhancements that will improve the efficiency of costs associated with water consent transactions. Enhancements include the digitalisation of processes and systems through investment in WaterNSW's Water Marketing System (WMS) to extend its use for water supply work and water use approvals and amendments.

The investment will result in the following expected efficiency outcomes:

- reduction in the number of systems required to manage consent transactions
- reduction in time spent undertaking administrative tasks for 7 transactions
- reduction in customer enquiries relating to water supply work, water use approvals and amendments.

The 2022 business case that established the WLIP estimated the expected administrative savings from enhancements of 20% or $1.13 million (over 10 years). The business case also anticipated savings in customers' administrative costs and time spent navigating and dealing with the current licensing and approvals system.

Delivery of the WMS for Water Supply Work Approvals (WSWAs) has been built into the cost build-up for these consent transactions – this resulted in a 12% efficiency being applied to these transaction types. With further investment through the WAMC Digital Business Improvement Strategies, similar consent transaction efficiencies may be found.

Further ongoing efficiencies will be gained by the Groundwater team from work scheduling and review of all referral triage processes to ensure that low-risk activities are not referred to the team for technical review. This is envisaged to lower costs and improve timeliness.

Several other potential IT system improvements have been identified by the department that can build on improvements being made as part of the Water Licensing Improvement Program. These include:

- automation of checks of distance rules from water sharing plans
  - for applications for test bores and 39A exemptions
  - at water supply work approval pre-application stage, noting the WMS (owned by WaterNSW) is currently not designed to check distance rules at pre-application stage
  - avoid false expectations of local water utilities and avoid refusal of applications following test bore drilling or cessation of 39A exemptions
  - time saving for assessment officers
- automation of WAMS triage procedure
  - the Water Assessment Management System (WAMS), which is used to log work requests for assessment of applications by the department Water hydrogeologists and Surface Water Science teams
  - the Groundwater Science and Management team has developed triage procedures to determine which applications need to be referred by WAMS and which don't require referral
  - it is possible to automate this triage procedure, which will save time for assessment officers and remove the unnecessary referral of applications
- automation of workload selection

  - automation of the task selection across different assessment workstreams to decide on the next important tasks to complete
  - re-examination of achievable timeframes for workload delivery across the current service level agreement
- miscellaneous works portal
  - MW numbers required for works or activities have to account for water take where an approval is not required, e.g. State Significant Development (SSD)
  - SSD includes mining and construction
  - MW numbers are currently generated in the historical Licensing Administration System (LAS), not WLS
  - Portal to grant or refuse requests for MW number based on evidence provided by the Development Approval (DA) holder
  - time saving for assessment officers
  - clear-cut application process for DA holders
- efficiency improvements for the controlled activity approval and integrated development modules of the NSW Planning Portal, including:
  - digitising assessment forms for the integrated development of the general terms of approval
  - integrating the triage tool into the Planning Portal
  - improvements to exporting of key reporting data.

In addition to the work undertaken as part of WLIP, there will be further investment in the recruitment of additional staff, training and development of staff and the ongoing review of current procedures.

Activity drivers

Statutory requirements for activities under the specific legislation for water access licences and approvals, include:

Water Management Act 2000:

- Chapter 3 Water Management Implementation – Part 2 Access Licences.
- Chapter 3 Water Management Implementation – Part 3 Approvals
- Chapter 4 - Part 1
- Chapter 6 – Part 1
- Schedule 1 Irrigation Corporations
- Schedule 2 Major Utilities
- Schedule 3 Water supply authorities

Water Management (General) Regulation 2018.

Water Act 1912:

- Part 5 Artesian wells

Applications for state significant development and infrastructure (SSD/SSI) are assessed and determined under the Environmental Planning and Assessment Act 1979 (EP&A Act). However, the department has significant input to the assessment process for SSD/SSI in relation to the legislative requirements of the Water Management Act 2000.

Water Management Act 2000

- Section 5 Objects
- Section 7 Water management principles
- Chapter 3 Water Management Implementation – Part 2 Access Licences

Statutory requirements for activities under the specific legislation for controlled activity approvals, include:

Water Management Act 2000:

- Chapter 3 Water Management Implementation – Part 3 Approvals

Water Management (General) Regulation 2018:

- Division 1 cl.25 Applications generally
- Division 1 cl.32 Security for fulfilment of obligations under approvals
- Division 7 cl.202 General power to defer or waive payment of service charges or other charges or fees

For the Groundwater team, the following provide a framework for managing trades and new bore applications

- *Water Management Act 2000*
- *Water Sharing Plans*
- *Access Licence Dealings Principles Order 2004*

Activities are also driven by the NSW State Groundwater strategy and the National Water Initiative pricing principles.

W10-01 Customer management

Description

The NSW Department of Climate Change, Energy, the Environment and Water – Water Group – Licensing and Approvals team (the department L&A or the department) and Water NSW share the responsibility for granting and managing water licences and approvals in NSW. The provision of high-quality customer service for enquiries and high-quality advice to applicants results in improved application quality for licences and approvals. Qualitative data has shown that customers who are provided quality pre application advice lodge more complete applications with all required supporting documentation. This then leads to reduced assessment times and greater certainty of issuing an approval or licence. The L&A team also receive enquiries from the general public seeking information and providing feedback on approvals and licences, and water management policy and legislation. Customer enquiries are categorised as either general or complex relating to either controlled activities or water licensing.

These activities entail the provision of:

- All customer liaison activities; including responding to calls to licensing and compliance information lines; and producing communication and education materials such as website content and participation in customer forums.

These activities arise from the complexity of administering the water licensing and management regime and comprise (non-exhaustive list):

- Handling customer licensing queries, such as, what do customers need to apply for
- This can extend to site visits
- Interaction with NRAR to assist with NRAR's compliance activities
- Managing the licensing system through:
    - Processing surrenders and cancellations
    - Uploading discretionary conditions
    - Notification of change in conditions
    - Managing security interests
- Updating customer information (change of address, ownership) for land events
- Conversion of licences from the 1912 Water Act to the WM Act and conversion of licence conditions to account for changes in the WM Act Water Sharing Plans (WSP) such as WSP name changes, zone changes, water source changes and linking the updated WSP to licence holders.

WaterNSW also provides condition re-notification to customers whose licence conditions change following DPIE-W policy decisions. This is essentially a mail-out service which relies on WaterNSW's systems for billing and account management. Whilst partially covered in W08-02, these notifications can generate a high volume of queries if the condition changes are complex, confusing or result in new/additional obligations on approval and WAL holders.

WaterNSW supplies licensing services to all customers, other than all decisions or other actions made in relation to the granting, conditioning, surrender, cancellation, suspension or extension of a water access licence, water use approval or water management work approval or an activity approval in respect of approximately 300 customers and certain activities which are managed by the department. However, WaterNSW still supports these customers with other fee for service transaction services such as dealings (the trading of a Water Access Licence (WAL) or water allocation). WaterNSW provides account management and billing services to all customers.

Expenditure

Table 62: Current period operating expenditure and proposed costs ($000, 2024-25)

W10-01	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Customer management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance - the department	0	0	0	0					
IPART allowance - NRAR	341	341	341	341					
IPART allowance - WNSW	4,294	4,563	4,517	4,306					
IPART allowance	**4,635**	**4,904**	**4,858**	**4,647**					
Actual expenditure - the department	1,382	450	1,029	1,029					
Actual expenditure - NRAR	887	628	0	0					
Actual expenditure - WaterNSW	3,438	1,940	2,246	2,955					
Actual expenditure	**5,707**	**3,018**	**3,275**	**3,985**					
Proposed expenditure - the department					2,244	2,174	2,283	2,251	2,278
Proposed expenditure - NRAR					0	0	0	0	0
Proposed expenditure - WNSW					2,848	2,738	2,766	2,836	2,898
Proposed expenditure					**5,092**	**4,912**	**5,049**	**5,087**	**5,176**

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

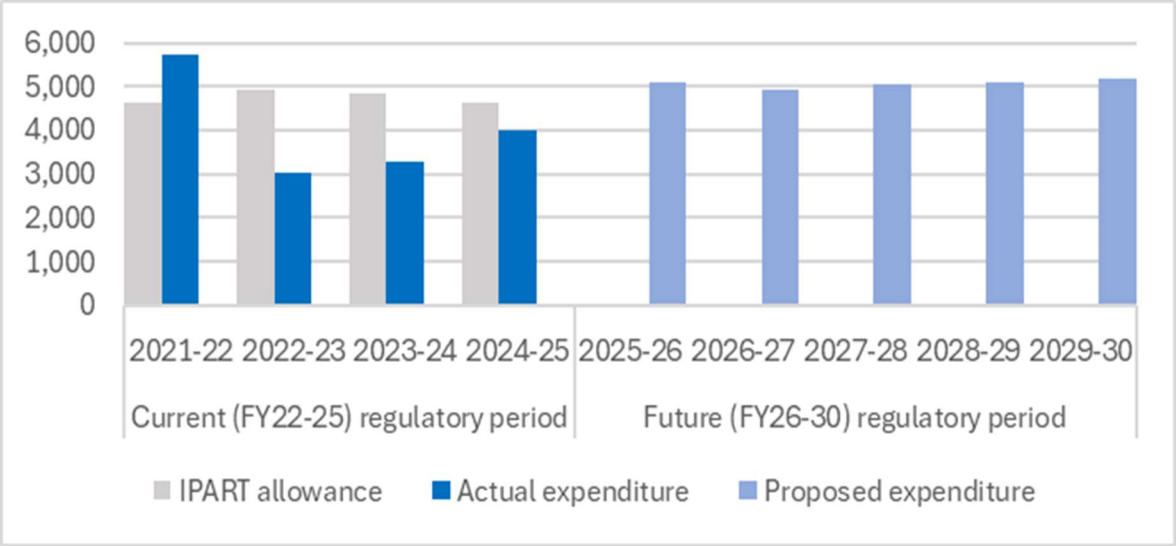

Figure 42: W10-01 Customer management 2026-30 operating expenditure ($000, 2024-25)

Current period performance

Over the current IPART period, and during the transfer of responsibilities for L&A functions from the Natural Resource Access Regulator (NRAR) to the department in April 2022, the subsequent transfer of L&A call centre services to the Water Enquiries team was approved in February 2023. L&A established a central team to register, undertake first call resolution and assign to assessing officers for response to customers. This included a duty officer roster for the Controlled Activity Approval (CAA)/ Integrated Development Assessment (IDA) and Water Licensing team to improve customer service response times.

This activity met **50% (1/2)** of its output measures and performance indicators for this period, as of the financial year 2023–24. The output measures for OM77 will not be met by end of period, but the performance indicators are expected to be met by June 2025. See the current performance against output measures and performance indicators in Table 63 below.

Table 63: Current period performance against output measures and performance indicators

Output Measure 2021-25	Performance Indicator 2021-25	Comment
OM77 - Number of customer enquiries received Forecast = NRAR: 6,981 calls per year and 14,259 emails per year. **Not met** **(Water Ops L&A 2284 Customer interactions, Water Enquiries 832 Phone Calls 296 Emails and Webforms)**	Emails responded to within 24 hours = 90% **Met**	The function of the licensing and approvals team was transferred to the department from NRAR in April 2022. The forecast set by NRAR at the time was based on a drought year, when the number of enquiries from customers is extremely high. This measure will not be met in this period due to the extremely large metric set. The department L&A team continues to receive a large volume of enquiries and is committed to servicing each customer in a timely manner. In 2023–24, all calls were answered by the department's in-house Water Enquiries team. In 2021, a new decision-tree tool was implemented to help customers understand who they should contact about which type of licence or approval. This

Output Measure 2021-25	Performance Indicator 2021-25	Comment
		resulted in significantly fewer phone calls to the enquiry line. The tool is currently under review to simplify language, reduce complexity and shorten the completion time. It is expected that the review will increase customer usage and assist with faster resolution of their enquiry.

To manage customers' expectations, the following standard assessment timeframes are published on the department's website: Assessment timeframes | Water (nsw.gov.au)

- advice enquiries (10 working days or 30 working days for complex matters)

The L&A team has struggled to meet these timeframes due to the:

- under-resourcing of the number of officers required
- shortage of officers with adequate skills and training to undertake the assessment or determination
- volume of applications received
- backlog of assessments

backlog of critical licensing administration tasks

Key outputs or performance outcomes that WaterNSW sought to report on / achieve over the current regulatory period included:

- Output measure (OM78) – Number of complaints received per year (WaterNSW Forecast = 389)
- Performance indicators – Complaints resolved within 28 days = 90%

WaterNSW met expectations against the performance indicator with all enquiries and complaints responded to and resolved in a timely manner.

Proposed services and costs for the 2025 determination period

In alignment with the Water Group Business Plan 3.1, all areas within the Water Group are tasked with managing customer enquiries through the established stakeholder engagement system, Borealis. Borealis will serve as the singular source of truth for customer and stakeholder interactions.

The collaborative efforts of the Water Enquiries and Licensing and Approvals (L&A) teams aim to effectively handle the substantial volume of customer enquiries, enhancing overall customer service through the establishment of a centralised point of contact with the aim of providing first call resolution where possible.

Following the transfer of responsibilities for L&A functions from the Natural Resource Access Regulator (NRAR) to the department in April 2022, the subsequent transfer of L&A call centre services to the Water Enquiries team was approved in February 2023 (BN23/306). Additional funding was allocated to accommodate the increased volume of enquiries related to L&A. In 2023, a pilot project was initiated to manage complaints from L&A customers, representing an initial step in transitioning enquiries or complaints previously directed to the L&A team. This project expands on the pilot project,

which will see Water Enquiries provide a centralised point of contact for all L&A enquiries (including emails) to enhance and improve the customer service experience.

The objective of this project is to integrate L&A Customer Service into the existing Water Enquiries customer service centre, ensuring a consistent and reliable customer service experience through a single point of contact with the aim of first call resolution. Through this consolidation, we aim to deliver excellent customer service and respond with accurate information in a timely manner in a dedicated CRM system with improved operational efficiency.

The anticipated benefits of L&A customer service improvement are:

- improved customer service experience
  - meeting and improving KPI's for customer service delivery
  - increased quantity of information available (i.e. fact sheets, the department website)
  - clear customer service pathways
  - improved systems to support both internal and external customers accessing information
- increase customer satisfaction with reduction in response times
- increased visibility of L&A customer interactions, application status and responses
- accurate tracking of enquiries and complaints
- accurate reporting of enquiries and complaints
- improved customer service response times
- improved access to information for customers
- improved customer service statistics and data
- transparent interactions with stakeholders
- reduced levels of enquiries and complaints, allowing more time to complete complex enquiries and assessments.

WaterNSW is continuing to invest in its customer management and support systems as outlined in the digital roadmap. While the digital roadmap will deliver more timely and richer customer experiences, feedback from customers and stakeholders highlights that WaterNSW will need to maintain the current customer support levels and the current customer engagement and support modes to ensure that no customer is disadvantaged in the transition to increasing digital support services.

As a result, the current output measures and performance indicators are expected to remain relevant for the next regulatory period.

WaterNSW is proposing a realistic but challenging operating expenditure to facilitate this activity.

Proposed efficiencies

Efficiency improvements are anticipated via a range of key initiatives including:

- increase in the number of enquiries that are resolved at first call resolution
- improvements to the departmental website and Water Assist web tool

- customer service team promoting and supporting the use of available webtools allowing for customer self-service
- improvements to internal staff roles to identify and prioritise responses to general enquiries.

Through these initiatives, the below efficiencies are proposed:

- general technical CAA enquires – 50% reduction in the performance indicator from 10 to 5 working days
- general licensing technical enquiries – 50% reduction in the performance indicator from 10 to 5 working days.

WaterNSW's average annual proposed operating expenditure is 5% lower than the final year operating expenditure of this regulatory period. This highlights that WaterNSW is proposing an operating expenditure profile that offers real cost decreases over the next regulatory period compared to the final year of this regulatory period.

The proposed operating expenditure reflects and incorporates ongoing efficiency outcomes that are able to offset real cost increases impacting on WNSW costs, most notably real labour rate increases arising from the EBA that responds the substantial real labour purchasing power dilution over the current regulatory period

Reflecting on the potential for policy adaption over the forthcoming regulatory period, it is also apparent that WaterNSW is proposing an operating expenditure profile that seeks to manage this regulatory risk and uncertainty.

When compared to the allowance for the current regulatory this proposal offers to deliver to customers a substantial cost reduction in the average annual costs in order of 33%. This highlights not only WaterNSW's delivery of efficiencies over the current regulatory period but its commitment to locking in those savings through lower charges to customers.

Activity drivers

Statutory requirements for activities under the specific legislation for water access licences and approvals, and the supportive function of customer service, are stipulated under:

- *Water Management Act 2000*
- *Water Act 1912*
- *Water Management (General) Regulation 2018*
- Water sharing plans
- *Access Licence Dealings Principles Order 2004*
- NSW State Groundwater strategy
- National Water Initiative pricing principles.

W10-02 Business governance and support

Description

Business governance and support undertaken by WaterNSW refers to the business systems and processes that support organisation-wide activities including asset management, annual reporting and pricing submissions to IPART. These activities entail the provision of overhead costs incurred in support of WAMC services and activities

- The corporate RAB for WAMC
- WaterNSW overhead pool which is allocated to charge categories

Expenditure

Table 64: Current period operating expenditure and proposed costs ($000, 2024-25)

W10-02	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Customer management	2021-22	2022-23	2023-24	2024-25a	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	0	0	0	0					
Actual expenditure - WaterNSW	1,450	1,922	6,021	9,137					
Proposed expenditure - WNSW					7,423	7,371	7,536	7,033	5,420

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

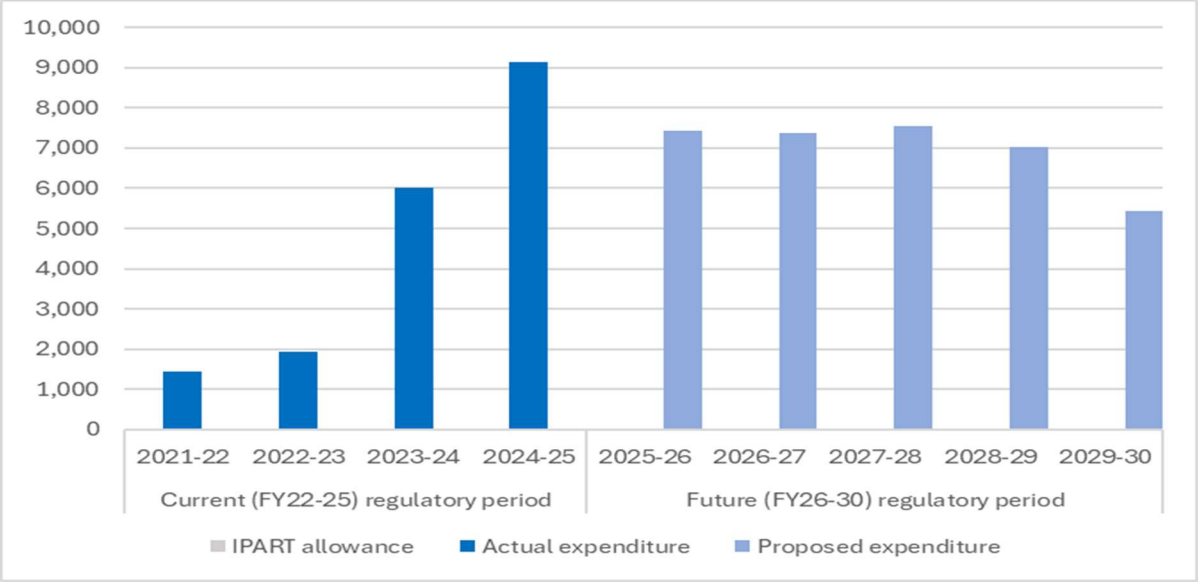

Figure 43: W10-02 Business governance and support 2026-30 operating expenditure ($000, 2024-25)

Table 65: Current period capital expenditure and proposed costs ($000, 2024-25)

W10-02 CAPEX	Current (FY22-25) regulatory period					Future (FY26-30) regulatory period			
Customer management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	3,356	3,542	4,512	1,818					
Actual expenditure - WaterNSW	5,798	3,995	1,994	13,704					
Proposed expenditure - WNSW					22,363	21,598	17,682	8,393	3,244

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

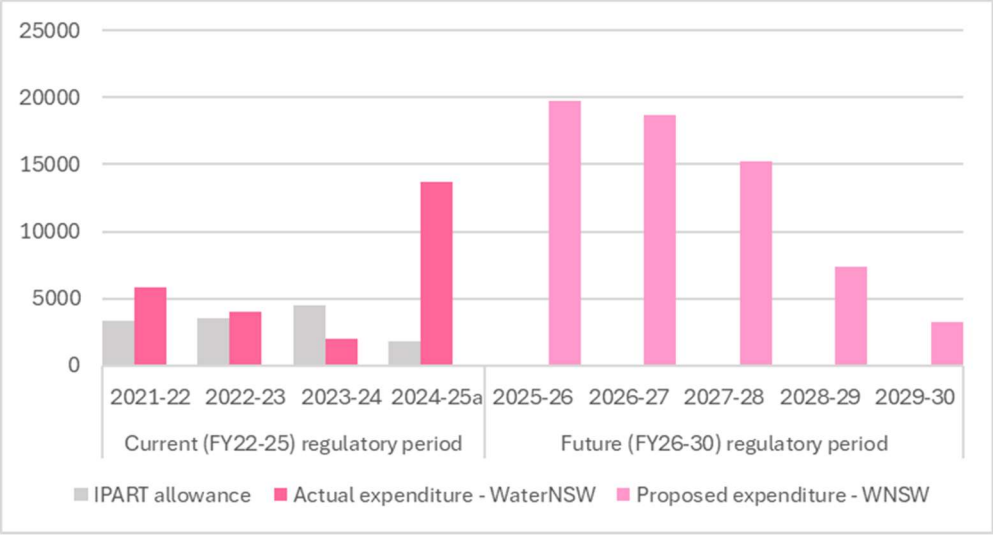

Figure 44: W10-02 Business governance and support 2026-30 capital expenditure ($000, 2024-25)

Current regulatory period

What we will deliver in the current regulatory period

During the current regulatory period, key deliverables include:

- Water Market Systems – implement a water licensing system to improve trading function that is modern, secure and digitally enabled.
- ICT Analytics – a single controlled APIM (Application Programming Interfaces Management) data access portal implemented accessing to near to real time operations water data.
- Operations Technology and Remote Operations - operations systems centralised to better control and monitor rivers and dams.
- Data Centre Services – periodic renewal of data centre infrastructure as assets reach end of life and improving disaster recovery capability for data centre services.
- Renewals - renewal and refresh of ICT infrastructure for WaterNSW covering hardware, software procurement and telecommunications devices that will improve the reliability of IT assets and optimise lifecycle costs.

Why our actual expenditure is higher than the IPART allowance in the current regulatory period

Current period capital expenditure allowance over the current determination period was $12.0 million higher than IPART's allowance, due primarily to WAVE Programs ($6 million for Water Market Systems.

Current period operating expenditure costs were influenced from drivers such as:

- Land Tax increases of $1.3m due to land transfers in 2024
- Digital increases of $4.7m, mainly from ICT personnel and contractor costs
- Increasing real costs cost of insurance costs

Digital costs were higher than expected due to:

- Cloud Adoption: The transition to predominantly building and hosting applications such as WAVE through the cloud has resulted in a shift with lower one-off capital expenditure to higher recurrent business-as-usual operating expenditure.
- Licensing Cost Increases: Licensing costs increased beyond WaterNSW's control. In managing software licence renewal expenditure, as a price taker, WaterNSW has leveraged is bound by the prices negotiated by the NSW Government where possible for software licensing, such as Microsoft products. In other cases, we undertake a stringent process to test the market for best value for money offers and the pursuit of longer-term contracts for higher discount levels.
- Introduction of New Ways of Working resulting in increased people related cost that combined a Development, Security and Operations (DevSecOps) structure with Agile project delivery. While Agile focuses on iterative development cycles, DevSecOps streamlines security integration throughout the process. The move to Agile was in response to learnings from implementing the CIMS project over the 2016 determination period. The New Ways of Working approach has matured throughout the period, hitting full stride in the final two years of the period. The benefits

WaterNSW expect to further build on include faster, more secure releases of programs, improved quality through early identification and fixing of security issues has led to quality products that better meet the business and customer needs and enabled insourcing of specialist expertise resulting in the conversion of external contractors to permanent staff.

Next regulatory period

What we will deliver in the next regulatory period

In the next regulatory period, key deliverables are as follows:

- Water Market Systems - provide a single digital experience in a preferred channel enabling customers to transact with the NSW water sector. Through the online portal, customers will be able to view their licences and entitlements, manage their orders, pay bills, respond to requests for information and report issues and risks.
- Technology Ecosystem Data Strategy - Implement a personalised digital platform for customers and the community to view water data, regulations, and decisions made by the water sector.
- Customer Metering - this program aims to enable customers to manage their water meters through a centralised portal for installation/replacement, usage tracking, faulty metering reporting, maintenance and recording and reporting. This meter data enables accurate customer water accounts, billing and reporting to agencies who make critical decisions based on this data. It will also empower the customer to better understand their water usage patterns to support their decision making and improve the efficiency of their water usage.

Why our forecast efficient expenditure will be higher/lower than in the current regulatory period

The forward operating expenditure is expected to come down over the next regulatory period compared to the final year of this regulatory period as the 1% compounding efficiency target takes effect.

Nonetheless the forward operating expenditure profile remains highly influenced by real cost drivers associated with labour unit rates expected to increase above CPI, the flow through of land tax costs and continued real cost pressure from insurances.

The forward capital expenditure profile includes a step increase arising from changes in the accounting standards to recognise operating leases as capital expenditure.

The forward capital expenditure profile is dominated by delivery of key digital investments through the digital strategy as set out in Section 4.2 of the proposal.

W10-03 Billing Management

Description

The management of billing requirements and subcontracted billing, revenue collection and debtor management service delivery, and responding to queries on billing activities.

WaterNSW undertakes billing for all WAMC services charges (whether provided by WaterNSW, the department or NRAR).

These costs are recovered directly from customers as per the existing water management charging arrangements (comprised of a $ per entitlement (fixed) and a $ per water take (variable) charge) and the minimum annual charge (MAC) to send bills, manage and resolve billing queries and update relevant systems and processes.

Expenditure

Table 66: Current period operating expenditure and proposed costs ($000, 2024-25)

W10-03	Current (FY22-25) regulatory period				Future (FY26-30) regulatory period				
Billing management	**2021-22**	**2022-23**	**2023-24**	**2024-25a**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
IPART allowance	2,285	2,212	2,024	2,039					
Actual expenditure	1,750	1,669	1,855	2,466					
Proposed expenditure					2,445	2,364	2,389	2,482	2,566

[a]: 2024-25 'actual' figures are forecasts at the time of submission.

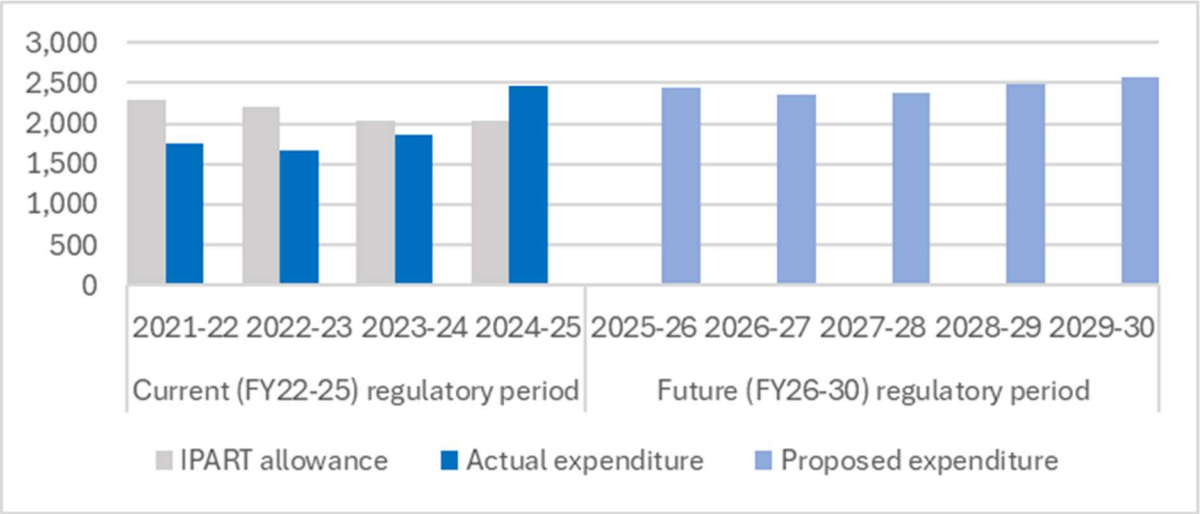

Figure 45: W10-03 Billing Management 2026-30 operating expenditure ($000, 2024-25)

Current regulatory period

What we delivered in the current regulatory period

Over the current regulatory period WaterNSW was able to fully meet the requiring volume of accounts to be billed for all services provided by WaterNSW, the department or NRAR. There is one output measure (OM79) that identifies that the expected number of accounts billed in each year is 38,915 accounts.

Why our actual expenditure is lower than the IPART allowance in the current regulatory period

WaterNSW adopted a range of process improvements and leveraged the delivery of WAVE outcomes over the course of the current regulatory period to keep costs for billing services below that allowed by IPART. However, real cost increases coupled with increasingly complex billing arrangements arising from the rollout and revision to policy initiatives such as the Non-Urban Metering Reform, and the issuing of Floodplain Harvesting Licenses. This increased complexity as well as real cost drivers in key cost elements (such as labour rates) is forecast to result in higher efficient operating expenditure than allowed by IPART in the current financial year.

Next regulatory period

What we will deliver in the next regulatory period

Over the next regulatory period WaterNSW will continue to fully meet the required volume of accounts to be billed for all services provided by WaterNSW, the department or NRAR. The proposal recognised that there are a number of policy changes that have been introduced, and as a prudent network service provider, WaterNSW fully expects that adjustments to existing policy settings will most likely arise during the next regulatory period. WaterNSW is forecasting an increase in the number of services to be billed following on from policy reforms such as the Non-Urban Metering Reform and the issuing of Floodplain Harvesting licences

Why our forecast efficient expenditure will be higher/lower than in the current regulatory period

WaterNSW is proposing a realistic but challenging operating expenditure to facilitate this activity. The average annual proposed operating expenditure is 1% lower than the final year operating expenditure of this regulatory period. This highlights that WaterNSW is proposing an operating expenditure profile that offers real cost decreases over the next regulatory period compared to the final year of this regulatory period. The proposed operating expenditure reflects and incorporates ongoing efficiency outcomes that are able to offset real cost increases impacting on WNSW costs, most notably real labour rate increases arising from the EBA that responds the substantial real labour purchasing power dilution over the current regulatory period. Reflecting on the potential for policy adaptation over the forthcoming regulatory period, it is also apparent that WaterNSW is proposing an operating expenditure profile that seeks to manage this regulatory risk and uncertainty.