

Department of Planning, Industry and Environment

NSW Water Strategy

Implementation Plan

2021 - 2022



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Photography

Image courtesy of Destination NSW.
Lachlan River, Condobolin.

Purpose of the Implementation Plan

The NSW Water Strategy is the first 20-year water strategy for all of NSW, and it will put water on the same footing as other essential state resources and services, such as transport. As a 20-year Strategy, delivery of actions will span short, medium and longer-term time horizons.

This Plan outlines how we will deliver the NSW Water Strategy in 2021-2022. It provides an outcomes-focused annual delivery plan that gives a high level, realistic outline as to how the actions in the Strategy will be delivered for the next 12 months.

Part 1 of this plan identifies:

- what we will deliver in 2021-22 under the seven priorities in the NSW Water Strategy
- who the lead agencies and partners are that will work together to deliver the actions.

We will publicly report on progress annually, and update the Implementation Plan every year to reflect actions for the year ahead. Annual reporting on implementation will provide transparency and accountability for delivering the Strategy for the NSW community.

Implementation of the Strategy is adaptive and has been designed to address changing and emerging issues through regular review. An integrated framework for reviewing and reporting against the NSW Water Strategy, the 12 regional water strategies and two metropolitan water strategies will allow us to track the effectiveness of implementation against achieving the actions of the NSW Water Strategy.

The NSW Water Strategy will be formally evaluated and updated at least every five years.

Timeframes

This Plan shows what delivery will look like for the year ahead from July 2021 to end of June 2022.

Delivery of the full Strategy will be staged over short, medium and longer-term time horizons, and future actions will be reported in subsequent annual Implementation Plans as funding is secured and delivery partners identified.

Indicative timing for delivery of all actions in the Strategy over the three time horizons is mapped out in Part 2 of this Plan.

Core objectives legend:



Protecting public health and safety



Liveable and vibrant towns and cities



Water sources, floodplains and ecosystems protected



Cultural values respected and protected



Orderly fair and equitable sharing of water



Contribute to a strong economy

Part 1 – What we will deliver in 2021-22

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 1.1 Improve engagement, collaboration and understanding	<ul style="list-style-type: none"> Provide plain English explanations with water access licenses to provide clarity for water users about mandatory conditions. Host a monthly public webinar about upcoming water engagement events. Publish the findings of an independent review of the effectiveness of our stakeholder and community engagement activities every two years. Publish multimedia content that makes water information available at a time and in a format that suits customers and the community. Develop a strategy to implement changes to the licensing and approvals system with a focus on accountability and performance, driven by customer experience. Publicly report on progress of all commitments made in response to recommendations from inquiries, reviews and audits. 	DPIE, WaterNSW
	Action 1.2 Increase the amount and quality of publicly available information about water in NSW	<ul style="list-style-type: none"> Improve the DPIE website as our primary tool of communication and access to information for customers and the community. 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. 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. Continuously improve the Water Insights and Water Information Dashboards. 	DPIE, WaterNSW
	Action 1.3 Enhance modelling capabilities and make more data and models openly available	<ul style="list-style-type: none"> Through the open data framework, publish models and model outputs, with an initial focus on rainfall and runoff models. 	DPIE, WaterNSW

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 1.4 Reinforce the effectiveness of the Natural Resources Access Regulator (NRAR)	<ul style="list-style-type: none"> Release 20 planned compliance program final reports to industry and the public. 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. Undertake 50 formal stakeholder events that inform and promote NRAR's regulatory work in priority areas. Engage regulated entities in 5000 site inspections through the Routine Monitoring Project. Hold a minimum of three meetings per year between the NRAR Executive/Board and major stakeholders. Invest in data, intelligence, analytics and systems to focus our regulatory effort towards greatest compliance outcomes. 	NRAR, DPIE
	Action 1.5 Take the final steps in floodplain harvesting reform	<ul style="list-style-type: none"> 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. 	DPIE
	Action 1.6 Review the regulation of domestic and stock basic landholder rights	<ul style="list-style-type: none"> Publish a discussion paper about domestic and stock basic landholder rights management and water usage and consult with the community to confirm key issues. 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. 	DPIE
	Action 1.7 Make sure the majority of non-urban water take, including floodplain harvesting, in NSW is accurately measured	<ul style="list-style-type: none"> Monitor levels of compliance and uptake of metering and telemetry by water users. Introduce clear and enforceable rules for measuring floodplain harvesting. Operate and improve coverage of a telemetry system, to allow water users to remotely measure and transmit their water take information. Engage with water users to ensure awareness and to equip them with the information they need to comply with the rules. Engage with suppliers and installers of metering equipment to increase water users' choice of metering and telemetry equipment, and installers. 	DPIE, NRAR

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 2.1 Strengthen the role of First Nations/ Aboriginal People in water planning and management	<ul style="list-style-type: none"> 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. 	DPIE with First Nations/ Aboriginal peak groups and communities
	Action 2.2 Develop a state-wide Aboriginal Water Strategy	<ul style="list-style-type: none"> 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. 	DPIE with First Nations/ Aboriginal peak groups and communities
   	Action 2.3 Provide Aboriginal ownership of and access to water for cultural and economic purposes	<ul style="list-style-type: none"> Contribute to national processes to confirm the inland water target under Closing the Gap National Agreement. Identify opportunities for greater Aboriginal access and ownership of water through the Aboriginal Water Strategy. Develop a pilot to test methodology for cultural flows. Examine options to address barriers to First Nations/Aboriginal People's access to the water market such as pricing. 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. 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. 	DPIE with First Nations/ Aboriginal peak groups and communities

Objectives	Action	What we will deliver in 2021-22	Responsibility
   	Action 2.4 Work with First Nations/ Aboriginal People to improve shared water knowledge	<ul style="list-style-type: none"> Develop programs and initiatives to improve cultural competency within the water sector. Develop and deliver culturally appropriate information materials on water management policies, rules and frameworks. Provide support for First Nations/Aboriginal People to navigate the water licensing and approvals framework. Involve First Nations/Aboriginal People in the management of environmental water. 	DPIE with First Nations/ Aboriginal peak groups and communities
   	Action 2.5 Work with First Nations/ Aboriginal People to maintain and preserve water-related cultural sites and landscapes	<ul style="list-style-type: none"> Embed First Nations/Aboriginal People and their considerations into policy, planning and infrastructure development processes. 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. 	DPIE with First Nations/ Aboriginal peak groups and communities

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
 	Action 3.1 Consider NSW Long Term Water Plans (LTWPs) to protect and enhance ecological systems	<ul style="list-style-type: none"> 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. 	DPIE
  	Action 3.2 Take landscape scale action to improve river and catchment health	<ul style="list-style-type: none"> Finalise five regional water strategies and continue community consultation on another six 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. 	DPIE
	Action 3.3 Take action to address threats to native fish	<ul style="list-style-type: none"> Improve fish passage at priority sites as guided by the NSW Fish Passage Strategy. Review and update the Cold Water Pollution Strategy and guidelines for management. 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. 	DRNSW, DPIE
 	Action 3.4 Invest in long-term and effective monitoring, evaluation, reporting and research	<ul style="list-style-type: none"> Finalise a monitoring and evaluation framework for water sharing plans, and initially target locations with high environmental risk. Monitor and report on environmental water delivery and management to inform adaptive management and reporting. Publish an updated River Condition Index. 	DPIE
   	Action 3.5 Adopt a more intense, state-wide focus on water quality	<ul style="list-style-type: none"> Implement Water Quality Management Plans as required under the Murray-Darling Basin Plan. Implement the Marine Estate Management Strategy sub-actions to: <ul style="list-style-type: none"> review and refine government arrangements for the management of diffuse source water pollution review and (where necessary) update the NSW Water Quality Objectives in coastal catchments to ensure they reflect contemporary community environmental values and uses. 	DPIE, EPA

Objectives	Action	What we will deliver in 2021-22	Responsibility
   	Action 3.5 Adopt a more intense, state-wide focus on water quality (continued)	<ul style="list-style-type: none"> Continue to support the preparation and implementation of Coastal Management Programs by councils to achieve the objectives of the <i>Coastal Management Act 2016</i> that may include actions to maintain and improve water quality and estuary health, supported by monitoring and evaluation. 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. Develop standard, state-wide arrangements for the monitoring of extreme events in order to enhance response actions and reduce risks. Monitor and report on water quality. 	DPIE, EPA
   	Action 3.6 An enhanced, state-wide focus on sustainable groundwater management	<ul style="list-style-type: none"> Develop a draft NSW Groundwater Strategy for consultation with the community. 	DPIE
  	Action 3.7 Work with communities to better understand and improve system connectivity	<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>North West Unregulated Flow Management Plan targets:</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>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>	DPIE, WaterNSW

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 4.1 New actions to improve and apply our understanding of climate variability and change	<ul style="list-style-type: none"> 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. Pilot delivery of climate risk data in a format that meets the needs of local water utilities. Determine a methodology and progressively incorporate climate risk data into water sharing plan and environmental water management decision making. Establish a NSW Community of Practice for water practitioners to share methods, knowledge and resources to improve environmental, economic and social outcomes. Participate in national and Basin wide communities of practice and share learnings from these groups to align and improve decision making. 	DPIE
	Action 4.2 Review water allocation and water sharing in response to new climate information	<ul style="list-style-type: none"> Publish information explaining the allocation process for each regulated river system. As part of regional water strategy development, consider and consult on options for how new climate risk information can inform allocation decisions. 	DPIE
	Action 4.3 Improve drought planning, preparation and resilience	<ul style="list-style-type: none"> Implement the Future Ready Regions Strategy. Finalise five regional water strategies and two metropolitan water strategies and continue community consultation on another six regional water strategies that will be finalised by the end of 2022. Advocate in Murray-Darling Basin governance forums for changes to current management frameworks to respond to drought conditions. Prepare and publish summaries that explain how the drought was managed in each valley and the lessons learnt from the measures used. Revise the Incident Response Guides for regulated river systems that guide how and when measures were introduced and repealed. 	DPIE, DRNSW, WaterNSW, Sydney Water, Hunter Water

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 4.3 Improve drought planning, preparation and resilience (continued)	<ul style="list-style-type: none"> Update the NSW Extreme Events Policy to reflect these lessons. 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. 	DPIE, DRNSW, WaterNSW, Sydney Water, Hunter Water
	Action 4.4 Better integrate land use planning and water management	<ul style="list-style-type: none"> Identify opportunities for land use planning frameworks to 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. Through the Groundwater Strategy, establish criteria to identify critical groundwater resources and develop spatial products and data to allow for identification and mapping. 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. 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. Work with First Nations/Aboriginal People to understand how cultural values could be identified and considered earlier in land use planning processes. 	DPIE, Local Government

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
 	Action 5.1 Provide greater certainty to regional businesses that rely on secure access to water	<ul style="list-style-type: none"> 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. Work closely with local councils to streamline planning approvals in Regional Job Precincts to provide industry with greater confidence around future investment. Finalise five regional water strategies and continue community consultation on another six 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. 	DRNSW, DPIE, Local Government
 	Action 5.2 Invest in research and development (R&D) and new technologies to lift water productivity in NSW industries	<ul style="list-style-type: none"> 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. 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. Support the resources sector to improve its water use and increase transparency. Pilot recycled water opportunities for industrial and agricultural uses, e.g. in the Western Parkland City's proposed Intensive Horticultural Production Zone. 	DRNSW, DPIE

Objectives	Action	What we will deliver in 2021-22	Responsibility
 	Action 5.3 Improve the operation and transparency of water trade in NSW	<ul style="list-style-type: none"> Update water trade application forms and systems to capture additional information on the price and purpose of trades. 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. 	DPIE, WaterNSW
     	Action 5.4 Identify infrastructure and operational options for each region of NSW	<ul style="list-style-type: none"> Finalise five regional water strategies and continue community consultation on another six 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. 	DPIE
  	Action 5.5 Investigate causes of underuse and develop options to bring use back up to cap	<ul style="list-style-type: none"> 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. 	DPIE

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
 	Action 6.1 Increase resilience to changes in climate and water availability in Greater Sydney and the Lower Hunter	<ul style="list-style-type: none"> Release a draft Greater Sydney Water Strategy and Lower Hunter Water Security Plan to consult with the public and key stakeholders in 2021. Finalise and publish both strategies and implementation plans in 2022, informed by what we hear from consultation. 	DPIE, Sydney Water, Hunter Water
 	Action 6.2 Work collaboratively with local water utilities to reduce risks to town water supplies	<ul style="list-style-type: none"> Continue to regulate and support regional NSW's local water utilities in their provision of safe, secure and sustainable water supply and sewerage services. 	DPIE
 	Action 6.3 Deliver a new Town Water Risk Reduction Program	<ul style="list-style-type: none"> Establish a dedicated team resourced for two 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. 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. Work with the sector to explore the pros and cons of alternative funding models, including a needs-based Community Service Obligation funding model. 	DPIE, NSW Health, EPA, Office of Local Government, Local Government
 	Action 6.4 Continue to deliver the Safe and Secure Water Program	<ul style="list-style-type: none"> Invest more than \$500 million over the next eight years to support local water utilities reduce risks in urban water systems through the Safe and Secure Water Program. 	DPIE

Objectives	Action	What we will deliver in 2021-22	Responsibility
	Action 6.5 Continue to work with suppliers of drinking water to effectively manage drinking water quality and safety	<ul style="list-style-type: none"> Continue to support water utilities to assess water quality risks and implement Drinking Water Management Systems. Continue to provide guidance and support to private water suppliers and water carters on managing drinking water safety in their operations. Improve consistency of drinking water quality regulation and incident management for local water utilities. Continue to provide expert advice, training and support to water utilities on drinking water quality management. 	NSW Health, Water utilities
	Action 6.6 A new state-wide Water Efficiency Framework and Program	<ul style="list-style-type: none"> Consult on the draft Water Efficiency Framework with local water utilities and the community and commence roll-out in metro and regional areas. 	DPIE, Local Government
	Action 6.7 Proactive support for water utilities to diversify sources of water	<ul style="list-style-type: none"> 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 be considered. 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 stormwater harvesting in consultation with water utilities. Identify opportunities to share and learn from diversification projects, enabling peer to peer information sharing. 	DPIE, Local Government
	Action 6.8 Investigate and enable managed aquifer recharge	<ul style="list-style-type: none"> Analyse options for implementing a managed aquifer recharge framework in NSW for consultation with stakeholders and the community. 	DPIE

Objectives	Action	What we will deliver in 2021-22	Responsibility
  	Action 6.9 Promote and improve Integrated Water Cycle Management	<ul style="list-style-type: none"> Develop and implement all regional and metropolitan water strategies based on an Integrated Water Cycle Management Strategy (IWCM) approach. 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. Make system improvements to the regulatory framework and guidance and support to enable local water utilities to implement a comprehensive IWCM approach. 	DPIE
 	Action 6.10 Enable private sector involvement in the NSW water sector	<ul style="list-style-type: none"> Assess feedback from targeted consultation with key stakeholders to inform the final amendments to legislation and regulation. Develop a new Water Industry Competition Regulation and place on public exhibition. 	DPIE, IPART
  	Action 6.11 Foster the circular economy in our cities and towns	<ul style="list-style-type: none"> Release the NSW Waste and Sustainable Materials Strategy 2041. Continue to deliver the Waste Less, Recycle More Program. Give effect to integration of Net Zero principles and circular economy through the proposed Design and Place State Environmental Planning Policy. 	DPIE, EPA



Photography

Image courtesy of Destination NSW.
Tuross River, Tuross Heads.

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

Objectives	Action	What we will deliver in 2021-22	Responsibility
     	Action 7.1 Pilot new technologies to increase our water options	<ul style="list-style-type: none"> 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. Encourage market innovation to improve the coverage, choice and cost of water metering and telemetry technology. 	DPIE, Hunter Water, Sydney Water
     	Action 7.2 Collaborate to harness new research, innovation and technology	<ul style="list-style-type: none"> Maintain a water science strategy and prospectus that provides sector wide guidance on future science, research and development. Initiate, develop and deliver science partnerships in support of enhanced water resource management outcomes with universities, research organisations, industry and the community. 	DPIE
     	Action 7.3 Invest in water sector workforce and capability	<ul style="list-style-type: none"> Partner with Local Water Utilities and the training sector to commence development of the Water and Wastewater Training Strategy. Identify and reduce barriers for local water utilities to work together and share resources for training and development. 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. Explore options for providing greater opportunities for employment of First Nations/Aboriginal People in the water sector. Provide sponsored traineeships for regionally based First Nations/Aboriginal People to secure certification for meter and telemetry installation. Develop resources for councillor awareness and training about water and sewerage services and risks. 	DPIE, Training NSW, Office of Local Government, DRNSW



Photography

Image courtesy of Stefanie Schulte, Department of Planning, Industry and Environment.
Lake Rowland, Lachlan River.

Part 2 – Implementing the NSW Water Strategy over time

The table below gives an overview of how delivery of actions in the Strategy will be staged over short, medium and longer-term time horizons:

- **Horizon 1**

- one-two year delivery timeframe
- improving current performance and based on current capability.

- **Horizon 2**

- start now for a three-five year delivery timeframe
- builds from current capability and current approach to water management
- may involve interjurisdictional collaboration.

- **Horizon 3**

- aspirations that need enhanced capability, thinking and approaches to deliver.

Actions	Horizon 1	Horizon 2	Horizon 3
Action 1.1 Improve engagement, collaboration and understanding			
The NSW Government will improve the way that 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: <ol style="list-style-type: none">use plain English in water management communications and documentsimprove coordination between water sector agencies on engagement activities to reduce overlap, confusion and consultation fatiguetest community interest in each region of NSW to be involved in oversight of the implementation of each of the 12 regional water strategiesbuild knowledge, seek feedback and explore new ways to increase confidence among water users about water management decisionswork with First Nations/Aboriginal People and peak organisations to design appropriate and inclusive approaches for engagement and consultation with Aboriginal People.			
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: <ol style="list-style-type: none">provide easier access to information about how water is managed and how decisions are made, particularly decisions around future water availabilityimprove data management, accessibility and transparency and take an open by default approach to information and dataimprove NSW's public water registers to increase transparency (while protecting privacy).			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 1.3 Enhance modelling capabilities and make more data and models openly available			
To improve and expand our modelling capabilities and make more data, models and model outputs openly available, the Government will:			
a. develop best practice guideline/Codes of Practice to ensure that all models are widely applicable, and that modelling is of the highest quality			
b. maximise the benefits from existing fit-for-purpose models by investigating how we can link these different models and expand their application			
c. identify opportunities to increase transparency in model methods and to make publicly available models and data that have been peer reviewed and quality assured.			
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:			
a. undertake more extensive and effective promotion of the regulatory approach and actions of the NRAR			
b. 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			
c. 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.			
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 water sharing and water resource plans.			
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:			
a. 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			
b. 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.			

Actions	Horizon 1	Horizon 2	Horizon 3
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. Key milestones for delivering this action are:			
Non-urban water metering rules			
<ul style="list-style-type: none"> • 1 December 2020—compliance date for pumps greater than 500 mm • 1 December 2021—compliance date for all other works in northern inland region • 1 December 2022—compliance date for all other works in southern inland region • 1 December 2023—compliance date for all other works in coastal regions 			
Floodplain harvesting measurement rules			
<ul style="list-style-type: none"> • January to May 2022—compliance date for large storages (1,000 ML or greater) • 1 July 2022—compliance date for all other storages. 			
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:			
<ul style="list-style-type: none"> • working with First Nations peak organisations, Aboriginal water interest groups and First Nations communities to determine how we will work together on critical state-wide 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.			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 2.2 Develop a state-wide Aboriginal water strategy The Government will partner with First Nations/Aboriginal People to co-design a state-wide Aboriginal water strategy that will identify a program of measures to deliver on First Nations' water rights and interests in water management.			
<p>Delivering the Aboriginal Water Strategy will involve:</p> <ul style="list-style-type: none"> • 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. <p>The Department of Planning Industry and Environment will partner with First Nations/Aboriginal groups to co-design:</p> <ul style="list-style-type: none"> • 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. 			
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: <ul style="list-style-type: none"> • 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. 			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 2.4 Work with First Nations/Aboriginal People to improve shared water knowledge <p>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:</p>			
<ul style="list-style-type: none"> • establishing culturally-safe mechanisms for two-way sharing of water knowledge, where appropriate, supported by appropriate mechanisms for data sovereignty that ensure the protection of First Nation/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. <p>We will also partner with First Nations/Aboriginal People to develop programs and initiatives that will:</p> <ul style="list-style-type: none"> • 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. 			
Action 2.5 Work with First Nations/Aboriginal People to maintain and preserve water-related cultural sites and landscapes <p>The Government will work closely with Aboriginal communities to ensure that:</p>			
<ul style="list-style-type: none"> • 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. <p>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.</p>			
Action 3.1 Consider NSW Long Term Water Plans to protect and enhance ecological systems <p>The Government will work to:</p>	<ol style="list-style-type: none"> a. 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 		
<ol style="list-style-type: none"> b. improve understanding of climate change on Environmental Water Management 			
<ol style="list-style-type: none"> c. engage with stakeholders, including First Nations/Aboriginal People in the implementation and review of NSW Long Term Water Plans. 			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 3.2 Take landscape scale action to improve river and catchment health			
<p>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.</p>			
Action 3.3 Take action to address threats to native fish			
<p>The NSW Government will deliver three state-wide, catchment scale initiatives to address key threats to native fish populations. We will:</p>			
<ul style="list-style-type: none"> a. implement the NSW Fish Passage Strategy b. 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 c. invest in fish-friendly water extraction technology at priority sites, guided by the regional water strategies. 			
Action 3.4 Invest in long-term and effective monitoring, evaluation, reporting and research			
<p>The Government will:</p>			
<ul style="list-style-type: none"> a. implement monitoring, evaluation, and reporting frameworks to track the effectiveness of plans and policies and inform future management actions b. 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. 			
Action 3.5 Adopt a more intense, state-wide focus on improving water quality			
<p>The Government will:</p>			
<ul style="list-style-type: none"> a. continue to monitor and review the NSW Water Quality Objectives across NSW to ensure they reflect contemporary community and environmental values and uses b. define clear roles, accountabilities and frameworks for monitoring, assessing and addressing water quality risks across the state c. ensure the community can access information about water quality. 			
Action 3.6 An enhanced, state-wide focus on sustainable groundwater management			
<p>The Government will develop and implement a 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.</p>			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 3.7 Work with communities to better understand and improve system connectivity			
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:			
a. develop principles and a clear statement about how NSW will increase connectivity across regions of the Murray-Darling Basin			
b. explore options to improve connectivity between catchments			
c. develop decision-making support tools and frameworks to better inform water sharing decisions across connected water resources, particularly in the Murray-Darling Basin			
d. 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.			
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:			
a. include new climate data and risk modelling methods in the NSW Common Planning Assumptions			
b. 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			
c. incorporate the new climate data into NSW water models, initially for regional and metropolitan water strategies and modelling of new infrastructure projects			
d. partner with key stakeholders and industry to develop communities of practice for climate risk modelling, and to promote improved risk management and adaptation			
e. advocate for use of a single climate risk methodology across the Murray-Darling Basin.			
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:			
a. 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			
b. exploring risk management approaches for more adaptive water allocation and accounting frameworks			
c. improving transparency and clarity for all water users about decision making for water allocations.			

Actions	Horizon 1	Horizon 2	Horizon 3
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:			
a. 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			
b. 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			
c. consider options for improving the management of shared water resources during times of drought and work with other Basin governments to promote improvements			
d. document our lessons learnt from managing water during the recent drought and ensure these lessons inform future decision making			
e. investigate options for a more consistent approach to water restrictions across NSW, including the development of common principles.			
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:			
a. 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			
b. develop new planning policies, if required, to integrate land use and water cycle management decisions			
c. 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			
d. improve access to information about water availability to support development			
e. examine opportunities for information on high value water-dependent ecosystems and cultural values to be considered in land use planning decisions.			
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:			
a. developing Special Activation Precincts and Regional Job Precincts			
b. 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.			

Actions	Horizon 1	Horizon 2	Horizon 3
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:			
a. 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			
b. improving water use efficiency and productivity in agriculture, food processing and manufacturing, resources and other industries			
c. supporting the cost effective development of rainfall independent sources of water supply for key industry sectors, such as desalination and recycling			
d. supporting the development and improvement of irrigation systems to maximise the productive use of water			
e. 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)			
f. 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			
g. improving the capacity of NSW primary industries to better plan for and respond to climate change by reviewing existing climate change 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 primary industry sectors.			
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:			
a. improve the transparency of trading activities and access to information about these activities			
b. review the need for a regulatory framework covering water brokers and intermediaries to improve confidence in how the market is regulated.			
Action 5.4 Identify infrastructure and operational options for each region of NSW			
The Government will improve infrastructure investment decisions and outcomes through strategic long-term planning. We will:			
a. 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 two metropolitan water strategies for Greater Sydney and the Lower Hunter			
b. monitor and report on the implementation of all 14 water strategies.			
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.			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 6.1 Increase resilience to changes in climate and water availability in Greater Sydney and the Lower Hunter			
<p>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.</p>			
Action 6.2 Work collaboratively with local water utilities to reduce risks to town water supplies <p>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:</p> <ul style="list-style-type: none"> safe, secure and sustainable water supply and sewerage services, managed by LWUs 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 LWUs and the NSW Government improving and supporting councils' ability to manage strategic urban water priorities and risks. 			
Action 6.3 Deliver a new Town Water Risk Reduction Program <p>The Department of Planning, Industry and Environment, in collaboration with NSW Health, the Environment Protection Authority, the Office of Local Government and Regional NSW, will implement a two-year Town Water Risk Reduction Program in partnership with councils and local water utilities. This new program will:</p> <ul style="list-style-type: none"> 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. 			
Action 6.4 Continue to deliver the Safe and Secure Water Program <p>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.</p> <p>The NSW Government will invest more than \$500 million over the next eight years to support local water utilities reduce risks in urban water systems through the Safe and Secure Water Program.</p>			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 6.5 Continue to work with suppliers of drinking water to effectively manage drinking water quality and safety			
<p>The Government will support suppliers of drinking water by:</p> <ul style="list-style-type: none"> 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. 			
Action 6.6 A new state-wide Water Efficiency Framework and Program			
<p>The Government will implement a state-wide Water Efficiency Framework and Program for urban water in 2021 following consultation with key stakeholders, including water utilities. The framework and program will:</p>			
<ul style="list-style-type: none"> 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 BASIX (the Building Sustainability Index) in driving and sustaining water efficiency. 			
Action 6.7 Proactive support for water utilities to diversify sources of water			
<p>The Government will support water utilities to diversify sources of water including groundwater, stormwater harvesting and recycling.</p> <p>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.</p>			
Action 6.8 Investigate and enable managed aquifer recharge			
<p>The Government will develop a policy that sets out the framework for MAR in NSW and identify where it is technically and economically viable. We will:</p> <ul style="list-style-type: none"> 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. 			

Actions	Horizon 1	Horizon 2	Horizon 3
Action 6.9 Promote and improve Integrated Water Cycle Management <p>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.</p>			
Action 6.10 Enable private sector involvement in the NSW water sector <p>The Government will finalise reforms to the <i>Water Industry Competition Act 2006</i> and Water Industry Competition Regulation to support involvement of the private sector in the supply of water and wastewater services.</p>			
Action 6.11 Foster the circular economy in our cities and towns <p>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.</p>			
Action 7.1 Pilot new technologies to increase our water options <p>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.</p>			
Action 7.2 Collaborate to harness new research, innovation and technology <p>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:</p> <ul style="list-style-type: none"> • 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 state-wide water data and systems governance. 			
Action 7.3 Invest in water sector workforce and capability <p>The Government will:</p> <ol style="list-style-type: none"> a. develop a NSW Water and Wastewater training strategy with local water utilities to understand skills shortages and the types of initiatives required to address these b. invest in our future water workforce, including through education, training, cadet and graduate programs c. promote the important societal contribution that water management makes through creating jobs with purpose and meaning. <p>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.</p>			



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