

Regional Water Strategy

Western – Implementation Plan

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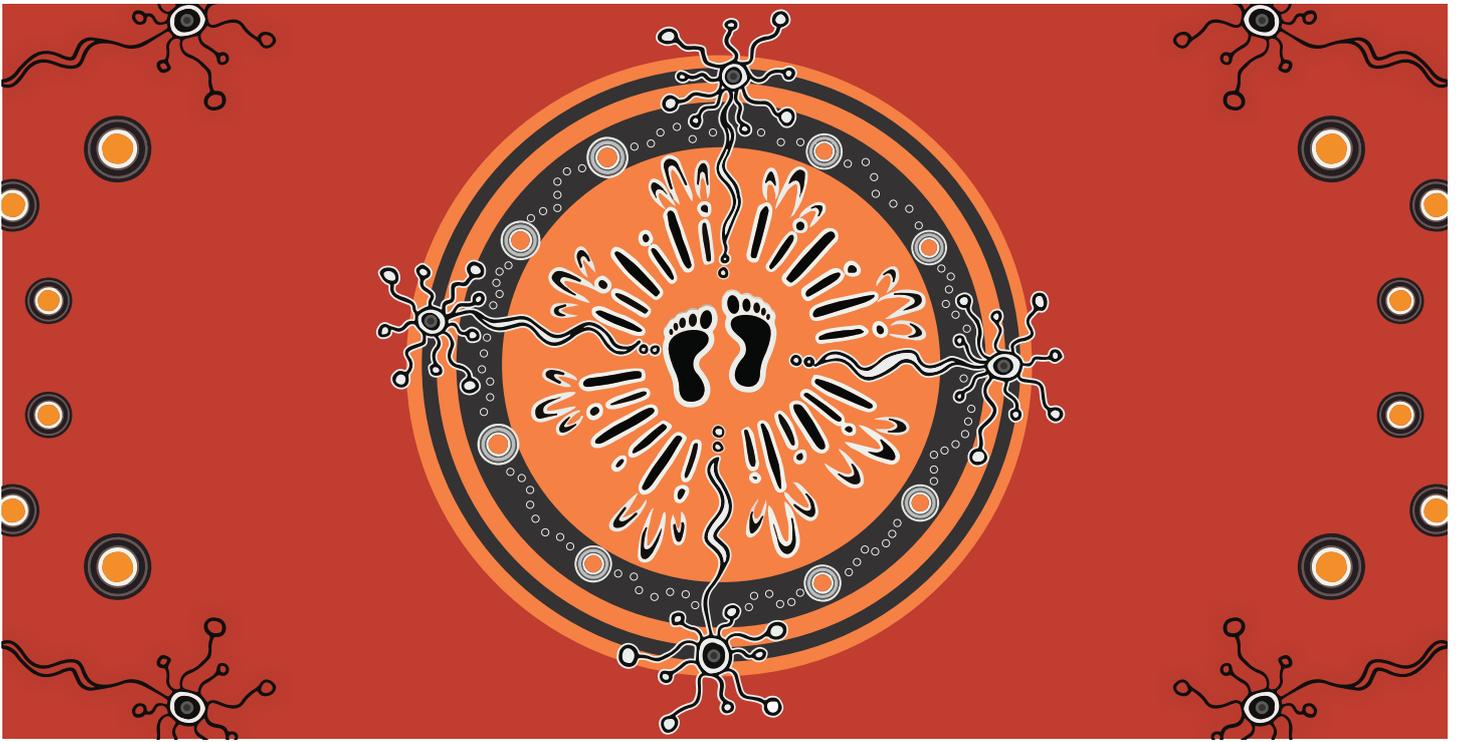
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More information water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies

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Acknowledging First Nations people

The NSW Government acknowledges First Nations people as the first Australian people and the traditional owners and custodians of the country's lands and water. First Nations people have lived in NSW for over 60,000 years and have formed significant spiritual, cultural, and economic connections with its lands and waters.

Today, they practise the oldest living culture on earth.

The NSW Government acknowledges the First Nations people from the Western region as having an intrinsic connection with the lands and waters of the Western Regional Water Strategy area. The landscape and its waters provide the First Nations people with essential links to their history and help them to maintain and practise their traditional culture and lifestyle.

We recognise Traditional Owners as the first managers of Country. Incorporating their culture and knowledge into management of water in the region is a significant step towards closing the gap.

Under this regional water strategy, we seek to establish meaningful and collaborative relationships with First Nations people. We will seek to shift our focus to a Country-centred approach; respecting, recognising and empowering cultural and traditional Aboriginal knowledge in water management processes at a strategic level.

We show our respect for Elders past and present through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places where First Nations people are included socially, culturally and economically.

As we refine and implement the regional water strategy, we commit to helping support the health and wellbeing of waterways and Country by valuing, respecting and being guided by First Nations people, who know that if we care for Country, it will care for us.

We acknowledge that further work is required under this regional water strategy to inform how we care for Country and ensure First Nations people hold a strong voice in shaping the future for their communities.

Artwork courtesy of Nikita Ridgeway.

About this Implementation Plan

The Western Regional Water Strategy charts the NSW Government's long-term vision and direction for delivering sustainable and resilient water services for the next 20–40 years. It sets out clear and accountable actions for the NSW Government, local water utilities and industries to tackle the challenges facing the Western region and maximise opportunities arising from the growing agricultural and tourism sector, other emerging and expanding industries, and new investments in community infrastructure. As a 20-year strategy, delivery of actions will span short, medium and longer-term time horizons.

The Western Regional Water Strategy has a 20–40 year timeframe, and the prioritisation of action implementation recognises this. We have already started work on many of the strategy's actions. For those actions that have not been commenced, some we intend to implement in the short term, and others we intend to implement in the medium to longer term. This recognises, that although all actions are important, we cannot implement all actions immediately.

The Western Regional Water Strategy has been designed to be adaptive. This means we will update the strategy and our implementation approach to respond to changing priorities. We will review and update the strategy at least every 5 years.

Immediate priorities for the Western Regional Water Strategy

Not all of the actions in the Western Regional Water Strategy will be implemented immediately. This implementation plan prioritises the actions for delivery over the next 20 years. It identifies work that can begin immediately. It also clarifies the dependencies of actions on each other.

The focus of the first stage of implementation will be on:

- **Assessing the effectiveness of the shortlisted actions** by assessing how the actions perform under different climate scenarios based on extended 10,000-year climate datasets. The results of this analysis will be published in 2023.
- **Finalising connectivity actions and considering them in the review of the Barwon–Darling Water Sharing Plan remake** in 2024. This will help make sure the tools are in place to support critical human and environmental needs in the next drought. This will include publishing critical dry conditions triggers and seeking to implement them in water sharing plans (Action 3.1), finalising the review of the North-West Flow Plan (Action 3.2) and progressing work with other basin jurisdictions and the Murray–Darling Basin Authority around changing the operational arrangements of releasing water from Lake Cawndilla down the Great Darling Anabranch (Action 3.4).
- **Securing funding to progress actions to improve the security of water supplies for towns and small communities in the Western region** (Actions 1.1, 1.2 and 1.3).
- **Remediating fish barriers and improving flows across catchments:** by fully implementing the NSW Floodplain Harvesting Policy (Action 2.1), remediating unapproved floodwork structures (Action 2.2), and remediating fish barriers through the Northern Basin Toolkit (Action 2.5).
- Progressing the development of an **Aboriginal Water Strategy** and setting up the framework to better engage with, and support place-based initiatives to **deliver cultural outcomes for Aboriginal people** (Action 1.7 and 1.8).

We have prioritised actions based on:

- results of our analyses
- discussions with local councils and other government agencies
- community feedback
- available funding and funding opportunities.

Important note: The numbering of priorities and actions in this document was done to help structure the content and does not reflect their order of importance.

Responsibilities

The implementation plan also outlines responsibilities for delivery. This will allow us to better:

- monitor the progress of actions
- assess the effectiveness of the strategy
- identify areas for improvement.

Monitoring, evaluation and progress reporting

An integrated monitoring and reporting framework has been developed for the various NSW water strategies. We will confirm and apply this to the Western Regional Water Strategy and regularly report on the progress of the implementation.

These progress reports will provide transparency and accountability for delivering the Western Regional Water Strategy to the NSW community.

Reading the plan

The Western Regional Water Strategy is the result significant analysis and community engagement and builds on a range of existing commitments and work already underway. This work and community feedback is the rationale for how the implementation of the actions have been prioritised and is recorded under the heading **Our starting point**.

There is some work that can commence very soon. Programs planned to commence in the next 12 months are recorded under the heading **What we will do next**.

There is some work which will take more time or rely on other actions to be completed first before they can begin. Programs which have a commencement time longer than 12 months are recorded under the heading **What we will do later**. These programs may also be subject to funding approval.

There may be some instances where a column is blank. This is because we cannot begin implementing every action at once. The monitoring framework will help the department and the community assess the progression of implementing the strategy in full.

The Government agency or partner identified responsible for delivering each program in the strategy is listed as **Lead** under each sub-action.

Agencies or partners who play a supporting role in delivering the programs of the lead are listed as **Supported by** under each sub-action.

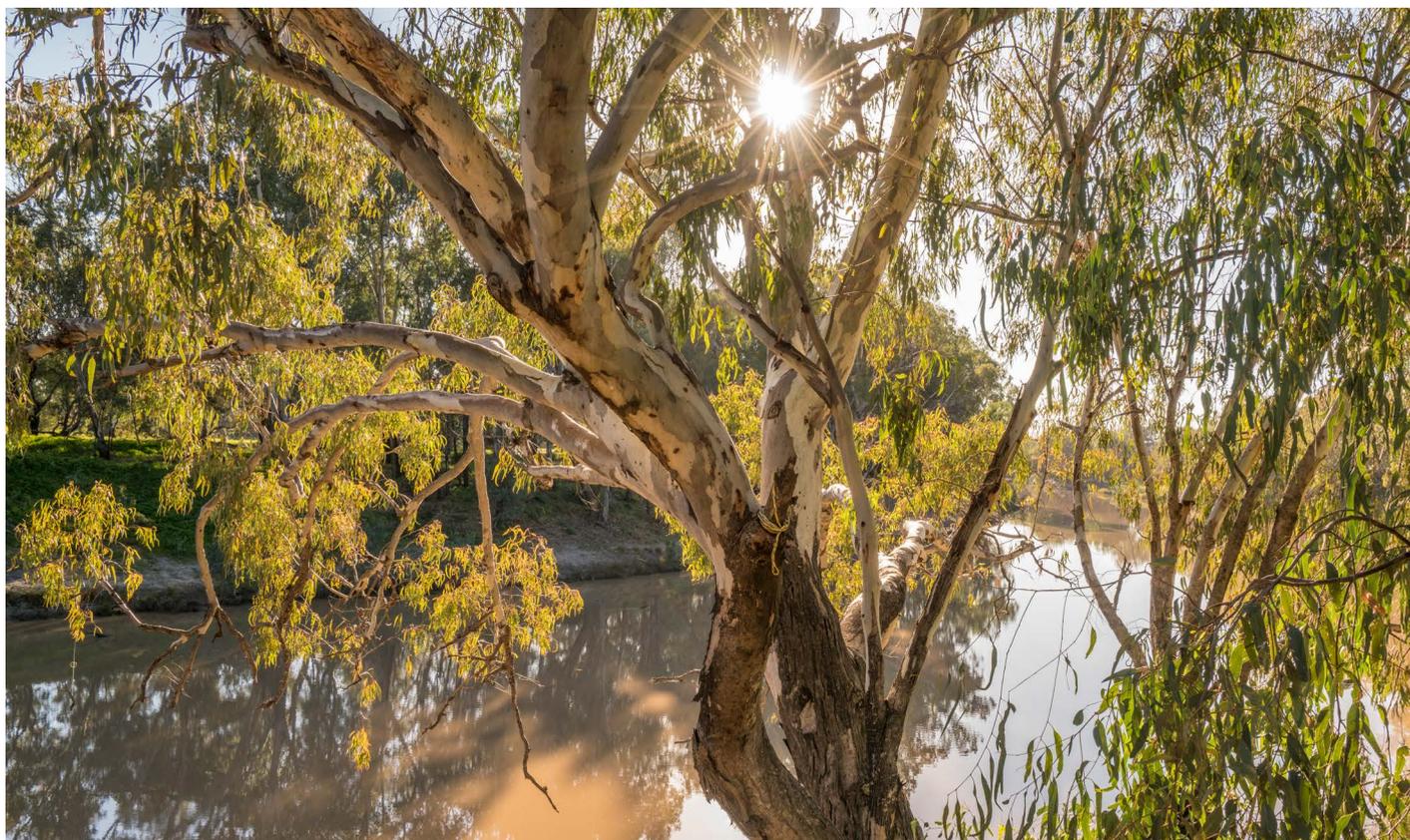


Image courtesy of Destination NSW. Darling River, Bourke.

Priority 1

Improving water security for towns, industries and communities

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.1:</p> <p>Augment water supply systems for towns and small communities</p>	<p>The NSW Government provides funding to support councils to complete local water utility strategic planning.</p> <p>The NSW Government's Town Water Risk Reduction Program is working in partnership with councils, local water utilities, government agencies and the broader sector to improve management of town water risks.</p> <p>Around \$589 million has been invested in water security upgrades in the region through the \$1.1 billion Safe and Secure Water Program.</p> <p>The Safe and Secure Water Program has delivered 27 completed projects with more than 200 others in various stages of delivery across regional areas.</p>	<p>Augment town water supplies</p> <p>Obtain funding to prepare final business cases to augment town water supplies for a number of towns in the region.</p> <p>This includes:</p> <ul style="list-style-type: none"> raising town water supply weirs at Bourke, Pooncarie and Collarenebri investigations for covered off stream storages at Collarenebri, Walgett, Louth, Tilpa, Wilcannia and Pooncarie investigating additional groundwater supplies for Collarenebri, Walgett, Bourke, Louth, Wilcannia, Pooncarie. 		Water Infrastructure NSW	WaterNSW DPI Fisheries

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 1.1: Augment water supply systems for towns and small communities (continued)	<p>The Western Weirs Strategic Business Case considered a suite of town water supply options for a number of Western region towns and was used as the basis for shortlisting the town water security related actions in the Western Regional Water Strategy.</p> <p>Stakeholders have suggested that there needs to be improvements made to town water supply systems, particularly during drought.</p>	<p>Small community water security assessment</p> <p>Department of Planning and Environment – Water will work with and support eligible councils to progress water security measures as part of the Safe and Secure Water Program.</p> <p>Recycled Water Roadmap</p> <p>Department of Planning and Environment – Water will finalise a recycled water roadmap. Over the next 5 years the NSW Water Strategy commits to progressing regulatory reform, guidelines and community acceptance campaigns to make the development and use of advanced water treatment facilities easier. This includes the developed of a draft Recycled Water Roadmap for consultation.</p> <p>These would be multi-year projects.</p>		DPE Water	Relevant Councils

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.2:</p> <p>Adopt a stronger focus on water efficiency and demand management for towns</p>	<p>The NSW Government has developed the NSW Water Efficiency Framework and Program.</p> <p>Under the program, the department:</p> <ul style="list-style-type: none"> partnered with The Water Conservancy to subsidise the cost of a Smart Water Advice subscription for Local Water Utilities partnered with NABERS to subsidise the cost of a first-time water rating, with further subsidies for regional areas partnered with Department of Education to trial a water efficiency incursion for primary school students across NSW and provide education resources to teachers is reviewing statewide regulations such as BASIX. 	<p>Finalise the Water Efficiency Program outline and make it available on the Department of Planning and Environment – Water website.</p> <p>Develop tools and resources to support local water utilities using the NSW Water Efficiency Framework, including a non-residential project handbook.</p> <p>Collaborate with Local Water Utilities on research projects that will inform water efficiency planning.</p>	<p>The department will continue to identify water efficiency projects and initiatives across all sectors in line with the NSW Water Efficiency Program and Framework.</p>	DPE Water	

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.3:</p> <p>Addressing water related skills shortages and funding challenges in small councils</p>	<p>The NSW Government provides support to ensure the provision of safe and secure water and sewerage services to towns and communities. These include:</p> <ul style="list-style-type: none"> • Capital funding for water treatment infrastructure where this has been identified as high risk. • The provision of state-wide technical support and training to operate and maintain water treatment works for Councils across NSW through the Town Water Risk Reduction Program. • Training Services NSW is in the process of creating 200 fully funded trainee places to support local water utilities across NSW. 153 places have been filled between December 2021 and October 2022. Under phase 2 of the program there is expected to be over 500 full qualification training opportunities for water and sewerage operators over 2 years and additional funding for upskilling and obtaining part-qualifications. • The NSW Government is investing \$32.8 million into a suite of new initiatives to provide greater support and improved skills and training for Local Water Utilities including funding for phase 2 of the Town Water Risk Reduction Program. 	<p>Continue to implement the draft skills and training action plan.</p> <p>Consider linking with Aboriginal initiatives to train and employ local Aboriginal staff.</p>	<p>Support councils to address key training and skills gaps that can support delivery of water to communities.</p>	<p>DPE Water</p> <p>Training Services NSW</p>	<p>Local Councils</p> <p>NSW Water Directorate</p> <p>Local Government NSW</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.4:</p> <p>Use groundwater more efficiently, innovatively and sustainably</p>	<p>The NSW Government’s Groundwater Strategy identifies state-wide priority actions for how groundwater resources can be managed sustainably into the future.</p> <p>Five salt interception schemes are in place to help manage the ongoing issue of salinity from groundwater systems in NSW. This includes the Upper Darling Salt Interception Scheme located south-west of Bourke, which was completed in 2012. In 2019–20, over 33,000 tonnes of salt was diverted from the river.</p>	<p>Undertake scientific studies on natural variations in groundwater quality, including the impacts of climate change and connectivity between surface water and groundwater in the region.</p> <p>Finalise research with Geoscience Australia to better understand groundwater systems in the Upper Darling River floodplain.</p> <p>Develop a business case for an enhanced groundwater monitoring program (including groundwater quality).</p> <p>Promote groundwater desalination for industry and towns.</p>	<p>To be informed by the NSW Groundwater Strategy.</p>	<p>DPE Water</p>	<p>WaterNSW (salt interception schemes, and groundwater monitoring program business case)</p> <p>DPE Water</p>



Image courtesy of iStock. Barwon River, Brewarrina.

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 1.5: Improve the collection, analysis and public access to data	WaterNSW have updated Water Information Dashboards including Water Insights over recent years to provide detailed water information to the public.	<p>Upgrade the Barwon–Darling IQQM model to the SOURCE model to better represent low flows.</p> <p>Improve understanding and modelling capability of return flows from floodplains as first step to better forecasting of river flows during high flow events. This includes looking at methods and data to identify and undertake pilot projects which will test the methodology and suitability for valley-wide application.</p> <p>This will be a multi-year program.</p>	Develop the Drought Flood Risk Index (DFRI) with the aim of providing early warning to water users on whether the Lower Darling regulated valley is at a higher risk of heading into drought, or floods. The DFRI will be made available on the Water Insights portal.	DPE Water	WaterNSW DPE Water
		Seek funding for a routine bathymetric survey program to be included in the ongoing operations and maintenance program for Menindee Lakes.		WaterNSW	DPE Water

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.6:</p> <p>Collect water quality data in the Lower Darling River</p>	<p>The Department of Planning and Environment – Water has developed a Hydrometric Network Review and Hydrometric Improvement Plan.</p> <p>The Department of Planning and Environment – Water convenes an incident management response group as required when water quality conditions deteriorate. Water quality data (e.g. dissolved oxygen and temp) is collected during the event at additional sites, co-ordinated with other agencies who have staff in those areas.</p>	<p>Seek funding to invest in technologies and monitoring that can provide real time information about water quality and water flows at priority locations to inform planning and management for these systems. This may include installing new water quality monitors alongside flow gauges in the Lower Darling, Menindee Lakes, and the Great Darling Anabranch.</p>	<p>Undertake further work to analyse potential gaps in water quality research, monitoring and modelling in the Western region.</p>	DPE Water	<p>DPE – Environment and Heritage Group</p> <p>WaterNSW</p> <p>DPI Fisheries</p>
<p>Action 1.7:</p> <p>Develop ongoing arrangements for participation of local Aboriginal people in water management</p>	<p>Priority 2 of the NSW Water Strategy provides actions to strengthen the role of First Nations/Aboriginal people in water planning and management.</p> <p>The NSW Government has put in place guidelines to ensure fair remuneration for sharing of knowledge from Aboriginal people/First Nations stakeholders. This will help implement Priority 2 of the NSW Water Strategy.</p>	<p>Finalise the NSW Aboriginal Water Strategy and the Aboriginal water engagement framework.</p> <p>Establish regional Aboriginal water committees based on local protocol and governance specific for First Nations communities in the Western region.</p>	<p>Progress priorities identified by the regional committees and local communities.</p>	DPE Water	<p>First Nations/ Aboriginal peak groups and communities</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.8:</p> <p>Support place-based initiatives to deliver cultural outcomes for Aboriginal people</p>	<p>Priority 2 of the NSW Water Strategy commits to working with First Nations/Aboriginal people to maintain and preserve water-related cultural sites and landscapes.</p> <p>The Australian Government's Indigenous Rangers Program supports the Barkandji Native Title Group Aboriginal Corporation in the Western region and a ranger program at Walgett with the Dharriwaa Elders Group.</p> <p>Western Local Land Services is delivering the Pathways to Country Program over the next 3 years which aims to deliver a number of outcomes for Aboriginal communities, protect important cultural sites and increase awareness amongst landholders.</p>	<p>Department of Planning and Environment – Water will investigate a framework to support local level place-based initiatives in the Western region. This will involve developing fit-for-purpose programs that align with community values developed through engagement with regional Aboriginal water committees and local Aboriginal communities (see Action 1.7).</p> <p>Investigate developing cultural watering plans.</p> <p>The NSW Government has committed to developing a state-wide Draft Aboriginal Water Strategy in partnership with Aboriginal/First Nations people which will identify a program of measures to deliver on First Nations' water rights and interests in water management.</p>	<p>Continue to investigate opportunities to deliver cultural outcomes from improved access to water.</p>	<p>DPE Water</p>	<p>First Nations/ Aboriginal peak groups and communities</p> <p>Local Land Services</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.9:</p> <p>Improve cross-border collaboration and information sharing</p>	<p>There are existing governance structures and functions set up to support cross border water management collaboration. This includes the:</p> <ul style="list-style-type: none"> • Border Rivers Commission • Intergovernmental agreements • Cross Border Commissioner • Border Rivers Organisation of Councils. <p>Department of Planning and Environment – Water worked with the Queensland Government and the Commonwealth Environmental Water Holder to develop an accounting method for determining the volume of held environmental water (HEW) crossing the Queensland–NSW border for the following catchments:</p> <ul style="list-style-type: none"> • Border Rivers • Moonie • Lower Balonne • Warrego. 	<p>Building off existing structures, set up regular forums to discuss strategic and operational cross border issues.</p> <p>Further develop and finalise a Memorandum of Understanding (MoU) agreement with the Queensland Government and strengthen the capacity of the Border Rivers Commissioner’s office.</p> <p>Progress work on recognition of held environmental water from Queensland in the Intersecting Streams.</p>	<p>Incorporate into business as usual.</p>	<p>DPE Water</p> <p>Cross border Commissioner</p>	

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 1.10:</p> <p>Support Aboriginal business opportunities in the Western region</p>	<p>Priority 2 of the NSW Water Strategy commits to provide Aboriginal ownership of and access to water for cultural and economic purposes.</p> <p>The NSW Government is supporting Aboriginal business development opportunities through a range of programs including the Aboriginal Partnership Program and the Aboriginal Communities Water and Sewerage Program.</p>	<p>The Draft Aboriginal Water Strategy will explore market and non-market mechanisms available for obtaining water to meet the inland waters target. These mechanisms will be examined as part of developing the Draft Aboriginal Water Strategy cultural and economic outcomes for Aboriginal people.</p> <p>This is a multi-year program.</p>	<p>In August 2022, the NSW Government endorsed a new inland waters target under the National Agreement on Closing the Gap. This target commits 3% of the total volume of water access entitlements nationally to be held by Aboriginal corporations by 2031. NSW will undertake activities to progress outcomes under the National Closing the Gap Agreement in consultation with First Nations/Aboriginal people.</p>	DPE Water	First Nations/ Aboriginal peak groups and communities
<p>Action 1.11:</p> <p>Support adoption of farm climate adaptation and water efficiency measures</p>	<p>The Department of Primary Industries is undertaking a detailed analysis of the risks and opportunities of a changing climate to support resilience and adaptation in the broadacre cropping sector.</p> <p>The One Basin CRC has been formed to develop policy, technical and financial solutions to support and reduce exposure to climate, water and environmental threats in the Murray–Darling Basin.</p>	<p>Complete stage 1 of the Department of Primary Industries Climate Vulnerability Assessment which will include publishing summaries of the assessments of climate risk and opportunities for western agricultural commodities including cotton, and extensive livestock.</p>	<p>Implement stage 2 of the Department of Primary Industries Climate Vulnerability Assessment which will include integrating water data from the regional water strategies into the analysis and investigating adaptation responses for cotton.</p>	DPI Agriculture	DPE Water

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 1.11: Support adoption of farm climate adaptation and water efficiency measures (continued)	<p>The NSW Government has funded an expanded Farms of the Future program to support on-farm connectivity and encourage farmers to adopt agtech to boost productivity, including water efficiency and drought preparedness.</p>	<p>Continue to roll-out the Farms for the Future pilots (funded until 2025).</p>	<p>Monitor outcomes of adoption of digital technologies under Farms for the Future program to see if any further gaps remain that may support regional adaptation.</p>	DPI Agriculture	
	<p>The Department of Primary Industries – Agriculture holds data and knowledge of past and current water balances occurring under irrigated and rainfed land uses.</p>	<p>Measure water productivity and water sustainability indices for cotton production systems.</p>	<p>Identify potential changes to water use, productivity and sustainability and engage with industry to monitor actual changes occurring.</p>	DPI Agriculture	



Image courtesy of Destination NSW. Townscape, Bourke.

Priority 2

Improving the resilience of natural systems

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 2.1: Fully implement the NSW Floodplain Harvesting Policy	<p>The NSW Government has created floodplain licences and entitlements for water users in the Gwydir and Border Rivers valleys. Regulations for the other valleys and amendments to water sharing plans are progressing.</p>	<p>Implement floodplain harvesting water access licences and works approvals, including enforceable limits, measurement and reporting requirements, in the Barwon–Darling.</p>	<p>Regulatory framework in place to manage floodplain harvesting in the Barwon–Darling.</p>	DPE Water	
Action 2.2: Remediate unapproved floodwork structures or constraints	<p>The Australian Government has funded the Improving Floodplain Connections program.</p>	<p>Commence implementation of the Improving Floodplain Connections program in the Western region.</p>		DPE Water	<p>WaterNSW</p> <p>Natural Resources Access Regulator</p> <p>DPE – Environment and Heritage Group</p> <p>DPI Fisheries</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 2.3: Protect priority aquatic and groundwater dependent ecosystems		Bank erosion below Weir 32 Seek funding to undertake a scoping study to understand the extent and costs to remediate embankment erosion downstream of Weir 32.		DPE Water Murray–Darling Basin Authority Joint programs	DPE Water WaterNSW
	Improve the health of Groundwater Dependent Ecosystems (GDEs) Baseline conditions of vegetation, wetland and subterranean GDEs have been established. Datasets for the identification and assigning of ecological value for vegetation and wetland GDEs are available on the SEED website. Water sharing plans and water resource plans set objectives and rules for monitoring, evaluating, reporting and management of GDEs.	Scope a program to identify a risk-based program to improve GDE data, information products, and adaptive management decisions for the benefit of social-cultural and environmental outcomes.	To be informed by the NSW Groundwater Strategy Implementation Plan.	DPE Water	DPE – Environment and Heritage Group

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 2.3:</p> <p>Protect priority aquatic and groundwater dependent ecosystems (continued)</p>	<p>Better understand the range of flows in a changing climate</p> <p>This will be a medium-term priority. Progressing actions in Priority 3 around improving connectivity will change the base case analysis for this action and may address some of the current gaps in the flow regime.</p> <p>The Murray–Darling Basin Authority is working with Department of Planning and Environment – Water to undertake a case study in the Macquarie–Wambuu catchment to develop and demonstrate the process for investigating the performance of river system policy settings and operation under a changing climate. The objective of the case-study will be to understand the river system’s vulnerability to climate change, identify adaption options and evaluate their effectiveness. The learnings of this study could be used to inform similar studies in other catchments.</p> <p>The Western Regional Water Strategy has undertaken significant analysis of how different climate scenarios could impact on the flow regime in the Western region for the actions under Priority 3.</p>		<p>Work with water managers and technical experts to scope and commence work to improve understanding of impacts of climate change on frequency and adequacy of different flow types required to maintain and protect important ecological assets.</p>	<p>DPE – Environment and Heritage Group</p>	<p>DPE Water</p> <p>WaterNSW</p> <p>DPI Fisheries</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 2.4: Undertaking broadscale, long-term catchment management and better integrating land use and water management	<p>Improve habitats for native species</p> <p>Local Land Services is implementing a range of programs to improve natural resource management in the Western region. This includes the Fencing the Northern Basin Riverbanks programs funded by the Australian Government.</p> <p>The Commonwealth Environmental Water Office, the Department of Primary Industries – Fisheries and the Murray–Darling Basin Authority have been undertaking aquatic and riparian habitat mapping to inform water management. This mapping covers majority of the Barwon–Darling River, the Paroo and the Warrego rivers as well as reaches of the Lower Darling River.</p>	<p>River and catchment management program</p> <p>Secure funding to progress the following projects in the Western Local Land Services region:</p> <ul style="list-style-type: none"> • Healthy Rivers Program • Riparian fencing and restoration programs • Floodplain restoration projects. 	<p>Identify priority sites in the Western region to focus riparian and floodplain rehabilitation efforts and secure funding to progress the projects.</p> <p>Secure funding to:</p> <ul style="list-style-type: none"> • complete detailed aquatic and riparian mapping at remaining reaches in the Western Local Land Services region • undertake a floodplain mapping project in the Western region focusing on potential native fish and ecosystem processes • implement a whole-of-catchment program of works to improve river health, water quality, connectivity, ecosystem resilience and land use practices. 	<p>Local Land Services</p> <p>DPI Fisheries (aquatic mapping, and subsequent on ground works)</p>	<p>DPI Fisheries</p> <p>DPE – Environment and Heritage Group</p> <p>Murray–Darling Basin Authority</p>
	<p>NSW Government is running a suite of natural capital voluntary programs to assist the primary industries sector to undertake sustainable actions.</p>	<p>Offer certification through agreed sustainability actions, including improving land management for example by protecting remnant vegetation riparian, areas via fencing or other means.</p>			<p>DPE – Environment and Heritage Group</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 2.5:</p> <p>Mitigate the impact of water infrastructure on native fish</p>	<p>The NSW Government and the Australian Government have made commitments to address barriers to fish passage through a range of initiatives, including the Reconnecting the Northern Basin project as part of the Northern Basin Toolkit, the Wilcannia Weir Replacement Project, the Lower Darling Fish Passage Program, the Accelerated Fish Passage project and Better Baaka program.</p> <p>The Australian Government has provided funding for fish passage, and diversion screens as part of the Northern Basin Toolkit.</p> <p>Native fish passage</p> <p>Funding secured through Northern Basin Toolkit to undertake fish passage works at high priority sites in the Western region, focussing on the Barwon–Darling.</p> <p>Fish passage designs have been incorporated into the Wilcannia Weir Replacement Project.</p> <p>Early assessment and concept design activities have progressed as part of the Lower Darling Fish Passage Program and the Accelerated Fish Passage Project.</p>	<p>Continue the works which have commenced at the majority of sites, including feasibility assessments, business cases, design activities and on ground works as conditions allow.</p>	<p>Native fish passage</p> <p>Implement the NSW Fish for the Future by:</p> <ul style="list-style-type: none"> reconnecting 18 priority barriers in the Western region. Priority sites include Mungindi Weir, Camilaroy Weir, Presburys Weir, Banarway Weir No 4, Collarenebri Weir (5), Calmundy Weir (8), Bourke Weir, Darling River Weir (19A), Darling River Weir (20A), Louth Weir (21), Tilpa Weir (24), an Unlicensed weir on the Darling River, Wilcannia Weir, Burtundy Weir, Pooncarie Weir, Weir 32, and Lake Wetherell Levee and Lake Victoria Inlet Regulator advance project development, feasibility, designs and approvals commence construction and commissioning. <p>Develop a Monitoring, Evaluation and Reporting plan for monitoring post construction.</p>	<p>DPI Fisheries</p> <p>Water Infrastructure NSW</p>	<p>WaterNSW (and other asset owners)</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 2.5: Mitigate the impact of water infrastructure on native fish (continued)	Fish diversion screens The Fish-Friendly Water Extraction Project involves the collaboration of Government agencies, water users, irrigation engineers, local screen manufacturers and anglers to design, manufacture and install modern diversion screens at priority sites. Implementation of this project has commenced via targeted expressions of interest, manufacture procurement processes and on-ground works out to 2024. The project also complements the Fish-Friendly Screens for Efficient Use of Water project led by Local Land Services, which provides funding support to landholders in a targeted area of the Western region, including the Lower Darling for the installation of a fish-friendly diversion screen on their pump intakes.	Fish diversion screens Commence implementation of fish friendly diversion works at priority sites in the Western region.	Fish diversion screens Identify additional critical NSW pump sites that could benefit from fish diversion screens. Undertake a business case for these sites to be considered in future funding opportunities.	DPI Fisheries Local Land Services	Asset owners
	Extreme event management NSW Government has developed the NSW Native Fish Drought Response (NFDR) Program which is a strategic framework that outlines relevant policies, procedures, roles and responsibilities for the emergency management during and following drought.	Review and update the NFDR Program by 2022 to improve emergency preparedness and response actions, including related policy, research and development, habitat rehabilitation, and capacity building with local communities.	Complete the detailed identification and mapping of critical drought refugia in the Western region and identify critical dry watering requirements for these refugia.	DPI Fisheries	Local Land Services

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 2.5:</p> <p>Mitigate the impact of water infrastructure on native fish (continued)</p>	<p>The Western Weirs Strategic Business Case completed in 2021 identified that there may be connectivity and fish passage benefits in removing or upgrade some of the non-town weirs in the Barwon–Darling and Lower Darling rivers. However, further work would be required to identify these weirs and consultation would be required with affected stakeholders.</p>	<p>Upgrading or removing non-town weirs</p> <p>Seek funding to undertake a final business case project to upgrade or remove non-town weirs.</p> <p>Identify which non-town weirs could be upgraded or removed to provide environmental or connectivity benefits in the Barwon–Darling and Lower Darling rivers.</p> <p>Identify the users and affected parties and undertake consultation with these stakeholders to understand the implications of changing the weir.</p>	<p>Complete the final business case.</p>	<p>Water Infrastructure NSW</p>	<p>DPE Water</p> <p>DPI Fisheries</p>



Image courtesy of iStock. Menindee Lake, NSW.

Priority 3

Improving connectivity across the northern Basin

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
<p>Action 3.1:</p> <p>Publish critical dry condition triggers and seek to implement them in water sharing plans</p>	<p>In early 2020 the NSW Government imposed temporary water restrictions across the NSW northern Basin on commercial access, including floodplain harvesting, to protect the first major rainfall and inflows after the last drought.</p> <p>An independent review of this event recommended that the department publish triggers to provide guidance about when temporary water restrictions will be implemented after a prolonged dry period to improve transparency and certainty.</p> <p>As a result, a review was undertaken to clarify when critical dry conditions could trigger temporary water restrictions for critical human and environmental needs.</p> <p>Remote Sensing Project</p> <p>The Department of Planning and Environment – Water is currently undertaking a study to determine the feasibility of using remote sensing data to identify deteriorating conditions in refuge pools upstream of the Menindee Lakes. The objective of the study is to identify signals that can act as an early warning that pools are contracting to a point where the risk of fish kills and other water quality issue has escalated.</p>	<p>Publish critical dry condition triggers and investigate incorporating them in water sharing plans across the northern NSW Basin by the end of 2024.</p> <p>These triggers will be supported by additional actions to:</p> <ul style="list-style-type: none"> review the supplementary and B and C Class access rules to reduce the impact on water take resulting from the new and updated restrictions by allowing users to recoup the water lost during average or high flow seasons consult with licence holders and operators in the Lower Darling to reduce risk of large water orders drawing the lakes down to critical levels – this may need to be progressed through Extreme Event Guidelines repair the Pamamaroo inlet regulator consult with the Murray–Darling Basin Authority and the Commonwealth Environmental Water Holder and Basin States to recognise operational water from Lake Cawndilla down the Darling Anabranch (see Action 3.4). 		<p>DPE Water</p> <p>WaterNSW (Pamamaroo inlet regulator)</p>	<p>DPE Water</p> <p>DPE – Environment and Heritage Group</p> <p>WaterNSW</p> <p>DPI Fisheries</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 3.2: Finalise the review of the North-West Flow Plan to identify the best way to support algal suppression and fish migration	<p>The Department reviewed the flow targets in the North-West Flow Plan in the context of contemporary understanding of the ecohydrology of the Barwon–Darling system and the contemporary science documented in the Barwon–Darling Long Term Watering Plan.</p>	<p>Further investigate opportunities to removing physical barriers to improve fish migration, rather than flow targets aimed at flooding out weirs.</p> <p>Establish an expert panel to provide advice on the North-West Flow Plan review and consider the findings of the review as part of the Barwon–Darling Water Sharing Plan remake in 2024.</p>	<p>Investigate incorporating the outcomes of the North-West Flow Plan review in the relevant water sharing plans.</p>	DPE Water	<p>DPE Water</p> <p>WaterNSW</p> <p>DPI Fisheries</p>
Action 3.3: Further investigate ways to provide replenishment flows from the northern tributaries during dry periods			<p>Continue investigations to understand whether broader reform is needed for improving connectivity during dry periods to inform the review of the Murray–Darling Basin Plan.</p>	DPE Water	<p>DPE Water</p> <p>DPE – Environment and Heritage Group</p> <p>Murray–Darling Basin Authority</p> <p>WaterNSW</p> <p>DPI Fisheries</p>

Action	Our starting point	What we will do next	What we will do later	Lead	Supported by
Action 3.4: Progress investigations into changing the management of Menindee Lakes	<p>The delivery of environmental and other water orders from Lake Cawndilla via the Anabranh has been negotiated in the past as a one-off arrangement without altering NSW or Commonwealth legislation.</p>	<p>Change the management of Menindee Lakes</p> <p>Consult with the Murray–Darling Basin Authority and other jurisdictions on the proposal to release operational water down the Great Darling Anabranh under certain circumstances.</p> <p>Develop an operating protocol for endorsement by the River Murray Operations Committee that would clarify the circumstances in which NSW would seek to release operational water down the Great Darling Anabranh and how return flows would be accounted for under the Murray–Darling Basin Agreement.</p>	<p>Implement the protocol the next time water levels in lakes Menindee and Cawndilla are declining to ensure operational water can be released before becoming stranded.</p>	<p>DPE Water</p>	<p>DPE – Environment and Heritage Group</p> <p>Commonwealth Environmental Water Holder</p> <p>Murray–Darling Basin Authority</p> <p>WaterNSW</p> <p>DPI Fisheries</p> <p>DPE Water</p>
		<p>Develop a proposal to have inactive storage recognised as part of the triggers for control of the Menindee Lakes storage under the Murray–Darling Basin Agreement.</p> <p>Seek to have this proposal considered as part of the review of the Basin Plan in 2026.</p>	<p>DPE Water</p> <p>DPE – Environment and Heritage Group</p>		

Supporting activities

Table 1. Supporting activities

Action	Lead agency	What we'll deliver in the next 5 years
Reporting	DPE Water	Publish regular progress updates on delivery of the actions in the Western Regional Water Strategy Implementation Plan so that the community can track progress.
Monitoring and evaluation	DPE Water	Apply the framework developed for the NSW Water Strategy to monitor, review and report against the actions in the Western Regional Water Strategy.
Review	DPE Water	Undertake a formal review of the strategy at least every 5 years, or in response to changing circumstances. The formal review will ensure that the key assumptions, such as population and demographics, have not significantly changed.



Image courtesy of Destination NSW. Murray and Darling Junction, Wentworth.

