

NSW Water Strategy

Annual progress report on implementation

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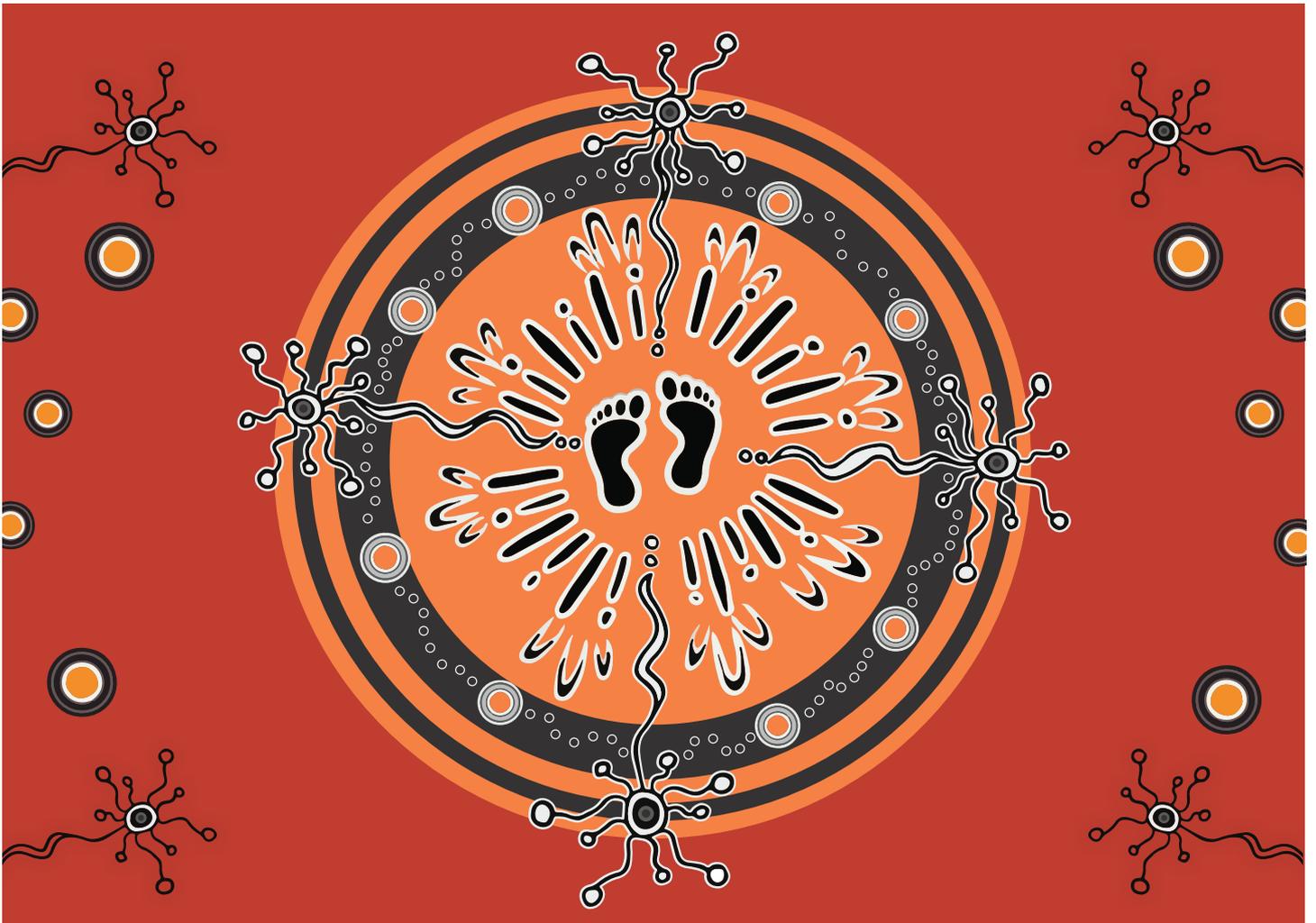
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Cover image Image courtesy of Destination NSW. Tweed Valley, Murwillumbah.

More information www.dpie.nsw.gov.au/water/plans-and-programs/nsw-water-strategy

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Acknowledgement of Country

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and waters and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

Minister's foreword



The Hon. Kevin Anderson, MP
Minister for Lands and Water

The NSW Water Strategy was launched on 16 September 2021. It is the first of its kind for NSW and provides a 20-year blueprint to improve water security and reliability for communities across the state.

Development of a statewide water strategy was a significant milestone for water management in NSW. In the NSW Government's first year of implementing the strategy, we have been presented with many challenges. In particular, record floods hit communities still recovering from intense drought and catastrophic bushfires. These events reinforce the need, identified through the NSW Water Strategy, to address and minimise future water service risks by making fundamental changes in thinking about how we access, manage and use water.

The NSW Government has delivered significant reforms and initiatives to improve water management in recent years, including during this first year of implementing the NSW Water Strategy.

Compliance with water rules and regulations has improved through the establishment of the independent Natural Resources Access Regulator (NRAR). NSW is leading the way when it comes to metering, measuring and regulating our most precious resource. NRAR, in partnership with the Department of Planning and Environment, has set the bar high for other Australian states by supporting the government's rollout of accurate metering of non-urban water take with consistent and transparent rules and strong and effective enforcement activities. This is important so that we can provide certainty for farmers, the environment and downstream water users, because if you can't measure it, you can't manage it.

Our continued efforts to restrict, manage and measure floodplain harvesting demonstrate our commitment to fair and equitable management of water resources. The first-ever floodplain harvesting licences for the Border Rivers and Gwydir valleys came into effect on 1 August 2022, along with amendments to the relevant water sharing plans. This will ensure that this practice is controlled within legal limits and will return in order of 100 GL/year on average to the floodplains, rivers and creeks in the northern Basin.

We have also made significant progress to improve confidence in water markets through creating more transparent and effective processes for managing trade and providing good quality and timely information to enable water users to make informed trading decisions.

We will build on the progress we have made through these reforms and use this momentum to keep improving. Importantly, we continue to consider the messages we receive from stakeholders around better access to information and improved opportunities to share experiences and meaningfully shape decisions.

In the first year of NSW Water Strategy implementation, the NSW Government has initiated new program areas tasked with delivering the next tranche of water reform.

We have:

- developed an improved regulatory framework for local water utilities that began on 1 July as part of the Town Water Risk Reduction Program, which aims to empower local water utilities and involve them as partners in developing water management solutions
- initiated delivery of the NSW Water Efficiency Framework and program to reduce the demand on finite water resources and drive changes in how we use water
- established a dedicated Aboriginal Water Program to develop a statewide Aboriginal Water Strategy and associated projects and programs that recognise rights and enhance outcomes for Aboriginal communities
- embedded a climate projects function within the Department of Planning and Environment, which will deliver ground-breaking climate science that ensures the most up-to-date understanding of climate and associated risks supports water resource planning and infrastructure.

These new program areas will drive enduring solutions in the coming years and ensure our focus is on addressing emerging challenges and delivering on community expectations.

Our future reform programs will be based on a foundation of collaboration, using partnership approaches and co-design wherever possible to build the capacity and capability that will enable community driven solutions. We need to ensure that water decisions made across the sector that affect communities, businesses and industries, and the environment are measurable, purposeful, inclusive and respectful, timely and transparent.

Better valuing our precious water resources and ‘doing more with less’ are key messages of the NSW Water Strategy. We are seeking new ways and approaches to working with the community to ensure we have secure, reliable water sources and to build future resilience to a variable climate and future droughts.

Our partnership approach with water utilities to improve water efficiency and conservation through leakage reduction will save water and reduce unnecessary treatment and pumping costs – ultimately reducing water bills for customers. Our Washing Machine Replacement Trial, developed in collaboration with Sydney Water and Hunter Water, has had a huge response. These initiatives deliver real outcomes for NSW residents and help to reduce cost of living.

The Safe and Secure Water Program – the NSW Government’s flagship water infrastructure program for local water utilities – is also delivering exciting results. It is reducing water quality and supply risks and delivering secure and sustainable water and sewerage services for towns and communities across the state.

I am proud to present the first annual progress report for the NSW Water Strategy, which describes how we are translating the long-term directions identified in the 7 priority areas of the strategy into deliverable actions and initiatives.

Progress reporting on implementation shows how committed we are to delivering the NSW Water Strategy through an adaptive management approach, and in a transparent and tangible way that delivers real benefits for the people of NSW.

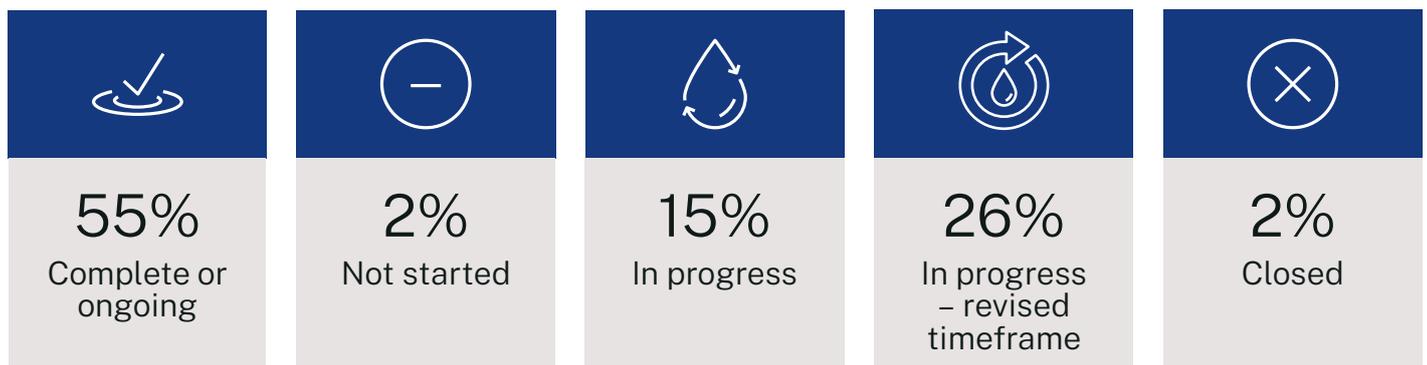
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Executive summary

Since the NSW Water Strategy was launched in September 2021, the NSW Government – together with our delivery partners – has made significant progress in implementing actions to achieve the priorities and objectives set out in the strategy, and set up the foundations for future reforms.

This document describes how the NSW Government has implemented the NSW Water Strategy during its first year of operation. Of the 123 actions in the NSW Water Strategy 2021–2022 Implementation Plan:



A focus of NSW Water Strategy implementation for 2021–2022 has been customer and community experience (Priority 1 of the strategy). We have implemented a range of initiatives that make it easier for water users and customers to find the information they need, at the time and in the format that suits them. Some examples include:

- commencement of the Water Engagement Roundup, a monthly webinar that gives updates on current consultation and engagement about important water policy and programs from the department
- hosting the first Regional Water Conversation and State Water Roundtable, forums focused on changing how we engage with a view to strengthening relationships and improving opportunities for 2-way dialogues
- publication of consultation information for the draft Greater Sydney Water Strategy in 11 different languages and in multiple channels to ensure our approach to consultation was inclusive
- release of the Department of Planning and Environment’s Water Open Data Portal, providing access to data, information products and data models to the community, the sector and industry to help make water management more transparent
- publication of a series of free, non-technical videos on online platforms that gives a range of information about water in NSW, including availability, allocations, drought and water quality
- launch of Water Assist, a simple, web-based tool that helps you identify the right government agency or entity for an enquiry or application; lodge an application for a controlled activity approval, water access licence, water supply works and/or use approval or water licence; report suspicious or unauthorised activity; or simply ask a question.

On 1 April 2022, certain licensing and approvals functions were transferred from the Natural Resources Access Regulator (NRAR) to the Department of Planning and Environment's Water Group. As a result, water licensing responsibilities are now shared between only 2 agencies (the department and WaterNSW), instead of 3. The transfer aligns responsibilities more clearly, making it easier for customers to navigate the licensing process. This change will also inform the department's work to set up a better service delivery model in the future. Broader reform initiatives are underway to make more improvements to the licensing system for the benefits of customers and the water sector as a whole.

These actions reinforce the NSW Government's commitment to ensuring that customer interactions with government are easy and that it is as simple as possible to obtain or manage water licences and approvals.

The experience of drought across NSW also highlighted the need for the water sector, including water State-Owned Corporations, to act in a more coordinated way to deliver for communities. In July 2021, the Department of Planning and Environment, WaterNSW and NRAR

developed, endorsed and published a new Roles and Responsibilities Agreement that sets out in detail each agency's role in key water management functions and performance targets. This improved clarity, coordination and accountability will deliver better outcomes for customers and the environment.

Improvements in coordination are also reflected in new Statements of Expectations for Sydney Water, Hunter Water and WaterNSW, and in changes to operating licences for Sydney Water and WaterNSW.

This progress report highlights some of the key achievements over the last 12 months. It also identifies where changes in approach or delivery timeframes have been required for some actions, recognising the need for adaptation in an increasingly challenging and complex environment. This progress report demonstrates the significant amount of new work that is being done through the NSW Water Strategy – work that is on top of the 'business as usual' activities undertaken across the water sector by many agencies, local water utilities, State-Owned Corporations and environmental water holders.

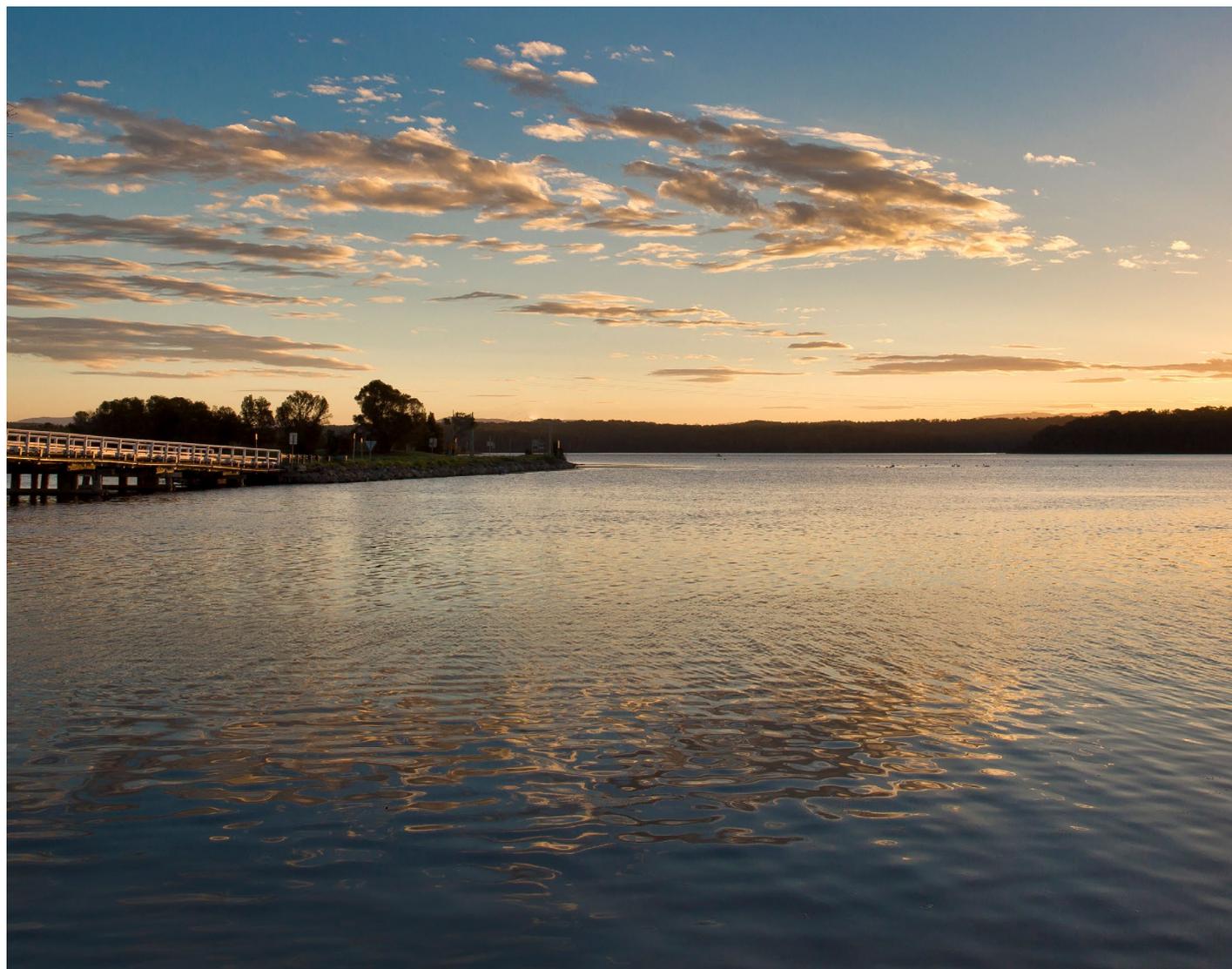
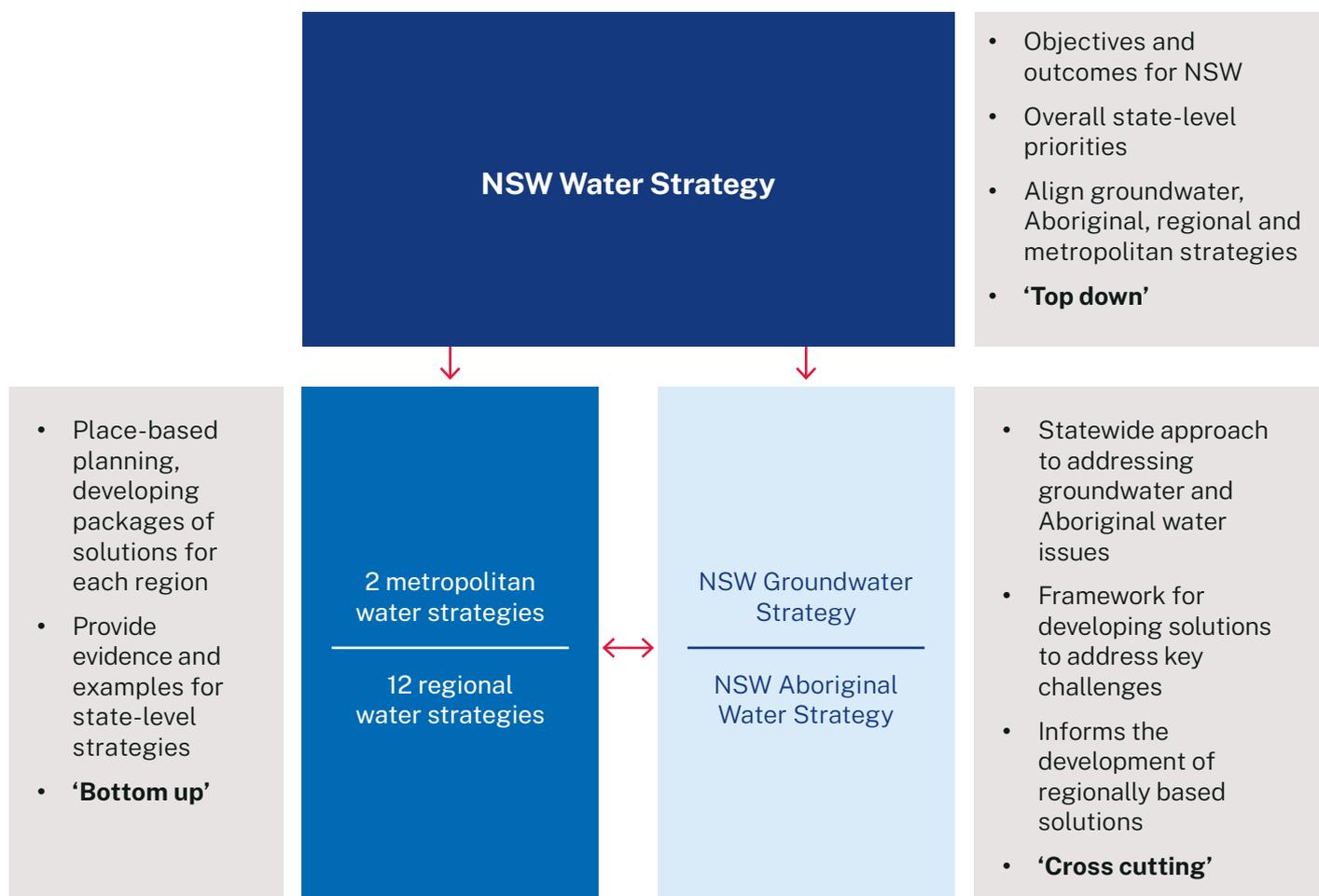


Image courtesy of Destination NSW. Wallaga Lake Bridge, Bermagui.

Summary of NSW Water Strategy

The NSW Water Strategy is part of a suite of long-term strategies that the NSW Government is developing to maintain and build the resilience of the state's water services and resources over the coming decades. This statewide, high-level strategy works in tandem with 14 place-based strategies (12 regional and 2 metropolitan water strategies) and 2 cross-cutting strategies: the NSW Groundwater Strategy and the NSW Aboriginal Water Strategy.

Figure 1. NSW Water Strategy



2021–2022 Progress report

The following tables provide an update on each of the actions in the 2021–2022 NSW Water Strategy Implementation Plan.

Initiatives that were planned for delivery under each action are listed, along with their status as at 30 June 2022, defined below:



Not started

Work has not yet commenced



In progress

Work has commenced



In progress – revised timeframe

Work has commenced but will take longer than expected



Completed or ongoing

Work is complete and now business as usual



Closed

Work will not go ahead



Image courtesy of Destination NSW. Scenic aerial overlooking the Bellinger River, Fernmount.

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

Action 1.1: Improve engagement, collaboration and understanding

The government will improve how the water sector engages with communities about water management and make it much easier for water users and the broader community to engage with and understand water management and how decisions are made.

We will:

- use plain English in water management communications and documents
- improve coordination between water sector agencies on engagement activities to reduce overlap, confusion and consultation fatigue
- test community interest in each region of NSW to be involved in oversight of the implementation of each of the 12 regional water strategies
- build knowledge, seek feedback and explore new ways to increase confidence among water users about water management decisions
- work with First Nations/Aboriginal People and peak organisations to design appropriate and inclusive approaches for engagement and consultation with Aboriginal People.

Deliverable	Status	Update
Provide plain English explanations with water access licenses to provide clarity for water users about mandatory conditions.		The Department of Planning and Environment is giving plain English explanations of mandatory conditions for water access licences and water supply work approvals when any conditions change or updates are notified to water users. This work will continue, with a focus on continuous improvement.
Host a monthly public webinar about upcoming water engagement events.		The Water Engagement Roundup began in April 2021. This monthly webinar provides updates on current consultation and engagement about important water policy and programs from the Department of Planning and Environment. The webinars focus on a topic of interest to stakeholders.
Publish the findings of an independent review of the effectiveness of our stakeholder and community engagement activities every 2 years.		KPMG was engaged in November 2021 to independently review the Department of Planning and Environment – Water Stakeholder and Community Engagement Policy and to recommend a future recurring audit program. The department published the findings of the audit on its website in May 2022.
Publish multimedia content that makes water information available at a time and in a format that suits customers and the community.		The Department of Planning and Environment has progressively published a series of videos on online platforms that provides a range of information about water in NSW, including availability, allocations, drought and water quality. These videos are free, non-technical resources that users can access at any time. Publication of content will be an ongoing action.

Deliverable	Status	Update
<p>Develop a strategy to implement changes to the licensing and approvals system with a focus on accountability and performance, driven by customer experience.</p>		<p>In June 2022, the NSW Government announced funding for a 2-year program to deliver customer-focused water licensing and approval improvements. The program will reduce application and process times for customers, and give more seamless online navigation. Staged improvements will be tested with targeted stakeholders from 2023 onwards to ensure delivery of an improved customer experience.</p>
<p>Publicly report on progress of all commitments made in response to recommendations from inquiries, reviews and audits.</p>		<p>The Department of Planning and Environment has developed a Commitments Library that summarises of all commitments made by the NSW Government that the Department of Planning and Environment – Water is responsible for implementing in response to recommendations from independent inquiries, reviews and audits. The Commitments Library will be published on the department’s Water website in 2022.</p>



Image courtesy of Wentworth Shire Council. Darling and Murray River junction.

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).

Deliverable	Status	Update
Improve the Department of Planning and Environment's website as our primary tool of communication and access to information for customers and the community.		The department has begun updating the Department of Planning and Environment – Water website, with a focus on clear communication in a format that is accessible to the community. Updates and reviews of existing content will continue as part of migration to the new website.
Take an open by default approach to information and publication that describes when and how we publish information, based on an 'if not why not' approach.		The Department of Planning and Environment has developed a draft Guideline on Transparency and Publication that describes when and how the NSW Government will publish water information using an open-by-default approach. The department's Water Open Data Portal has been published on the NSW Government Sharing and Enabling Environmental Data (SEED) website. 28 data sets have been made available on the portal. Releases of data will be iterative and ongoing.
Develop an open data framework to enable public access.		
Publish information on how water allocations are determined in each of our large regulated river valleys.		To help describe the way in which water is allocated to the various priorities and licence types, the Department of Planning and Environment has developed Water Allocation Guides on how the water allocation process works in each of the major regulated river valleys. Water Allocation Guides have been published for the majority of major regulated rivers.
Continuously improve the Water Insights and Water Information Dashboards.		Improving dashboards, data management and development processes is an ongoing priority for WaterNSW and the Department of Planning and Environment. Key achievements over the last 12 months include improving dashboards for environmental and consumptive use, trade and available water determinations. The department has also improved its project management framework and process to ensure new dashboards are fit for purpose, more robust, reliable and consistent, and implemented centralised data storage. The continued development of WaterInsights now gives customers and the general public with the ability to download all historic data at any location in addition to the short-term current water information.

Action 1.3: Enhance modelling capabilities and make more data and models openly available

The government will continue to improve and expand our modelling capabilities and make more data, models and model outputs openly available.

We will:

- develop best-practice guidelines/Codes of Practice to ensure that all models are widely applicable, and that modelling is of the highest quality
- maximise the benefits from existing fit-for-purpose models by investigating how we can link these different models and expand their application
- identify opportunities to increase transparency in model methods and to make publicly available models and data that have been peer-reviewed and quality assured.

Deliverable	Status	Update
Through the open data framework, publish models and model outputs, with an initial focus on rainfall and runoff models.		Work has progressed on drafting best-practice guidelines for modelling. Completion of the guidelines is scheduled for December 2022. Work has also progressed on making climate and flow data publicly available. A pilot project has released this data for north coast catchments. A project design is in place to extend this to more complex models and larger geographic areas. Full implementation of this statewide rollout is likely to take 2 to 3 years.



Image courtesy of Belinda Collingburn, Department of Planning and Environment. Gwydir River, Bingara.

Action 1.4: Reinforce the effectiveness of the Natural Resources Access Regulator

The government will continue to build the capacity of the NRAR to fulfil its role as a fair but firm regulator of water management and give the community confidence that water plans are implemented and rules are enforced.

We will:

- undertake more extensive and effective promotion of the regulatory approach and actions of the NRAR
- clarify water user obligations and communicate them clearly, so that water sharing plans across the state more effectively underpin a modern and enforceable licensing system
- increase the NRAR's use of and access to technology, such as remote sensors, satellite imagery and drones, enabling the NRAR to better direct its investigations and resources to address the instances of highest harm to water users and the environment.

Deliverable	Status	Update
Release 20 planned compliance program final reports to industry and the public.		This action has been revised. NRAR has reviewed the way that it targets regulatory effort. As part of this review, NRAR has developed and published Regulatory Priorities which has resulted in a reorganised compliance effort. NRAR is now targeting 4 annual priority areas and will publish annual reports to ensure transparency and accountability.
Publish information to make sure that water users understand their obligations and are aware of the consequences of non-compliance and the compliance approach of the regulator.		NRAR continues to publish a range of education material to facilitate both general compliance and in support of the Regulatory Priority areas. NRAR also issues media releases and updates a public register when enforcement sanctions are issued for non-compliance.
Undertake 50 formal stakeholder events that inform and promote NRAR's regulatory work in priority areas.		The COVID-19 pandemic created significant disruptions to all planned travel and face-to-face meetings and events. Despite this, between January and June 2022, NRAR attended 20 events and Customer Advisory Group meetings, and is on track to meet the target of 50 events per calendar year.
Engage regulated entities in 5,000 site inspections through the Routine Monitoring Project.		Routine monitoring, fieldwork and site visits have been significantly affected by COVID-19 travel restrictions. NRAR is on track to meet this target by end of the 2022 calendar year. As of the end of April, 6,020 works had been inspected on 3,205 properties.
Hold a minimum of 3 meetings per year between the NRAR Executive/Board and major stakeholders.		The COVID-19 pandemic created significant disruptions to all planned travel and face-to-face meetings. This has meant that the NRAR Board could not attend many stakeholder events. It is expected that this target will be delayed only slightly, with regional NRAR Board trips planned for June to July 2022.
Invest in data, intelligence, analytics and systems to focus our regulatory effort towards greatest compliance outcomes.		NRAR has invested significant resources to establish the following teams: <ul style="list-style-type: none"> • spatial analysis unit: specialising in aerial and satellite data analysis to support and direct investigations work • intelligence unit: analysing data provided by the public and collected in the field to establish patterns of conduct and inform the Regulatory Priorities • ICT unit: planning and delivering an ICT strategy to better support all aspects of NRAR's work.

Action 1.5: Take the final steps in floodplain harvesting reform

The government will finalise floodplain harvesting reforms by issuing floodplain harvesting licences and amending draft water sharing and water resource plans to manage take within legal limits.

Deliverable	Status	Update
Finalise floodplain harvesting water access licences and works approvals to manage water take within legal limits, amend water sharing plans and revise draft water resource plans for assessment.		Licences for the NSW Border Rivers and Gwydir were determined in February 2022. Commencement of the licensing framework for those valleys and finalising licences for other valleys has been delayed due to disallowance of the enabling regulations in the NSW Parliament in February 2022. Regulations were reintroduced in June 2022 and amendments to water sharing plans are progressing.



Image courtesy of Department of Planning and Environment, Jane Humphries. Gin Holes, Gwydir Wetlands.

Action 1.6: Review the regulation of domestic and stock basic landholder rights

The government will review and consult with the community about how domestic and stock basic landholder rights are regulated.

We will:

- review the current situation to better understand how much water take is occurring under domestic and stock basic landholder rights and whether this is creating risks in particular areas or circumstances
- consult with the community on options for improving understanding of domestic and stock basic landholder rights, and whether rules are required to better manage that form of water take and enhance the regulator's (NRAR) ability to enforce compliance.

Deliverable	Status	Update
<p>Publish a discussion paper about domestic and stock basic landholder rights management and water usage and consult with the community to confirm key issues.</p>		
<p>Conduct a case study into any significant issues relating to domestic and stock basic landholder rights to collect evidence, quantify risks and scope potential solutions.</p>		<p>The Department of Planning and Environment has published a fact sheet and revised web pages about domestic and stock basic landholder rights and water management on its website. The current settings for this type of water take featured in a presentation at a public engagement Water Roundup session. The department has incorporated questions from stakeholders at this session into the review and web content.</p>

Action 1.7: Make sure the majority of non-urban water take in NSW is accurately measured

The government will ensure that the vast majority of non-urban water take, including floodplain harvesting, in NSW is measured by accurate, auditable and tamper-proof meters.

Deliverable	Status	Update
Monitor levels of compliance and uptake of metering and telemetry by water users.		NRAR's highest Regulatory Priority is supporting implementation of the metering reforms. NRAR has multiple teams of field staff dedicated to educating water users, monitoring for compliance and undertaking enforcement activity to address non-compliance.
Introduce clear and enforceable rules for measuring floodplain harvesting.		New regulations have been made that set clear rules on the requirements for metering equipment to ensure that the amount of water taken under floodplain licences is measured and within the legal limits. Over the last 12 months, the Department of Planning and Environment has established demonstration sites to showcase floodplain harvesting (FPH) measurement and started a field program to install FPH measurement equipment at 50 sites in the Gwydir and Border Rivers catchments.
Operate and improve coverage of a telemetry system, to allow water users to remotely measure and transmit their water take information.		The Department of Planning and Environment and WaterNSW have been working together to enhance telemetry coverage, including identification of satellite solutions. This includes engaging with industry to develop telemetry products such as Local Intelligence Devices (LIDs). An exemption to the telemetry requirements has been defined for those water users who are in 'telemetry black spot' areas until an alternate solution becomes available. The department and WaterNSW have engaged and communicated consistently with water users about telemetry through roadshows, webinars and other engagement activities. What we heard reports from consultation will be circulated.
Engage with water users to ensure awareness and to equip them with the information they need to comply with the rules.		The Department of Planning and Environment has continued to engage with water users through roadshows and webinars, particularly focused on areas with upcoming compliance dates. Extensive media and communications and engagement activities have been undertaken, including website and FAQ updates. The department has developed a metering guidance tool which allows water users to understand their metering requirements.
Engage with suppliers and installers of metering equipment to increase water users' choice of metering and telemetry equipment and installers.		The Department of Planning and Environment has held regular supplier and installer forums to inform metering requirements and also track issues such as supply bottlenecks. Suppliers and installers have attended roadshows to improve their awareness of the metering reforms and engage with water users. The department has also improved the LID testing process. Manly Hydraulics Laboratory now does assessments on a user-pays basis instead of WaterNSW doing tests. The department is currently stocktaking equipment and service provider availability in light of COVID-19 and flood impacts.

Metering rollout

A key part of the NSW Government's water management reform is modernising water metering and monitoring, and a staged rollout of a robust metering framework to improve the standard and coverage of non-urban water meters across the state.

NSW has the most water licences in Australia and the largest volume of water to manage. The new metering framework sets clear rules around who needs a meter and is based on the objective that meters are accurate, tamper-proof and auditable. These rules apply to water supply works, such as pumps, that can be measured with an accurate meter and are licensed to take water from regulated and unregulated rivers and groundwater systems.

While many water users already use meters to record their water take, these new rules apply a consistent standard to ensure we know how much water is being taken and if it is being taken according to the rules. Accurate data about water take can create on-farm efficiencies and helps to ensure that the needs of downstream water users can be met. This includes water being used for town water supplies and to support the environment.

The Department of Planning and Environment has worked closely with WaterNSW and NRAR since the metering rules became law in 2018, to ensure water users are aware of the new rules and how to comply. We are working together to continually improve our communications and to ensure that we are meeting the needs of water users.

The department has engaged extensively with water users, meter suppliers and duly qualified persons (DQPs) – who install and validate meters and telemetry equipment – to raise awareness of the rules. This ongoing engagement has also helped us to learn about some of the challenges facing water users and DQPs. This in turn informed our approach to communications and online information tools – such as the Metering Guidance Tool and Telemetry Coverage Tool – to help people access the information they need to become compliant.

In 2021 the department held a series of information sessions, both virtual and face-to-face (in 15 regional locations). This face-to-face engagement has continued in 2022 in an additional 6 locations to-date.

These information sessions included trade stalls where water users could talk to a selection of metering suppliers to help them understand what products and equipment were available to meet their needs as their compliance deadline approached. Based on feedback that these sessions are valuable for water users, the department is continuing to plan and deliver information sessions as the rollout continues.

The department also engaged water users and industry in a variety of ways to promote awareness of the metering rules. This included stories in newsletters published by the department, WaterNSW and NRAR, engaging industry (manufacturers and DQPs) in surveys to track the uptake of metering and measurement equipment, letters and fact sheets mailed to water users and presentations to WaterNSW River Operations Stakeholder Consultation Committees and Customer Advisory Group meetings. The department has run 3 outbound call campaigns to affected water users in the northern and southern inland region and whose surface water pumps are sized 500 mm and above, aimed to ensure they were aware of the rules and received follow-up information if requested. The department also led a multimedia advertising campaign under the banner of 'Do you need to comply? Know the rules and meter your supply' which led to a significant rise in applications.

To ensure water users comply with the water measuring rules, the NRAR – the state's independent water regulator – audits data sources and visits properties to confirm that the appropriate metering equipment has been installed and validated. If required, data about water taken is transmitted to the Data Acquisition Service, managed by WaterNSW.

As part of the staged compliance rollout, water users with surface water pumps of 500 mm and above were required to comply by 1 December 2020, water users in northern inland NSW were required to comply with the new metering standards by 1 December 2021 and southern inland users will need to comply by December 2022. Coastal NSW water users will need to comply by 1 December 2023.

By modernising water metering and monitoring, the NSW Government is helping to deliver better planning of water infrastructure and river operations at a local, regional and state level.



Image courtesy of Department of Planning and Environment. Magflow Meter and stockproof fence.

Priority 2. Recognise First Nations/Aboriginal Peoples' rights and values and increase access to and ownership of water for cultural and economic purposes

Action 2.1: Strengthen the role of First Nations/Aboriginal People in water planning and management

The government will strengthen the role of First Nations/Aboriginal People in water planning, management, governance and decision-making by:

- working with First Nations peak organisations, Aboriginal water interest groups and First Nations communities to determine how we will work together on critical statewide water strategies, policies, programs and issues
- adopting more appropriate and inclusive approaches to engagement and consultation with Aboriginal people, including in accordance with each First Nation's cultural protocols
- ensuring existing water governance and decision-making processes provide for First Nations representation, including through identified First Nations roles on relevant boards and committees and supporting roles for Aboriginal community-controlled organisations in water governance
- partnering with First Nations in water planning and management consistent with the principle of self-determination, and building the capacity of First Nations to develop water governance and decision-making processes that empower Traditional Owners
- ensuring water related plans, policies and programs deliver social, spiritual, cultural, economic and environmental outcomes for First Nations/Aboriginal People.

We will also improve accountability and transparency in water governance and management, consistent with actions under Priority 1.

Deliverable	Status	Update
Develop an engagement framework that is appropriate, inclusive and culturally-appropriate, that describes when and how we engage with First Nations/Aboriginal People and peak organisations.		<p>Development of an Aboriginal/First Nations Engagement Framework has begun, including undertaking 7 on-country workshops and 2 virtual engagements to identify culturally appropriate and inclusive options for engagement models that respect indigenous governance.</p> <p>Guidelines to ensure fair remuneration for expert knowledge from Aboriginal People/First Nations stakeholders across water programs and infrastructure projects have been developed and are being implemented.</p>

Action 2.2: Develop a statewide Aboriginal water strategy

The government will partner with First Nations/Aboriginal People to co-design a statewide Aboriginal water strategy that will identify a program of measures to deliver on First Nations' water rights and interests in water management. Delivering the Aboriginal Water Strategy will involve:

- reviewing and identifying required amendments to the water management legislative framework to enable Aboriginal rights, interests and ownership of water
- revising existing, and developing new, water policy and planning approaches
- designing programs to deliver outcomes
- securing sustainable funding and resourcing
- building the organisational capacity of First Nations/Aboriginal People to enable self determination and sustained participation in projects relevant to water interests.

The Department of Planning and Environment will partner with First Nations/Aboriginal groups to co-design:

- the principles for developing the Aboriginal Water Strategy
- the process and framework for developing the Aboriginal Water Strategy
- the engagement model needed to consult with peak groups and First Nations/Aboriginal People, including the involvement of Native Title claimants and holders.

Deliverable	Status	Update
Commence the development of the Aboriginal Water Strategy, with an initial focus on scoping and co-design of the principles, process and engagement model for developing the strategy.		Scoping of the draft Aboriginal Water Strategy has begun and draws on significant First Nations/Aboriginal engagements from 70 workshops conducted in recent years on water resource planning and regional water strategies. Six pillars were agreed upon by peak Aboriginal stakeholders in 2020 that will define the principles to draft the strategy and design approach. A broadly framed set of potential actions will be taken to further co-design for community and stakeholder 'red pen' review through 2023. We are developing relationships with other government agencies and First Nations/Aboriginal stakeholders to support this work. The Department of Planning and Environment's Aboriginal Water Program is developing in parallel an Aboriginal Engagement Framework as a critical element to take back to communities for co-design review of the draft Aboriginal Water Strategy in 2023.

Action 2.3: Provide Aboriginal ownership of and access to water for cultural and economic purposes

The government will enhance First Nations/Aboriginal People's access to water for cultural and economic purposes by:

- recognising and protecting native title rights to water in water sharing plans
- working with First Nations to better understand cultural values and flow requirements to inform water planning and sharing decisions
- increasing water available for cultural and spiritual purposes
- increasing water entitlements in First Nations/Aboriginal ownership
- where there are synergies, using water allocated for environmental and consumptive purposes to deliver Aboriginal outcomes and benefits
- improving and enabling access to Country to maintain healthy waterways and engage in cultural practices.

Deliverable	Status	Update
Contribute to national processes to confirm the inland water target under Closing the Gap National Agreement.		NSW is contributing to the national processes to confirm the inland water target under the National Agreement on Closing the Gap. Data on NSW water entitlements and Aboriginal water holdings has been provided to the Australian Government to inform a national statistical baselining exercise. NSW continues to develop state-based implementation plans for the Closing the Gap commitments.
Identify opportunities for greater Aboriginal access and ownership of water through the Aboriginal Water Strategy.		As part of the 2021–2025 pricing determination, the Independent Pricing and Regulatory Tribunal exempted cultural access licences from water management charges. Work will continue to identify opportunities for greater Aboriginal access and ownership of water through the Aboriginal Water Program.
Develop a pilot to test methodology for cultural flows.		Cultural Flows – A Guide for Water Managers, developed as part of the National Cultural Flows Research project, has been selected as the appropriate method to be used for a pilot. Modelling sites for potential pilot project areas has been done.
Examine options to address barriers to First Nations/ Aboriginal Peoples' access to the water market such as pricing.		The Independent Pricing and Regulatory Tribunal's pricing determination for the 2021–2025 period, addresses pricing-related market barriers for accessing water used for cultural purposes. The NSW Government will continue to examine options to address barriers to water markets through the Aboriginal Water Program.
Continue work as part of the whole of government negotiating team for Native Title determinations and Indigenous Land Use Agreements and address Native Title issues in water sharing plans as they are amended or remade.		The Department of Planning and Environment continues to participate in whole-of-government negotiations for native title determinations and Indigenous Land Use Agreements. A review of all water sharing plans has been undertaken to ensure their compliance with Native Title requirements.
Develop a pilot to enable access to Country between landholders and Native Title holders to identify sites and progress negotiated outcomes, such as use and access.		A pilot to enable access to Country has begun in the Murrumbidgee region, working with local First Nations/Aboriginal stakeholders. Culturally significant sites along the Murrumbidgee River have been identified. The Department of Primary Industries – Fisheries has developed a statewide online map identifying access to waterways via public lands.

Action 2.4: Work with First Nations/Aboriginal People to improve shared water knowledge

The government will work closely with First Nations/Aboriginal People to improve shared water knowledge and enable Aboriginal-led programs to implement projects informed by Aboriginal knowledge and science. We will also take action to make sure that Aboriginal people have a better understanding of water management frameworks and regulation in NSW.

We will do this by:

- establishing culturally safe mechanisms for 2-way sharing of water knowledge, where appropriate, supported by appropriate mechanisms for data sovereignty that ensure the protection of First Nations/Aboriginal People's intellectual property rights and interests
- delivering programs to improve cultural competency in the water sector
- delivering programs to improve knowledge of water management policies, rules and frameworks in Aboriginal communities.

We will also partner with First Nations/Aboriginal People to develop programs and initiatives that will:

- increase the participation and employment of Aboriginal people 'on the ground' in maintaining the health of land, rivers and wetlands
- provide opportunities at regional and local levels for Aboriginal people to contribute traditional ecological knowledge to the management of land and water resources.

Deliverable	Status	Update
Develop programs and initiatives to improve cultural competency within the water sector.		Since June 2021, Water Infrastructure NSW has delivered Aboriginal cultural onboarding workshops to over 400 staff across the Department of Planning and Environment's water portfolio. This introductory training package is a commitment at the start of our journey to ensure all staff complete role-appropriate training and meet competency requirements for cultural awareness, safety, and engagement.
Develop and deliver culturally appropriate information materials on water management policies, rules and frameworks.		A review of information available on the Department of Planning and Environment's website has been undertaken and new culturally appropriate materials on water management policies and rules are being developed.
Provide support for First Nations/Aboriginal People to navigate the water licensing and approvals framework.		Information on, and application forms for, cultural access licences have been reviewed and new materials to support First Nations/Aboriginal People apply for water licences are being developed.
Involve First Nations/Aboriginal People in the management of environmental water.		The Department of Planning and Environment is developing relationships with Traditional Owner Groups and First Nations/Aboriginal People where water for the environment is managed. The department has developed an annual First Nations watering priorities statement for environmental water.

Action 2.5: Work with First Nations/Aboriginal People to maintain and preserve water-related cultural sites and landscapes

The government will work closely with Aboriginal communities to ensure that:

- regional and metropolitan water strategies appropriately consider First Nations/Aboriginal People's cultural heritage in assessing infrastructure, policy and planning options in each region
- meaningful engagement occurs with First Nations/Aboriginal People upstream and downstream of new infrastructure proposals
- cultural heritage implications of new water policies are considered.

We will also partner with First Nations/Aboriginal People to explore programs and initiatives that will support Aboriginal communities to identify and map water-dependent cultural sites and record cultural water practices, where culturally appropriate.

Deliverable	Status	Update
Embed First Nations and Aboriginal People and their considerations into policy, planning and infrastructure development processes.		<p>In 2021, a draft strategy for delivering Aboriginal community outcomes from water infrastructure programs was released for consultation. This included holding meetings with Aboriginal communities to discuss their aspirations and the draft strategy.</p> <p>First Nations/Aboriginal People engagement plans for water infrastructure programs and projects are prepared and reviewed every 6 months.</p>
Water Infrastructure NSW's First Nations engagement team will lead and facilitate consultation with Aboriginal People on water infrastructure projects, providing opportunities for their wisdom and experience to be considered and incorporated into project decisions.		<p>Water Infrastructure's First Nations Project Engagement team works closely with Aboriginal communities and organisations across NSW. The team leads and facilitates engagement with Aboriginal communities on water infrastructure projects and works closely with project teams to ensure First Nations/Aboriginal People's knowledge is listened to and respected, their voices are heard, and their views considered in project decision-making.</p>

Wilcannia Weir Replacement – Listen, Learn, Adapt and Deliver Together

The Wilcannia Weir was built by hand in 1942 to give the north-western NSW community of Wilcannia a more reliable town water supply. Since the weir was built, water levels have decreased, altering the course and flow of the river and removing it from the community of Wilcannia.

The NSW and Australian Governments are investing \$47 million to build a new Wilcannia Weir to improve river flow management and provide greater water security and long-term town water supply. The project will provide a weir 5 kilometre downstream from the old weir, at a location agreed by the local community during consultation. The start of early works for the new weir, including road upgrade works for construction vehicles, began in December 2021.

Wilcannia is the traditional home of the Barkandji people who continue to have a deep spiritual relationship with the river. In Barkandji, the Darling River is known as the Baaka and the word Barkandji means ‘people of the river’.

Engagement with the local Aboriginal community aims to open up opportunities to work collaboratively on the project to develop employment, training and arts initiatives, as well as supporting broader social, economic and environmental benefits for Wilcannia, its people and surrounds.

WaterNSW and Water Infrastructure NSW worked together with TAFE NSW, the Regional Enterprise Development Institute (REDI.E) and Murdi Paaki Regional Assembly (MPRA) on four training programs for the local community, including Fit for Work, Construction, Hospitality and Tourism, with 20 students graduating in late 2021. Graduates from the TAFE NSW Certificate 1 and 2 in Construction course gained valuable on-the-job experience as part of early works for the weir project, including grading and road formation. Further training in machinery and excavation are planned for 2022.

A new weir for the Wilcannia community means more water can be stored, which will provide a secure source of water during drought. The new weir will be 1 metre higher than the existing weir. Gates and a fishway will allow flows to pass through and fish to travel upstream and downstream, supporting a healthier Baaka–Darling River.

A new recreation area is proposed near the weir, to support fishing, canoeing and picnicking, and the local community are providing feedback about what they want the recreation area to include, such as a walking track, and informal parking. One of the priorities identified by the community is to reuse some of the stones from the old weir at the new weir site.



Image courtesy of iStock, Township, Wilcannia.

Priority 3. Improve river, floodplain and aquifer ecosystem health, and system connectivity

Action 3.1: Consider NSW Long Term Water Plans to protect and enhance ecological systems

The government will work to:

- consider the objectives and targets outlined in the NSW Long Term Water Plans to guide water planning, and to develop equivalent products for coastal regions of NSW, including protecting and enhancing our nationally listed wetlands and internationally recognised sites/species
- improve understanding of the impact of climate change on environmental water management
- engage with stakeholders, including First Nations/Aboriginal People in the implementation and review of NSW Long Term Water Plans.

Deliverable	Status	Update
Consider Long Term Water Plans as the framework to guide the delivery of environmental water and development of management rules including in deliberations by Environmental Water Advisory Groups.		The Department of Planning and Environment provides support to Environmental Water Advisory Groups (EWAGs) to use long-term water plans (LTWPs) to guide annual water use planning. LTWPs are also used to inform NSW Sustainable Diversion Limit Adjustment Mechanism projects, including design of potential flow regimes and guiding assessment of potential environmental outcomes.

Action 3.2: Take landscape scale action to improve river and catchment health

The regional water strategies will identify specific priorities and target programs towards improving land use and land management practices in catchments where these are major contributors to a decline in river and catchment health. We will also examine barriers to land management practices which improve river health.

Deliverable	Status	Update
Finalise 5 regional water strategies and continue community consultation on another 6 regional water strategies that will be finalised by the end of 2022. Regional water strategies will identify key land use and land management problems and options to improve river health in consultation with land management stakeholders.		<p>2021-2022 saw the publication of all remaining draft regional water strategies across NSW, as well as a second round of consultation on 4 regional water strategies with priority actions.</p> <p>The timeframes for finalising the strategies have been adjusted to enable more intensive stakeholder engagement. This reflects the impact that COVID-19 has had on the engagement process, as well as other factors that impact communities' capacity to engage such as the flooding events in the northern coastal regions.</p> <p>Protecting and enhancing the environment is one of the objectives of the regional water strategies. Options to improve river health will be identified in the context of the key challenges and priorities within each region.</p>

Action 3.3: Take action to address threats to native fish

The NSW Government will deliver 3 statewide, catchment scale initiatives to address key threats to native fish populations.

We will:

- implement the NSW Fish Passage Strategy
- address cold water pollution through interventions such as temperature monitoring, new operating protocols and cold water pollution mitigation technology at priority dams where cold water impacts are severe
- invest in fish-friendly water extraction technology at priority sites, guided by the regional water strategies.

Deliverable	Status	Update
Improve fish passage at priority sites as guided by the NSW Fish Passage Strategy.		Six fish passage sites have been completed at a cost of \$11.3 million. Four sites are located in Western NSW, one site in the Namoi region, and one site in the Far North Coast.
Review and update the Cold Water Pollution Strategy and guidelines for management.		Review and update of the Cold Water Pollution Strategy and guidelines for management is expected in 2022–2023, leading to planning and implementation of related works.
Finalise the NSW Diversion Screening Strategy and implement works at priority sites, with a focus in the northern Murray–Darling Basin, to reduce impacts to fish from water extraction.		Finalisation of the NSW Diversion Screening Strategy is expected in 2022–2023. Planning for works at priority sites in the northern Basin has commenced, with implementation to commence in 2022–2023 and expected to be completed by 2025.

Action 3.4: Invest in long-term and effective monitoring, evaluation, reporting and research

The government will:

- implement monitoring, evaluation, and reporting frameworks to track the effectiveness of plans and policies and inform future management actions
- update the River Condition Index across NSW in 2021 after detailed assessments are completed in coastal water sources to provide a baseline for addressing progress of the NSW Water Strategy and the regional and metropolitan water strategies.

Deliverable	Status	Update
Finalise a monitoring and evaluation framework for water sharing plans, and initially target locations with high environmental risk.		<p>The Department of Planning and Environment is currently developing a Water Sharing Plan Evaluation Program that includes:</p> <ul style="list-style-type: none"> • a monitoring, evaluation, reporting and improvement framework • plan prioritisation tool • transferability model • evaluation and monitoring plans. <p>Water sharing plans have been prioritised for evaluation to target effort in areas of high environmental risk.</p> <p>Methods for social, economic, and environmental impact evaluation are being developed. These methods are being tested and applied to 2 water sharing plans – Macquarie Cudgegong Regulated, and Clarence Unregulated and Alluvial as a pilot to inform rollout of the Water Sharing Plan Evaluation Program.</p>
Monitor and report on environmental water delivery and management to inform adaptive management and reporting.		<p>The Department of Planning and Environment reports extensively on the use of water for the environment including reporting on:</p> <ul style="list-style-type: none"> • Basin Plan implementation • annual watering in each valley • individual watering events • water trading. <p>All watering targets and events include monitoring to assess the effectiveness of environmental flows.</p> <p>Monitoring information and research is summarised and integrated into an adaptive decision-making approach to water for the environment.</p> <p>Additionally, annual reviews are undertaken of Pre-requisite Policy Measures and Active Management in the Barwon–Darling, Gwydir and Macquarie.</p>
Publish an updated River Condition Index.		<p>The NSW River Condition Index (RCI) is the primary long-term reporting tool for assessing change in riverine condition. The RCI tool provides a better understanding of the effect of water management decisions. It also allows tracking of changes in conditions for better water management to improve surface water environments. The RCI tool uses inputs from a range of indicators. Work has commenced to update the RCI in 2021–2022. Two pilot areas are being used to test methodologies. After validation the methods will be applied across the state. Target completion date is December 2022.</p>

Action 3.5: Adopt a more intense, statewide focus on improving water quality

The government will:

- continue to monitor and review the NSW Water Quality Objectives across NSW to ensure they reflect contemporary community and environmental values and uses
- define clear roles, accountabilities and frameworks for monitoring, assessing and addressing water quality risks across the state
- ensure the community can access information about water quality.

Deliverable	Status	Update
<p>Implement Water Quality Management Plans as required under the Murray–Darling Basin Plan.</p>		<p>In line with commitments under the Murray–Darling Basin Plan, NSW has completed the water quality management plan report and submitted the report to the Murray–Darling Basin Authority (MDBA). The report will be published on the MDBA's website.</p>
<p>Implement the Marine Estate Management Strategy sub-actions to:</p> <ul style="list-style-type: none"> • review and refine governance arrangements for the management of diffuse water source pollution • review and (where necessary) update the NSW Water Quality objectives in coastal catchments to ensure they reflect contemporary community environmental values and uses. 		<p>In consultation with other agencies, a draft governance framework for diffuse source water pollution has been developed.</p> <p>Proposed revisions to the NSW Water Quality Objectives for coastal catchments have been prepared. Comprehensive consultation with state agencies, local governments, industry and stakeholders is required and this will take additional time.</p>
<p>Continue to support the preparation and implementation of Coastal Management Programs (CMPs) by councils to achieve the objectives of the Coastal Management Act 2016 that may include actions to maintain and improve water quality and estuary health, supported by monitoring and evaluation.</p>		<p>To date, the Minister for Local Government has certified 4 Coastal Management Programs (CMPs) and these are being implemented. Approximately 50 CMPs are being prepared by local coastal councils with technical and financial support from the Department of Planning and Environment. Information and an interactive map on the progress of CMPs is available online.</p>

Deliverable	Status	Update
Prepare a water quality roadmap of roles and responsibilities for water quality management and monitoring across NSW, and consider options to address gaps, remove duplication or uncertainty and improve water quality governance arrangements.		This action has not yet commenced and will be delivered as part of NSW Water Strategy implementation in 2022-2023.
Develop standard, statewide arrangements for the monitoring of extreme events in order to enhance response actions and reduce risks.		The Department of Planning and Environment has drafted a Water Quality Incident Management Plan – Hypoxic Events paper. The operational provisions in the draft management plan were enabled during the recent (late 2021 to April 2022) hypoxic blackwater events that occurred in the northern Basin. The draft Management Plan will updated and reviewed following these events, and published.
Monitor and report on water quality.		WaterNSW continues to undertake regular water quality monitoring.

Action 3.6: An enhanced, statewide focus on sustainable groundwater management

The government will develop and implement an NSW Groundwater Strategy and Action Plan to improve groundwater management across NSW. This strategy will address the challenges and opportunities around sustainable groundwater management and aim to secure and protect groundwater for thriving environments, communities and industries.

Deliverable	Status	Update
Develop a draft NSW Groundwater Strategy for consultation with the community.		The draft NSW Groundwater Strategy has been developed and went on public exhibition in July 2022. Feedback on the draft strategy will be used to inform the development of the final NSW Groundwater Strategy.

Action 3.7: The government will take a community-driven and transparent approach to explore ways to improve the flows between hydrologically connected rivers and valleys across inland NSW

We will:

- develop principles and a clear statement about how NSW will increase connectivity across regions of the Murray–Darling Basin
- explore options to improve connectivity between catchments
- develop decision-making support tools and frameworks to better inform water sharing decisions across connected water resources, particularly in the Murray–Darling Basin
- implement the actions in the NSW Government’s response to the Independent Panel Assessment of the Management of the 2020 Northern Basin First Flush Event.

Deliverable	Status	Update
<p>Release a draft Western Regional Water Strategy which will:</p> <ul style="list-style-type: none"> • propose a definition of connectivity • provide the hydrological modelling evidence base for historical flows in the Barwon–Darling River and the extent to which recent reforms have contributed towards connectivity goals • propose additional connectivity options for further exploration. 		<p>The draft Western Regional Water Strategy was published in June 2022 with a 6-week exhibition period supported by face-to-face and online community consultation and engagement sessions. The draft Western Regional Water Strategy explains the different types of connectivity and proposed a range of objectives that could guide connectivity actions. These objectives were developed with feedback from the Connectivity Stakeholder Reference Group.</p> <p>WaterNSW has developed flow forecasting models for the northern tributaries. These are now in operation. The models include the latest flow data, and data from the first flush event. The operational models forecast flows along the river, taking into account customer demands (water orders), system losses along river sections and travel times. The WaterInsights platform ensures timely, transparent and accessible information on water resources.</p>
<p>North West Unregulated Flow Management Plan target:</p> <ul style="list-style-type: none"> • review the existing targets in the North West Unregulated Flow Management Plan based on the best available science • develop an operational management plan to guide Plan implementation. 		<p>The review of the North West Flow Plan targets was published on the Department of Planning and Environment – Water website in November 2021.</p> <p>This review has been considered as part of the development of connectivity options under the Western Regional Water Strategy. The department will consider developing an operational management plan once the Western Regional Water Strategy is finalised.</p>

Deliverable	Status	Update
<p>Continue to implement the recommendations of the Independent Panel Assessment of the Management of the 2020 Northern Basin First Flush Event, as outlined in the NSW Government response and provide an update report on implementation annually.</p>		<p>Implementation of the recommendations of the Independent Panel Assessment of the Management of the 2020 Northern Basin First Flush Event will continue, with annual implementation reporting to ensure transparency and accountability. An implementation update was published in October 2021.</p>



Image courtesy of Tiarne Green. River Murray, Mildura.

Fish for the Future: Reconnecting the northern Basin project

Australian native fish migrate along rivers to feed, breed, disperse and find homes, and avoid threats like predators and drying habitats. In the northern Basin, the main fish migration pathways are the Barwon–Darling and Border Rivers valleys, which connect cross-border regions, as well as critical links to the southern Basin via the Baaka/Lower Darling.

The Fish for the Future: Reconnecting the northern Basin project aims to address barriers to native fish passage at 22 priority mainstream weir sites along the Barwon–Darling and Border Rivers, including the removal of illegal rock structures and the construction of fishways. Fishways, also known as fish ladders, are structures constructed on or around barriers such as dams or weirs to allow fish to migrate past the barriers either upstream or downstream as part of their natural life cycles.

When fully implemented, Fish for the Future: Reconnecting the northern Basin will create a connected ‘highway’ for native fish such as Golden Perch and Murray Cod, to migrate over more than 2,000 kilometres in the Barwon–Darling and Border Rivers and into Queensland.

The project will provide significant environmental, economic and cultural benefits to the northern Basin, including:

- increased movement of native fish species across the northern NSW Murray–Darling Basin
- enhanced cultural values for First Nations communities
- support for regional economies and local job opportunities during construction
- increased regional tourism opportunities as native fish populations increase
- sustained management of agricultural and water resources with reduced ecological impact.

The project will be delivered in stages. Stage 1 early works are currently being delivered, focusing on sites in the Border Rivers. Stage 2 is in the planning and assessment phase, including consideration of interaction with other planned projects in western NSW.

Fish for the Future: Reconnecting the northern Basin is one of 4 projects being delivered by the NSW Government under the Northern Basin Toolkit – a \$180 million investment in the ecological health of the northern Basin that will create opportunities for local communities, improve river management across the northern Basin and protect water for the environment.

The project is funded by the Australian Government.



Image courtesy of Michael Scotland, Department of Planning and Environment. Fishway, Brewarrina Weir.

Priority 4. Increase resilience to changes in water availability (variability and climate change)

Action 4.1: New actions to improve and apply our understanding of climate variability and change

The government will continue to improve our understanding of climate, including variability and climate change, and ensure that it is applied and accessible to inform decisions across the water sector.

We will:

- include new climate data and risk modelling methods in the NSW Common Planning Assumptions
- provide access to climate risk information for water users, councils and local water utilities, and the community to support towns and users adapt to likely reduced water reliability
- incorporate the new climate data into NSW water models, initially for regional and metropolitan water strategies and modelling of new infrastructure projects
- partner with key stakeholders and industry to develop communities of practice for climate risk modelling, and to promote improved risk management and adaptation
- advocate for use of a single climate risk methodology across the Murray–Darling Basin.

Deliverable	Status	Update
Incorporate new climate data into the development of: <ul style="list-style-type: none"> • 12 Regional water strategies • Greater Sydney Water Strategy and Lower Hunter Water Security Plan. 		New climate data and modelling that improves our understanding of past climate conditions and plausible climate futures has been prepared statewide. Eleven of 12 draft regional water strategies prepared to date have incorporated new climate data, along with the draft Greater Sydney Water Strategy. The draft Murray and Murrumbidgee regional water strategies, however, did not include the outputs from hydrological modelling as it is still under development. New climate data will be incorporated into the Greater Hunter Regional Water Strategy as part of the next review, and implementation of the Lower Hunter Water Security Plan.
Pilot delivery of climate risk data in a format that meets the needs of local water utilities.		Data has been provided to a number of pilot areas for use in developing water security measures to inform Integrated Water Cycle Management Plans. Work will continue in 2022–2023 to make the data for councils available statewide via a data portal.
Determine a methodology and progressively incorporate climate risk data into water sharing plan and environmental water management decision making.		A work program has been developed for this action. Delivery, however, is expected to take longer than initially anticipated and will progress over a several years.

Deliverable	Status	Update
Establish a NSW Community of Practice for water practitioners to share methods, knowledge and resources to improve environmental, economic and social outcomes.		The Office of the Chief Scientist and Engineer has convened a NSW Government Climate Community of Practice. Working groups to further target water modelling and climate change will be established.
Participate in national and Basin wide communities of practice and share learnings from these groups to align and improve decision making.		The Department of Planning and Environment has continued to participate in various national and Basin-wide communities of practice and interjurisdictional working groups.

Action 4.2: Review water allocation and water sharing in response to new climate information

The government will review water allocation frameworks and water sharing plan provisions in response to new extremes in water availability. This will include:

- exploring ‘critical human needs’ and mechanisms to safeguard water for human needs during extreme events, including development of a position on alternative water supplies where water security for towns cannot be guaranteed in extreme events
- exploring risk management approaches for more adaptive water allocation and accounting frameworks
- improving transparency and clarity for all water users about decision making for water allocations.

Deliverable	Status	Update
Publish information explaining the allocation process for each regulated river system.		To help describe the way in which water is allocated to the various priorities and licence types, the Department of Planning and Environment has published Water Allocation Guides on how the water allocation process works in each of the major regulated river valleys.
As part of regional water strategy development, consider and consult on options for how new climate risk information can inform allocation decisions.		Reliability and risk management for water entitlements emerged as a key theme during consultation in the draft regional water strategies. Stakeholders have told us they need to better understand the risks to develop appropriate mitigation strategies and to prepare for a possible future with less water. Work will continue to consider this issue.

Action 4.3: Improve drought planning, preparation and resilience

The government will work with communities across NSW to improve their preparedness for and resilience to drought.

We will:

- develop and maintain the NSW Future Ready Regions Strategy, which will outline the Government's priority actions over the next few years to prepare for and respond to future droughts. The plan will outline key lessons from the recent drought periods in NSW and confirm the impacts drought can have on local communities, small businesses and industry
- ensure that the regional and metropolitan water strategies identify options to diversify water sources and water operations to be more resilient for drought and emergency response
- consider options for improving the management of shared water resources during times of drought and work with other Basin governments to promote improvements
- document our lessons learnt from managing water during the recent drought and ensure these lessons inform future decision making
- investigate options for a more consistent approach to water restrictions across NSW, including the development of common principles.

Deliverable	Status	Update
Implement the Future Ready Regions Strategy.		The Future Ready Regions Strategy was released in June 2021. Work has begun under all commitments in the strategy. The Future Ready Regions Strategy is designed to be flexible and responsive to support an adaptive management approach to implementation.
Finalise 5 regional water strategies and 2 metropolitan water strategies and continue community consultation on another 6 regional water strategies that will be finalised.		<p>2021–2022 saw the publication of all remaining draft regional water strategies across NSW and a second round of consultation on 4 regional water strategies. The draft Greater Sydney Water Strategy was exhibited for public consultation in September 2021, while the final Lower Hunter Water Security Plan was released in April 2022.</p> <p>The timeframes for finalising the regional water strategies have been adjusted to enable more intensive stakeholder engagement. This reflects the impact that COVID-19 has had on the engagement process, as well as other factors that impact communities' capacity to engage such as the flooding events in the northern coastal regions.</p> <p>These strategies consider how much water a region will need to meet future demand and recommend the most effective ways to manage risks to water security, reliability and resilience.</p>
Advocate in Murray–Darling Basin governance forums for changes to current management frameworks to respond to drought conditions.		As an initial focus, the NSW Government has been looking at ways to maximise the utility of the drought reserve in the Menindee Lakes, with the aim of improving the longevity of water stored in the upper lakes and providing improved drought security for the Menindee and Lower Darling community. These arrangements are being discussed bilaterally and in relevant inter-jurisdictional forums including with the River Murray Operations Committee and Water Liaison Working Group. Longer term changes to the operation of Menindee Lakes are being explored as part of the Western Regional Water Strategy.
Prepare and publish summaries that explain how the drought was managed in each valley and the lessons learnt from the measures used.		The 2017–2020 drought was the worst over the historical record from the 1890s until now for most river valleys across NSW, although some were affected more than others. Not all valleys experienced the same severity of drought because inflows to major storages, a measure of water security, varied across the state. The drought snapshots published on the Department of Planning and Environment's website outline how each regulated valley and the Barwon–Darling compared for historical inflows to the major storages, the measures that were applied and the next steps.

Deliverable	Status	Update
<p>Revise the Incident Response Guides for regulated river systems that guide how and when measures were introduced and repealed.</p>		<p>Incident Response Guides for regulated river systems have been updated and were submitted to the Murray–Darling Basin Authority as part of water resource plan schedules for accreditation.</p>
<p>Update the NSW Extreme Events Policy to reflect these lessons.</p>		<p>An update to the Extreme Events Policy has been delayed due to competing policy priorities. The update commenced in May 2022, with a draft updated policy now expected to be completed in December 2022.</p>
<p>Consult with local water utilities, the community and industry about the strengths, challenges and practical considerations of a potential harmonised approach to water restrictions across the state.</p>		<p>Targeted consultation on a draft discussion paper has been undertaken. The Department of Planning and Environment plans broader consultation on the options available, noting that the NSW Government’s ability to influence water restrictions is limited under the current legislative and regulatory framework that underpins the application of water restrictions by water utilities.</p>

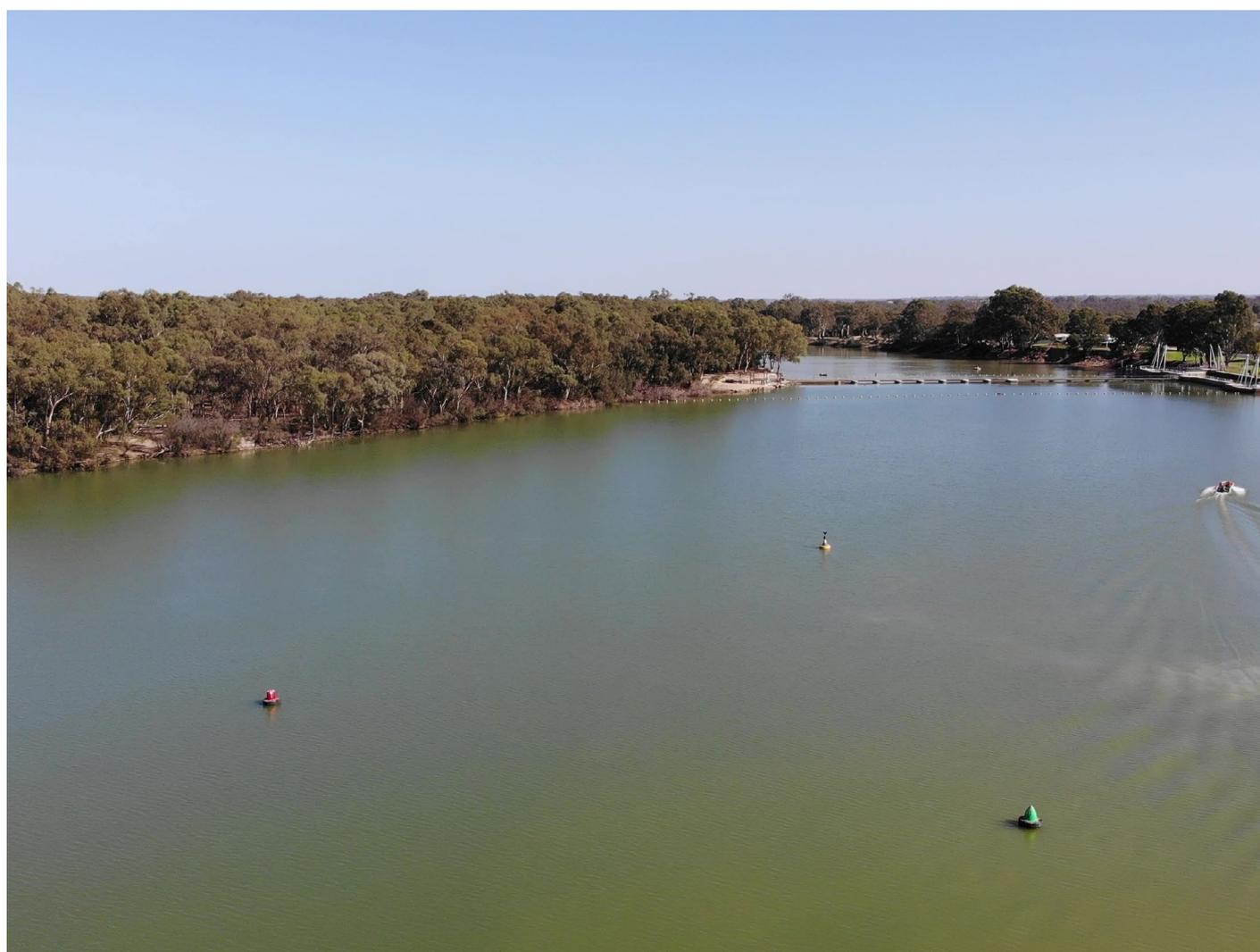


Image courtesy of Wentworth Shire Council. Darling and Murray River junction.

Action 4.4: Better integrate land use planning and water management

The government will better integrate strategic land use planning with water management frameworks and outcomes. We will take steps to:

- establish processes to support communication and early engagement to better inform land use, agriculture and industry investment decisions based on a clear understanding of water availability and constraints, and water allocation risk over the immediate and longer term
- develop new planning policies, if required, to integrate land use and water cycle management decisions
- identify opportunities for the planning system to support water resource health and resilience in a changing climate; for example, through strategic recognition of critical groundwater resources in coastal areas and mitigate impacts from urban development
- improve access to information about water availability to support development
- examine opportunities for information on high value water-dependent ecosystems and cultural values to be considered in land use planning decisions.

Deliverable	Status	Update
Identify opportunities for land use planning frameworks to respond to water management and resilience outcomes in light of climate risk assessments.		The Department of Planning and Environment is finalising a suite of metropolitan and regional water strategies. These strategies will help identify ways in which frameworks for land-use planning could respond to water management and resilience outcomes in light of climate risk assessments.
Align outcomes in regional plans with regional water strategies in their consideration of future land and water use.		The Department of Planning and Environment is doing the first 5-year review of all regional plans to reset priorities and extend the plans from 2036 to 2041. The Illawarra-Shoalhaven Regional Plan was remade in June 2021, and draft plans for the Central West and Orana, New England North West, Hunter, Central Coast, North Coast, South East and tablelands were all exhibited for public consultation in 2021–2022. All remaining regional plans will be finalised in 2022–2023. All regional plans consider regional water management issues and are prepared in accordance with section 3.3 of the <i>Environmental Planning and Assessment Act 1979</i> .
Through the Groundwater Strategy, establish criteria to identify critical groundwater resources and develop spatial products and data to allow for identification and mapping.		The draft NSW Groundwater Strategy was released for public exhibition in July 2022. Feedback from this consultation will be used to inform the development of the final NSW Groundwater Strategy. The establishment of criteria to identify critical groundwater resources will be progressed as part of implementing the final strategy.

Deliverable	Status	Update
<p>Develop guidelines to provide information to applicants and proponents on the requirements for groundwater assessments to support stronger disclosure of data and modelling predictions. This will aim to improve the completeness of applications and transparency of impact, resulting in increased efficiencies and informed decision making.</p>		<p>The Department of Planning and Environment has published Groundwater guideline documents to guide proponents during the preparation of submissions for major projects. The overarching guideline and 3 technical documents address groundwater impacts and risks, water licensing requirements and how to provide relevant data, demonstrating the proposed activity is compliant.</p> <p>The toolkit complements existing industry requirements and was created in consultation with industry experts to ensure it addresses all requirements needed for a mining, quarrying, dredging or infrastructure project submission.</p>
<p>Continue to implement the Rapid Assessment Framework that will make system improvements that increase the efficiency of major project assessments and speed up assessment timeframes while also improving assessment quality, engagement standards and customer service.</p>		<p>The Rapid Assessment Framework streamlines the assessment of major projects gives clear guidance on environmental impact assessment (EIS) and introduces a new Registered Environmental Assessment Practitioners (REAP) Scheme to provide quality assurance for EISs.</p> <p>Changes to the Environmental Planning and Assessment Regulation 2000 made the improvements possible. These changes will be rolled out in 3 stages, with the first stage starting on 1 July 2021.</p>
<p>Work with First Nations/Aboriginal People to understand how cultural values could be identified and considered earlier in land use planning processes.</p>		<p>Engagement with Aboriginal communities and organisations is undertaken from the inception of state-led water infrastructure projects to ensure First Nations/Aboriginal People's knowledge and ideas are captured in land-use planning processes.</p> <p>Water Infrastructure NSW has developed an Aboriginal Cultural Heritage Framework to guide the identification of registered Aboriginal parties with which to consult and engage about cultural values within a project's footprint.</p>

Ground-breaking climate science

The NSW Government is developing 12 regional water strategies which bring together the most up-to-date information and evidence to make sure there is the right amount of water, of the right quality, delivered in the right way to meet the needs of communities, First Nations/Aboriginal people, industry and the environment.

These strategies have been developed using a new approach to understanding past and future climate risk to ensure a more water-secure future.

This new 4-step approach recognises the critical importance of climate risk to NSW's future water supplies and uses risk modelling developed by the Department of Planning and Environment, with advice from the University of Newcastle and the University of Adelaide.

Up until now, many decisions about water-related development and planning in NSW river valleys have been based on a lived experience of climate conditions – that is, what communities going back several generations have experienced and recorded in river flows, rainfall and evaporation (hydroclimatic data).

We have applied a new 4-step approach to better understand past and future climate risk

The approach uses:

- **Historical data** – analysis of the past 130 years of recorded climate data and the climate drivers that influence past and present climate to provide an understanding of the variability of our climatic system.
- **Paleoclimate data** – using scientific methods, we are supplementing this historical record with new paleoclimate data reconstructed from sources like tree rings, cave deposits and coral growth. Combining historical and paleoclimate data gives us over 500 years of climate data.
- **Stochastic methods** – we can then use a stochastic modelling method (which uses a probability approach) based on the statistical characteristics of the new climate data, to help us quantify climate variability. This type of modelling tells us much more about possible climatic extremes and the natural variability in the climate.

- **Climate projections** – we can then apply the NSW Government's climate projections to this new data set to understand the impacts if various climate change scenarios eventuate.

The new Paleoclimate data provides an improved understanding of our current climate. We have also chosen a worst-case climate change scenario, to stress test the behaviour of our systems. Both data sets allow us to test long-term strategic options against a better set of data on current conditions as well as against a worst-case scenario. Testing a wide range of climate risks, from current climatic behaviour to a worst-case climate scenario, means that we can now better understand the possible range of future climate characteristics for the 12 regions in NSW. We can better identify the potential risks to water security in different parts of the state and we can develop specific, targeted actions to mitigate these risks.

While the use of the worst-case climate scenario is considered appropriate for this strategic level assessment, providing an assessment of the range of risks from current through to an extremely dry future, the actions to inform policy, planning and infrastructure include a recognition that further assessments of climate change risk will be required. These assessments will need to consider both the planning horizon and any latest advice on climate scenarios.

This data is being used to investigate the potential benefits and impacts of options for water management outlined in each regional water strategy. The data will also be used by WaterNSW and other agencies to assess the merits of new projects, plans and programs.

Understanding past and future climate risk will ensure the NSW Government is well placed to support a more water-secure future.



Image courtesy of iStock. Agronomist measuring the wind speed, temperature and humidity and solar cell system.

Priority 5. Support economic growth and resilient industries within a capped system

Action 5.1: Provide greater certainty to regional businesses that rely on secure access to water

The government will increase business and investor confidence in regional NSW by:

- developing Special Activation Precincts and Regional Job Precincts
- developing and implementing the regional water strategies to identify the optimal mix of management and infrastructure investment to support jobs and economic growth in regional NSW.

Deliverable	Status	Update
Develop a master plan for each special activation precinct with a long-term vision that will consider the availability of water and how to secure water for industrial use via the water market or other mechanisms.		<p>Master Plans for each Special Activation Precinct (SAP) are being developed, exhibited, finalised and given effect through the new State Environmental Planning Policy (Precincts-Regional) 2021 that commenced in March 2022.</p> <ul style="list-style-type: none"> • Parkes SAP – final Master Plan published in June 2021, with a boundary adjustment approved in March 2022. • Wagga Wagga SAP – final Master Plan released in December 2021. • Snowy Mountains SAP – draft Master Plan exhibited from June to August 2021, and planning to finalise the Snowy Mountains SAP Master Plan in 2022. • Williamtown SAP – draft Master Plan was exhibited from April to June 2022. • Narrabri SAP – draft Master Plan under development. <p>Master Plans for SAPs will continue during 2022–2023.</p>
Work closely with local councils to streamline planning approvals in Regional Job Precincts to provide industry with greater confidence around future investment.		<p>The Regional Job Precinct Program promotes economic growth and employment in key regional precincts in NSW. Four precincts have been prioritised in Round 1 of the program in Albury, Casino, South Jerrabomberra and in the Namoi.</p> <p>During the past 12 months, the Department of Regional NSW has consulted extensively with key industry, community and government stakeholders and an action plan has been developed for each precinct. The action plans describe the planning and investigations that are needed to facilitate growth in the right locations within the precinct. The recommended investigations have now begun, and community engagement will soon take place for a draft master plan for each precinct.</p>

Deliverable	Status	Update
<p>Finalise 5 regional water strategies and continue community consultation on another 6 regional water strategies that will be finalised by the end of 2022 that will identify the optimal mix of management and infrastructure investment to support jobs and economic growth in regional NSW.</p>		<p>2021-2022 saw the publication of all remaining draft regional water strategies across NSW and a second round of consultation on 4 regional water strategies.</p> <p>The timeframes for finalising the strategies have been adjusted to enable more intensive stakeholder engagement. This reflects the impact that COVID-19 has had on the engagement process, as well as other factors that impact communities' capacity to engage such as the flooding events in the northern coastal regions.</p>



Image courtesy of Destination NSW. Yarrangobilly River Walk, Kosciuszko National Park.

Action 5.2: Invest in R&D and new technologies to lift water productivity in NSW industries

The government will look for opportunities to invest in R&D and new technologies to lift productivity and improve the economic return on water in NSW by:

- better capturing and quantifying the contribution of water to economic outcomes at the state and regional level, including the economic value of natural systems, in order to better understand and measure water productivity
- improving water use efficiency and productivity in agriculture, food processing and manufacturing, resources and other industries
- supporting the cost effective development of rainfall independent sources of water supply for key industry sectors, such as desalination and recycling
- supporting the development and improvement of irrigation systems to maximise the productive use of water
- improving understanding of how agricultural land use changes the availability of water (for example, the change to permanent pastures and zero till cropping increases the capture of rainfall, which – in turn – reduces runoff)
- continuing to roll-out the Farms for the Future pilots to provide enabling infrastructure that supports agribusiness productivity and improved water use management and efficiency, including on-farm connectivity and other ag tech solutions
- improving the capacity of NSW primary industries to better plan for and respond to climate change by reviewing existing impact and adaptation research and current activities for each industry, and developing a climate vulnerability modelling approach to capture climate exposure risk and sensitivity in key sectors.

Deliverable	Status	Update
<p>Measure and report the economic value of water to key sectors of the economy across NSW. Metering reforms currently being implemented across NSW will provide accurate data about water use for productive purposes and help quantify the contribution of water to economic outcomes.</p>		<p>Understanding the value of water can support better decisions about the costs and benefits of programs to manage NSW's water resources. This helps guide investment in water management services to ensure they are achieving the desired outcomes and delivering value for money.</p> <p>The productive value of water can be revealed through water markets, or based on the return from productive use of water. Valuation of water should also include non-market values such as ecological, social and cultural values. Department of Planning and Environment – Water and NRAR have completed a number of projects to better understand the value of water in different contexts. Valuations in 2021–2022 include:</p> <ul style="list-style-type: none"> • report commissioned by NRAR to estimate the value of water entitlements in NSW and guidance on the economic contribution of water to the NSW economy • value of water based on gross profit in water-using industries to support development of 12 regional water strategies • water valuation to inform economic analysis of proposed water sharing rule changes in Greater Sydney and the south coast • valuation to help understand the potential benefits of a regional program in NSW to reduce water leakage • value of groundwater to the NSW economy. <p>The NSW Government will continue to analyse and record values of water for different purposes, including non-market values, in a water value evidence bank. This data will improve our analysis of the impacts and benefits of water management activities to deliver value-for-money outcomes.</p>

Deliverable	Status	Update
<p>Report on progress and completion of funded R&D projects, including Water use in Agriculture Inventory and Trends & drivers of water productivity in Australian cotton.</p>		<p>The Department of Primary Industries has been involved in monitoring water use and water productivity across the cotton industry since 2006.</p> <p>The benchmarking of water productivity in Australian cotton has been co-funded with the Cotton Research & Development Corporation and identifies the change in water productivity by cotton growers over recent decades. This helps growers make water management decisions and provides a basis for the industry to communicate its sustainability. The current project will operate until 30 June 2025.</p>
<p>Support the resources sector to improve its water use and increase transparency.</p>		<p>A Water in Mining Advisory Group has been established to create an inter-agency forum and a clear point of contact within the NSW Government for water-related matters for mining and exploration companies.</p> <p>Additionally, a collaborative project has started to enhance water reporting and subsequently water-use decision-making for the NSW resources sector. This will lead to an improved understanding of how water is used, how efficiently it is used, and more informed decisions about water allocation during future droughts. Data compilation and analysis is underway and will provide information on the types of data currently submitted by mining operations and any variability and gaps in the data reported to government.</p>
<p>Pilot recycled water opportunities for industrial and agricultural uses, e.g. in the Western Parkland City's proposed Intensive Horticultural Production Zone.</p>		<p>Sydney Water is currently planning a non-potable recycled water supply for the Mamre Road and Aerotropolis Initial Precincts. This scheme will integrate stormwater harvesting and wastewater recycling to provide a drought-secure water supply for industry uses, toilet flushing, urban greening and cooling and the protection of local waterways.</p> <p>Sydney Water is also partnering with Western Sydney University and Hawkesbury City Council to develop a circular utility model for Western Sydney University's proposed Agritech Hub, which will include intensive horticulture. This proof of concept aims to integrate water recycling, organic waste management, bioenergy production and food production.</p>

Action 5.3: Improve the operation and transparency of water trade in NSW

The government will take the following actions to improve the operation of the NSW water market.

We will:

- improve the transparency of trading activities and access to information about these activities
- review the need for a regulatory framework covering water brokers and intermediaries to improve confidence in how the market is regulated.

Deliverable	Status	Update
Update water trade application forms and systems to capture additional information on the price and purpose of trades.		<p>Water trade forms and systems have been updated to capture additional information such as price and purpose information. Further system improvements to make trade information more accessible to the public are currently being investigated.</p> <p>In 2021, WaterNSW released a Murrumbidgee Inter-Valley Trade (IVT) option paper seeking feedback on improving transparency, efficiency and equity of the IVT account and is currently working toward improving the overall process for market participants.</p>
Consider the Australian Competition and Consumer Commission's recommendations in its Murray–Darling basin water markets inquiry report and work with stakeholders and other governments in the Murray–Darling Basin to determine appropriate reform.		<p>The Australian Government appointed a Principal Adviser to develop a roadmap for implementing water market reform in the Murray–Darling Basin. The Principal Adviser is supported by an Advisory Group of technical experts and water market stakeholder representatives.</p> <p>The Principal Adviser will provide a roadmap for the phased implementation of reform by September 2022.</p> <p>NSW is working closely with the Principal Adviser, and other Basin governments, to ensure the roadmap represents practical and cost-effective reform measures that will improve confidence in water markets in the Murray–Darling Basin. NSW Government consultation with the community and key stakeholder groups in 2020 and 2021 about their views on the Australian Competition and Consumer Commission recommendations and priorities for reform has informed this process.</p> <p>Consultation in 2021 included a public webinar hosted by the NSW Government in April and targeted sessions in May and June with the following groups:</p> <ul style="list-style-type: none"> • Australian Water Brokers Association and water traders • Irrigation Infrastructure Operators • NSW Farmers • Murray Regional Strategy Group • Nature Conservation Council.

Action 5.4: The government will improve infrastructure investment decisions and outcomes through strategic long-term planning

We will:

- identify infrastructure and operational management options for each region in NSW to improve reliability for all water users and the environment through the development of 12 regional water strategies and 2 metropolitan water strategies for Greater Sydney and the Lower Hunter
- monitor and report on the implementation of all 14 water strategies.

Deliverable	Status	Update
Finalise 5 regional water strategies and continue community consultation on another 6 regional water strategies that will be finalised by the end of 2022 that will identify infrastructure and operational management options for each region in NSW to improve reliability for all water users and the environment.		<p>2021–2022 saw the publication of all remaining draft regional water strategies across NSW and a second round of consultation on 4 regional water strategies.</p> <p>The timeframes for finalising the strategies have been adjusted to enable more intensive stakeholder engagement. This reflects the impact that COVID-19 has had on the engagement process, as well as other factors that impact communities' capacity to engage, such as the flooding events in the northern coastal regions.</p>

Action 5.5: Investigate causes of underuse and develop options to bring use back up to cap

The government will further investigate issues of water availability and consult with the community through the regional water strategies for the Murrumbidgee and Murray valleys.

Deliverable	Status	Update
Research and consult with stakeholders to better understand issues of water availability and usage through the regional water strategies for the Murrumbidgee and Murray valleys.		<p>The draft Murray and Murrumbidgee Regional Water Strategies that were exhibited in May and June 2022 include an option to provide evidence on possible causes of any underuse and for an opportunity to use water up to, but not exceeding, the sustainable diversion limit. Work to understand this issue will continue as these regional water strategies are developed through 2022 and into 2023.</p>

Safe and Secure Water Program

Every person in NSW has a right to expect access to safe drinking water for use at home and water security in their communities. In regional NSW, Local Water Utilities (LWUs) are responsible for planning and delivering safe, secure, sustainable and affordable water supply and sewerage services to approximately 1.85 million residents.

The Safe and Secure Water Program (SSWP) provides co-funding to councils for eligible water and sewerage projects in regional NSW. The key outcomes of the Safe and Secure Water Program are to improve public health, water security, environmental outcomes and social benefits.

Since it started in 2017, the program has delivered 26 completed projects across the state, supporting projects in large regional centers such as Wagga Wagga with a population of over 65,000 and small remote communities such as White Cliffs with a population of 107.

The NSW Government works in partnership with the 92 local water utilities to ensure all NSW communities have safe, secure and sustainable water supply and sewerage services. Funding is prioritised to regional communities facing the most significant risks to water and wastewater services.

The NSW Government has committed \$248 million to 121 projects across 68 LWUs that are currently being delivered which will provide:

- **Water security:** A secure water supply to 446,000 people across 87 communities that were previously at high risk of running out of water
- **Water quality:** High-quality drinking water to 171,000 people across 19 communities where water quality does not meet the Australian Drinking Water Guidelines
- **Environmental outcomes:** Improved environmental outcomes to 134,000 people across 24 communities.

From the 270 kilometre pipeline from Wentworth to Broken Hill to the Bundarra sewerage scheme and the Bourke water treatment plant, the impact of Safe and Secure Water projects goes beyond providing access to water and vital services.

Investing in water and wastewater infrastructure is also unlocking economic potential across rural and regional NSW by providing the services necessary to support population growth and business development.

The program is contributing to:

- a sustainable, clean and resilient economy
- quality of life, ensuring NSW is the best place to live, work and raise a family regardless of postcode
- modern government, providing accessible, affordable and world class services
- growing the NSW economy through job creation, new industries, and investment attraction.



Image courtesy of iStock. Warragamba Dam, Warragamba River.

Priority 6. Support resilient, prosperous and liveable cities and towns

Action 6.1: Increase resilience to changes in climate and water availability in Greater Sydney and the Lower Hunter

The Government will release consultation drafts of the Greater Sydney Water Strategy and Lower Hunter Water Security Plan by the third quarter of 2021. After community feedback, the strategies will be finalised and implementation plans will be published.

Deliverable	Status	Update
Release a draft Greater Sydney Water Strategy and Lower Hunter Water Security Plan to consult with the public and key stakeholders in 2021.		The draft Greater Sydney Water Strategy and Lower Hunter Water Security Plan were released for public exhibition in 2021.
Finalise and publish both strategies and implementation plans in 2022, informed by what we hear from consultation.		The final Lower Hunter Water Security Plan was published in April 2022. The Greater Sydney Water Strategy is in the process of being finalised, considering feedback received during consultation on the draft.

Action 6.2: Work collaboratively with local water utilities to reduce risks to town water supplies

The government will continue to work collaboratively with local water utilities to improve organisational arrangements and reduce risks to town water supply service provision, with the aim of achieving the following outcomes:

- safe, secure and sustainable water supply and sewerage services, managed by local water utilities in an efficient and customer-focused manner
- reaffirmed commitment to council management and ownership of water supply and sewerage service provision
- clarity on sharing of risks between council local water utilities and the NSW Government
- improving and supporting councils' ability to manage strategic urban water priorities and risks.

Deliverable	Status	Update
Continue to regulate and support regional NSW's local water utilities in their provision of safe, secure and sustainable water supply and sewerage services.		Local water utilities are responsible for delivering safe, secure, efficient, sustainable, and affordable water supply and sewerage services to 1.85 million people in regional NSW. They protect public health and the environment and support economic development and liveability. The Department of Planning and Environment, along with other local water utility regulators, provides expert strategic advice and support to local water utilities in their delivery of water supply and sewerage services for healthy and resilient communities. The department is also responsible for overseeing local water utilities through its regulatory and assurance function. From 1 July 2022, a new Regulatory and assurance framework for local water utilities applies to local water utilities in regional NSW. It was designed in collaboration with the sector through the Town Water Risk Reduction Program (see Action 6.3).

Action 6.3: Deliver a new Town Water Risk Reduction Program

The Department of Planning and Environment, in collaboration with NSW Health, the Environment Protection Authority, the Office of Local Government and Regional NSW, will implement a 2-year Town Water Risk Reduction Program in partnership with councils and local water utilities.

This new program will:

- develop and implement an improved regulatory framework for local water utility strategic planning, pricing and major asset approvals that is focused on outcomes, based on risk and the maturity of local water utilities, and is transparent, coordinated and accountable
- enhance local water utility performance, risk and maturity monitoring to help the department regulate and support utilities in a way that is based on risk and the maturity of local water utilities
- develop a more effective framework for coordinating intelligence, regulatory and policy objectives and activities between the department and its co-regulators
- identify potential options to address skills shortages in the sector
- explore the pros and cons of alternative funding models, including a needs based community service obligation funding model
- encourage a greater focus on joint and regional solutions in utility strategic service planning – including exploring where local water utilities could benefit from support provided by state-owned water corporations – and improved knowledge sharing between utilities and agencies.



Image courtesy of Destination NSW. Township, Narrandera.

Deliverable	Status	Update
<p>Establish a dedicated team resourced for 2 years to work in partnership with council, local water utilities to develop and implement long-term solutions to the most fundamental barriers within state and local government that prevent effective and strategic risk management in urban water services in regional NSW.</p>		<p>In December 2020, a dedicated Town Water Risk Reduction team was established within the Department of Planning and Environment with accountability to drive partnership and implement solutions, supported by a stakeholder advisory panel.</p> <p>Key elements of the program include:</p> <ul style="list-style-type: none"> • identifying long-term solutions to water and sewerage service challenges and risk in regional towns • a commitment to listen – capturing stakeholder input at every stage, providing flexible feedback options, and adopting formal processes to document and address feedback. • collaborative design – leveraging existing local government sector expertise and success, designing and refining solutions in partnership with sector stakeholders, establishing feedback loops so stakeholders can tell the team if we are not meeting these standards. <p>Through the Town Water Risk Reduction Program, 4 key opportunities have already been realised:</p> <ul style="list-style-type: none"> • supporting councillors as utility decision-makers – utilising for the first time input from experienced councillors and developing new resources for councillors’ critical water responsibilities. Resources included videos, case studies, induction resources and handbooks developed with Local Government NSW and the NSW Water Directorate • implementing the roadmap to an improved regulatory framework for local water utilities – a new, co-designed regulatory regime is transforming the department to a modern, outcomes-focused regulator of infrastructure approvals, inspections, strategic planning and performance monitoring. Regulators are now working together to avoid duplication • addressing critical gaps in the national water skills market – a Draft Skills Action Plan has been developed jointly between water and training sectors to address demand and supply side opportunities to attract and retain accredited water operators, especially in regional NSW • new initiatives enabling utilities to more quickly address risks – leveraging the expertise and resources of state-owned WaterNSW, joint organisations and other entities to manage dam safety, trade waste, catchment, water quality and asset management risks.

Deliverable	Status	Update
<p>Co-design through workshops and working groups, an improved regulatory framework for local water utilities, including making systemic improvements to the requirements for Local Water Utility strategic planning (Integrated Water Cycle Management) by July 2022.</p>		<p>The regulation and assurance framework for local water utilities was implemented on 1 July 2022.</p> <p>The framework represents a significant change to how the activities of local water utilities have been reviewed, regulated and supported in the past. This is centred on the Department of Planning and Environment’s commitment to a stronger partnership approach and culture that aims to empower and enable local water utilities to address risks and strategic challenges effectively and efficiently based on locally developed plans and management systems.</p> <p>The framework was designed in collaboration with the local water utility sector. Initially, over 260 stakeholders from across the local water utility sector participated in virtual and regional workshops to discuss the problems stakeholders saw with the department’s existing regulatory framework and approach. They collaborated on potential solutions and a possible path forward. During workshops, a roadmap was developed that sets out the actions for the department to improve the regulatory framework for local water utilities. The department collaborated with working groups from across the sector to design the framework. A consultation draft regulatory framework for local water utilities was released in March 2022. Sector feedback was used to refine the framework, resulting in the release of the final regulatory and assurance framework for implementation on 1 July 2022.</p>
<p>Work with the sector to explore the pros and cons of alternative funding models, including a needs-based Community Service Obligation (CSO) funding model.</p>		<p>The Department of Planning and Environment is committed to working with the sector on exploring funding models for local water utilities, including a needs-based CSO funding model.</p> <p>To get the solution right, a 2-stage approach has been adopted. Stage 1 is gathering information about the financial needs and capacity of diverse local utilities to meet their service obligations in their local circumstances.</p> <p>This evidence base will inform Stage 2, which will look at alternate funding models that are fit for purpose to support local water utilities to meet service expectations.</p> <p>The NSW Government’s policy position is that there shall be no forced amalgamations and that councils will continue as the owners of their water and sewerage assets.</p>

Action 6.4: Continue to deliver the Safe and Secure Water Program

The government will continue to deliver the Safe and Secure Water Program, co-funding solutions to high priority water service risks and strategic service planning. The NSW Government will invest more than \$500 million over the next 8 years to support local water utilities reduce risks in urban water systems through the Safe and Secure Water Program.

Deliverable	Status	Update
Invest more than \$500 million over the next 8 years to support local water utilities reduce risks in urban water systems through the Safe and Secure Water Program.		The NSW Government is on track to invest more than \$500 million over the next 8 years to support local water utilities reduce risks in urban water systems through the Safe and Secure Water Program (SSWP). The SSWP is currently funding over 120 projects across 68 local water utilities that will improve public health, water security and environmental outcomes while also delivering social benefits.



Image courtesy of iStock. Clarence River, Grafton.

Action 6.5: Continue to work with suppliers of drinking water to effectively manage drinking water quality and safety

The government will support suppliers of drinking water by:

- continuing to support water utilities to assess water quality risks and implement Drinking Water Management Systems, and working closely with water utilities on drinking water quality management issues, risks and incidents
- providing guidance and support to private water suppliers and water carters on managing drinking water safety in their operations.

Deliverable	Status	Update
Continue to support water utilities to assess water quality risks and implement Drinking Water Management Systems.		<p>NSW Health continues to support water utilities to assess water quality risks and implement Drinking Water Management Systems.</p> <p>Twenty one drinking water management system implementation projects have been undertaken, including audit pilots. The audit pilots helped to finalise the NSW Guidelines for Review and Audit of Drinking Water Management Systems. NSW Health also supported the major utilities in numerous risk assessments for drinking water and recycled water.</p>
Continue to provide guidance and support to private water suppliers and water carters on managing drinking water safety in their operations.		<p>NSW Health continues to provide guidance and support to private water suppliers and water carters on managing drinking water safety in their operations.</p> <p>Public Health Units have provided advice and reviewed quality assurance programs from private water suppliers across NSW.</p>
Improve consistency of drinking water quality regulation and incident management for local water utilities.		<p>NSW Health, in collaboration with the Department of Planning and Environment, supported drinking water suppliers to manage events and incidents, including during the March 2022 flooding where there were multiple incidents running at the same time across NSW.</p>
Continue to provide expert advice, training and support to water utilities on drinking water quality management.		<p>Expert advice, training and support is provided to water utilities on drinking water quality management.</p>

Action 6.6: A new statewide Water Efficiency Framework and Program

The government will implement a statewide Water Efficiency Framework and Program for urban water in 2021 following consultation with key stakeholders, including water utilities.

The framework and program will:

- involve collaboration between all levels of government, water utilities, the private sector and the wider community
- focus on building water efficiency capacity, gaining a greater understanding of water use, improving the evaluation of water efficiency initiatives and increasing private sector involvement
- consider the total water cycle (from water supply through to wastewater treatment and reuse or discharge to oceans and waterways)
- embrace adaptive management and continual improvement and provide clear governance
- provide a clear statement of NSW Government policy and messaging of the need to support and invest in water efficiency across all sectors
- consider the effectiveness of the Building Sustainability Index (BASIX) in driving and sustaining water efficiency.

Deliverable	Status	Update
Consult on the draft Water Efficiency Framework with local water utilities and the community and commence roll-out in metro and regional areas.		<p>Initial consultation on the draft Water Efficiency Framework has been undertaken with water utilities.</p> <p>The statewide Water Efficiency Program has numerous focus areas and related program initiatives including the regional water leakage reduction program, Washing Machine Replacement Trial and Smart Approved Water Mark program.</p>

Action 6.7: Proactive support for water utilities to diversify sources of water

The government will support water utilities to diversify sources of water including groundwater, stormwater harvesting and recycling. This will include progressing relevant regulatory reform and community acceptance campaigns to help increase the uptake of diverse water sources with the potential to increase water security and resilience for towns and communities.

Deliverable	Status	Update
Ensure all metropolitan water strategies, regional water strategies and water management guidance take an 'all options on the table' approach to water planning. Provide information to local water utilities to improve understanding of the planning and lead in times required should alternate water sources to be considered.		<p>The development of water strategies seeks to identify the right mix of policy, operational and infrastructure options, including consideration of sources that do not rely on rainfall.</p> <p>2021–2022 saw the publication of draft regional and metropolitan water strategies across NSW.</p>
Work with local water utilities and identify policy and regulatory barriers to recycled and stormwater use and commence the development of a policy framework for the regulation of purified recycled water and storm water harvesting consultation with water utilities.		<p>The Department of Planning and Environment has developed an engagement framework to collaborate with utilities, regulators and industry experts on the policy and regulatory barriers to recycled water. Consultation with these stakeholders began in June 2021. As a key step in developing a responsive policy framework, the department will give the NSW Government a report on removing the policy and regulatory barriers to the acceptance and greater adoption of recycled water. This will include context from the relevant literature. A review of current regulatory settings and challenges for stormwater capture and use has also began.</p>
Identify opportunities to share and learn from diversification projects, enabling peer to peer information sharing.		<p>New initiatives have been established as part of the Town Water Risk Reduction Program that enable utilities to work collaboratively with state-owned WaterNSW, joint organisations and other entities to manage dam safety, trade waste, catchment, water quality and asset management risks.</p>

Action 6.8: Investigate and enable managed aquifer recharge

The government will develop a policy that sets out the framework for managed aquifer recharge (MAR) in NSW and identify where it is technically and economically viable.

We will:

- identify and implement the legislative changes, accounting, assessment and approval processes that are needed to enable MAR to be implemented
- provide guidance on where MAR could be a feasible option given the scientific and engineering challenges and potential environmental implications, particularly for those locations where supplies are vulnerable or where demand is high compared to supply
- collaborate with research institutions to ensure we have the latest scientific information available to government, the wider community and industries.

Deliverable	Status	Update
Design an overarching policy framework for MAR in NSW, including the rules and requirements under which MAR in NSW could operate.		Preliminary work to develop an overarching policy framework for MAR has begun. This has highlighted the complexity of the work. The work will progress in stages as part of NSW Water Strategy implementation in 2022–2023.



Image courtesy of Department of Primary Industries. Blowering Dam, NSW.

Action 6.9: Promote and improve Integrated Water Cycle Management

The government will promote Integrated Water Cycle Management through the NSW planning system and through water management arrangements. All regional and metropolitan water strategies are developed based on an integrated water cycle management approach.

Deliverable	Status	Update
Develop and implement all regional and metropolitan water strategies based on an Integrated Water Cycle Management Strategy (IWCM) approach.		Regional and metropolitan water strategies bring together the most up-to-date information and evidence with all the tools we have – policy, planning, behavioural, regulatory, technology and infrastructure solutions – in an integrated package that is based on the best evidence and that balances the needs of different water users. 2021–2022 saw the publication of draft regional and metropolitan water strategies in NSW.
Finalise the Design and Place State Environmental Planning Policy that gives effect to place based consideration of integrated water cycle management. This will be underpinned by a Public Space and Urban Design Guide that will provide design guidance and criteria for large-scale developments on integrated water cycle management.		Following extensive consultation with industry and stakeholder groups, the NSW Government will not introduce the State Environmental Planning Policy for Design and Place.
Make system improvements to the regulatory framework and guidance and support to enable local water utilities to implement a comprehensive IWCM approach.		<p>The Department of Planning and Environment is making significant changes to the regulation, assurance and support frameworks for local water utilities through the delivery of the Town Water Risk Reduction Program and related actions. A draft regulatory framework was released for public consultation on 31 March 2022 with the final regulatory and assurance framework began on 1 July 2022. The department is currently planning the transition and implementation, as well as starting organisational changes to make sure it is best placed to continue its support for the water utilities sector in NSW.</p> <p>The draft regulatory framework includes detailed, fundamental changes to local water utility strategic planning and identifies the ways in which the department will support this planning.</p>

Action 6.10: Enable private sector involvement in the NSW water sector

The government will finalise reforms to the *Water Industry Competition Act 2006* and Water Industry Competition Regulation to support involvement of the private sector in the supply of water and wastewater services.

Deliverable	Status	Update
Assess feedback from targeted consultation with key stakeholders to inform the final amendments to legislation and regulation.		The <i>Water Industry Competition Amendment Act 2021</i> was passed by the NSW Parliament in October 2021.
Develop a new Water Industry Competition Regulation and place on public exhibition.		A new Water Industry Competition Regulation is being drafted and will be released for public consultation in the second half of 2022.

Action 6.11: Foster the circular economy in our cities and towns

The government will partner with councils, water utilities, research organisations, the private sector and communities to pilot innovative urban water management that improves resource efficiency and recovery, and contributes to working towards a net zero emissions future.

Deliverable	Status	Update
Release the NSW Waste and Sustainable Materials Strategy 2041.		The NSW Waste and Sustainable Materials Strategy , released in 2021, outlines the actions the NSW Government will take over the next 6 years – the first phase of the strategy. These actions are backed by \$356 million in funding to help deliver priority programs and policy reforms.
Continue to deliver the Waste Less, Recycle More Program.		The Waste Less, Recycle More program provided funding for business recycling, organics collections, market development, managing problem wastes, new waste infrastructure, research and development, support for local councils and programs to tackle illegal dumping and litter. The program concluded on 30 June 2022 as part of the transition to the implementation of the NSW Waste and Sustainable Materials Strategy.
Give effect to integration of Net Zero principles and circular economy through the proposed Design and Place State Environmental Planning Policy.		Following extensive consultation with industry and stakeholder groups the NSW Government will not introduce the State Environmental Planning Policy for Design and Place.

Statewide Water Efficiency Framework and Program

Better valuing our precious water resources is an important message in the NSW Water Strategy, with ongoing water conservation practices identified as a key part of managing the current and future water needs of NSW communities.

The NSW Government is consulting with water utilities, local government, industry leaders and the wider water sector to develop a statewide Water Efficiency Framework and Program. A key aspect of the program is to support water efficiency through a partnership model, including working with local water utilities to address network leakage and water loss.

The Department of Planning and Environment is also exploring new ways to work with the community to ensure NSW has secure, reliable water sources and to build future resilience to climate change and droughts. Developing and taking up opportunities to use water more efficiently can also help reduce potential flow-on costs to the community for additional water infrastructure.

In April 2022, the NSW Government, in collaboration with Sydney Water and Hunter Water launched the state's first pilot Washing Machine Replacement Program for 3,000 eligible social housing tenants. This allowed them to replace their old top loader washing machines with a more water and energy efficient front-loading washing machine from only \$150.

The initial pilot program was open to eligible Land and Housing Corporation and Aboriginal Housing Office tenants from across 43 local government areas. The program helps residents to reduce their annual cost of living expenses, with an estimated saving on household electricity bills and detergent costs of around \$220 to \$245 and a saving of around 25,000 litres of water each year per machine.

Following the success of the first pilot program, a second program was launched in June 2022. This second program was expanded statewide to all tenants within social and Aboriginal housing, including those managed by community housing providers, extending eligibility to a further 90,000 NSW households.

The Washing Machine Replacement Program demonstrates the positive effect that using water more efficiently can have on both the environment and cost of living for NSW residents.



Image courtesy of iStock. Young family loading a washing machine.

Priority 7. Enable a future-focused, capable and innovative water sector

Action 7.1: Pilot new technologies to increase our water options

The government will partner with water utilities, research organisations, the private sector and communities to pilot new technologies and sources of water; for example, onsite household grey water reuse technologies.

Deliverable	Status	Update
<p>Pilot a smart greywater recycling and smart meter system (Hydraloop). Smart meters and loggers will be installed in up to 250 homes to capture and analyse high resolution data to inform water demand forecasting, water efficiency programs and water restriction effectiveness, and approximately 30 grey water recycling systems will be trialled aiming to recycle 30% of household water use.</p>		<p>The Department of Planning and Environment has partnered with Sydney Water and the community to install high resolution water meters and loggers on homes to gather data about how people use water within their homes and where the water is used – indoors versus outdoors, toilets and showers, and so on. To date, 106 members of the community have agreed to participate and there is a target of 250 homes by the end of 2022.</p> <p>Sydney Water is leading a trial to install a grey water system called Hydraloop in residential and commercial properties. The Hydraloop greywater recycling system treats wastewater from baths and showers. The treated water is clean, disinfected recycled water suitable for flushing toilets, watering gardens, and topping up pools. Systems are now in place in 4 new social housing dwellings in Glebe, ready for connection to plumbing. The best regulatory pathway has also been determined for long-term commercial use of the units.</p>
<p>Encourage market innovation to improve the coverage, choice and cost of water metering and telemetry technology.</p>		<p>The Department of Planning and Environment has held regular supplier and installer forums to inform metering requirements and also track issues such as supply bottlenecks. Suppliers and installers have attended roadshows to improve their awareness and engage with water users. The department and WaterNSW have been working together to enhance telemetry coverage, including identification of satellite solutions, and working with the industry to develop telemetry products such as Local Intelligence Devices.</p>

Action 7.2: Collaborate to harness new research, innovation and technology

The government will collaborate with government, research and industry partners to harness technology for measuring, monitoring and reporting to drive the sector and system outcomes. Including:

- universal metering and telemetry for non-urban water take
- comprehensive and reviewed/enhanced hydrometric network, switching from manual read to telemetry
- interoperability of licence and accounting frameworks
- increased capability in satellite imagery observations
- integration of artificial intelligence and machine learning
- contribute to a digital twin (model) for Sydney
- open access to models, spatial data and derivative products
- effective statewide water data and systems governance.

Deliverable	Status	Update
Maintain a water science strategy and prospectus that provides sector wide guidance on future science, research and development.		A water science strategy is published on the Department of Planning and Environment's website and is supported by annual business planning.
Initiate, develop and deliver science partnerships in support of enhanced water resource management outcomes with universities, research organisations, industry and the community.		<p>The Department of Planning and Environment publishes research prospectuses for surface and ground water science to enable collaboration in water management in NSW. Groundwater research priorities were published in March 2022.</p> <p>Available water research projects are published on the department's website.</p> <p>An exploratory research project was completed in 2021 by the Department of Planning and Environment, in collaboration with the NSW Smart Sensing Network, Australian National University, Macquarie University, the University of New South Wales and the University of Sydney, titled 'Where is All the Water?'. This project helps NSW Government agencies and other organisations that want to improve their water management overcome gaps and discrepancies in data about water assets, and provides a research platform for integrating different types of sensors and the data analytics used to aid modelling, predictions and decision-making.</p>

Action 7.3 Invest in water sector workforce and capability

The government will:

- develop an NSW Water and Wastewater training strategy with local water utilities to understand skills shortages and the types of initiatives required to address these
- invest in our future water workforce, including through education, training, cadet and graduate programs
- promote the important societal contribution that water management makes through creating jobs with purpose and meaning.

The new Town Water Risk Reduction Program (Action 6.3) will play a leading role in helping councils and local water utilities to improve skills and capability and access the expertise of the wider water sector.

Deliverable	Status	Update
Partner with Local Water Utilities and the training sector to commence development of the Water and Wastewater Training Strategy.		<p>Skilled and competent operators are vital to provide essential water and sewerage services in regional NSW and to manage drinking water quality.</p> <p>Currently there is an acute lack of trained operators in NSW. The NSW Government understands there are up to 200 water operators in regional NSW that are seeking access to accredited operator training each year and cannot access training because there are not enough registered training organisations (RTOs) and trainers offering this.</p> <p>The Town Water Risk Reduction Program is working in partnership with Training Services NSW, the training sector, and the local water utility sector to address both supply and demand challenges to increase the skills of existing operators, attract more operators into the sector and increase employment and jobs in regional NSW.</p> <p>The draft water industry skills and training action plan was published in December 2021. The government is implementing the actions, including the Water Operations Skills and Training Strategy, which has begun with leadership from Training Services NSW.</p>
Identify and reduce barriers for local water utilities to work together and share resources for training and development.		<p>The Town Water Risk Reduction Program Skills and Training focus group meets monthly and provides a platform to exchange information, promote collaborations and identify opportunities where the program can support and catalyse the training sector.</p> <p>In response to feedback from the local water utility sector, the Town Water Risk Reduction Program has developed a suite of materials to raise awareness of the risks in water management and the roles and responsibilities for councillors and other decision-makers in regional NSW water utilities.</p>
Identify registered training organisations to offer operator training in regional NSW to address current critical shortages and to ensure a sustainable and competitive training market in the future.		<p>The NSW Government has engaged with existing and potential registered training organisations providing operator training in NSW to understand their concerns and any barriers to their participation or growth in the market.</p> <p>A major entry barrier for RTOs is the high costs of training and assessment materials. This is a live issue across Australia, and the government is collaborating with the national water sector to source, develop and make available high-quality training materials that cover the diverse range of required skills across different technologies.</p> <p>A pilot is currently under way with Orana Water Utilities Alliance to map competencies and skills for operators across the urban water cycle, develop training needs analysis for each utility in the Alliance and identify training gaps and attract training providers.</p>

Deliverable	Status	Update
<p>Explore options for providing greater opportunities for employment of First Nations/ Aboriginal People in the water sector.</p>		<p>A memorandum of understanding between Water Infrastructure NSW and TAFE NSW was signed in December 2021, beginning a collaboration that focuses on educational and training opportunities for First Nations/ Aboriginal people to support employment readiness.</p> <p>Water Infrastructure NSW has also begun a tailored internship program, and is exploring opportunities for project teams to work with local university hubs to fund outreach sessions on science, technology, engineering and maths (STEM) and water-related training opportunities.</p>
<p>Provide sponsored traineeships for regionally based First Nations people to secure certification for meter and telemetry installation.</p>		<p>NSW is delivering a water metering traineeship program for First Nations Australians, with funding support from the Australian Government. Up to 16 Aboriginal people will be supported to undertake a paid 2-year traineeship in water metering and irrigation to become certified meter installers. The program will increase representation of Aboriginal people working in the water sector in NSW. The tender for delivering this program has been awarded, and businesses to host trainees and the trainee participants are currently being identified.</p>
<p>Develop resources for councillor awareness and training about water and sewerage services and risks.</p>		<p>The Department of Planning and Environment has developed a suite of materials to raise awareness of the risks in water management and roles and responsibilities of councillors in regional water management.</p> <p>The materials were developed in consultation with local water utilities, the Office of Local Government, Local Government NSW and the NSW Water Directorate. They include an induction handbook, an induction webinar for newly elected councillors and case studies that highlight the roles decision-makers and water utilities take in various scenarios for managing water services.</p>

Using technology to support modern compliance

The Natural Resources Access Regulator (NRAR) is the independent water regulator for NSW. Established in 2018, NRAR's work is essential to a more transparent water compliance and enforcement system and ensures water is shared fairly across the state.

NRAR plays a critical role in ensuring that water rights licence holders are only taking their fair share of water from the system and complying with water laws.

In NSW, NRAR proactively monitors and regulates:

- water across 800,000 square kilometres
- 42,000 water access licences
- 33,000 works approvals for irrigation alone
- 161,000 total works approvals
- 10,000 constructed water bodies greater than one hectare in size.

The regulator is pioneering new and emerging techniques and technologies to deliver high-quality regulation for NSW using satellite technology, drones and mapping.

These technologies played a critical part in ensuring water regulation continued during COVID-19 lockdown periods in NSW throughout 2021, including the July-September 2021 quarter, in which over 900 remote investigations took place using a combination of satellites, smart data and phone calls.

NRAR's use of powerful satellite technology and collaboration with the Department of Planning and Environment – Water, Murray–Darling Basin Authority and Geoscience Australia has enabled NRAR to monitor dams across the state for unusual surface water area changes through a semi-automated process that can scan more than 3,000 dams simultaneously.

As part of providing transparent and accountable enforcement of NSW water laws, NRAR's enforcement actions and a quarterly compliance activity dashboard are publicly available at www.nrar.nsw.gov.au

NRAR's innovative approach to supporting efficient, transparent and accountable compliance and enforcement ensures that water users and the broader community can have confidence in the fair and efficient management of water in NSW.



Image courtesy of Salty Dingo. Compliance officers, Natural Resources Access Regulator.

