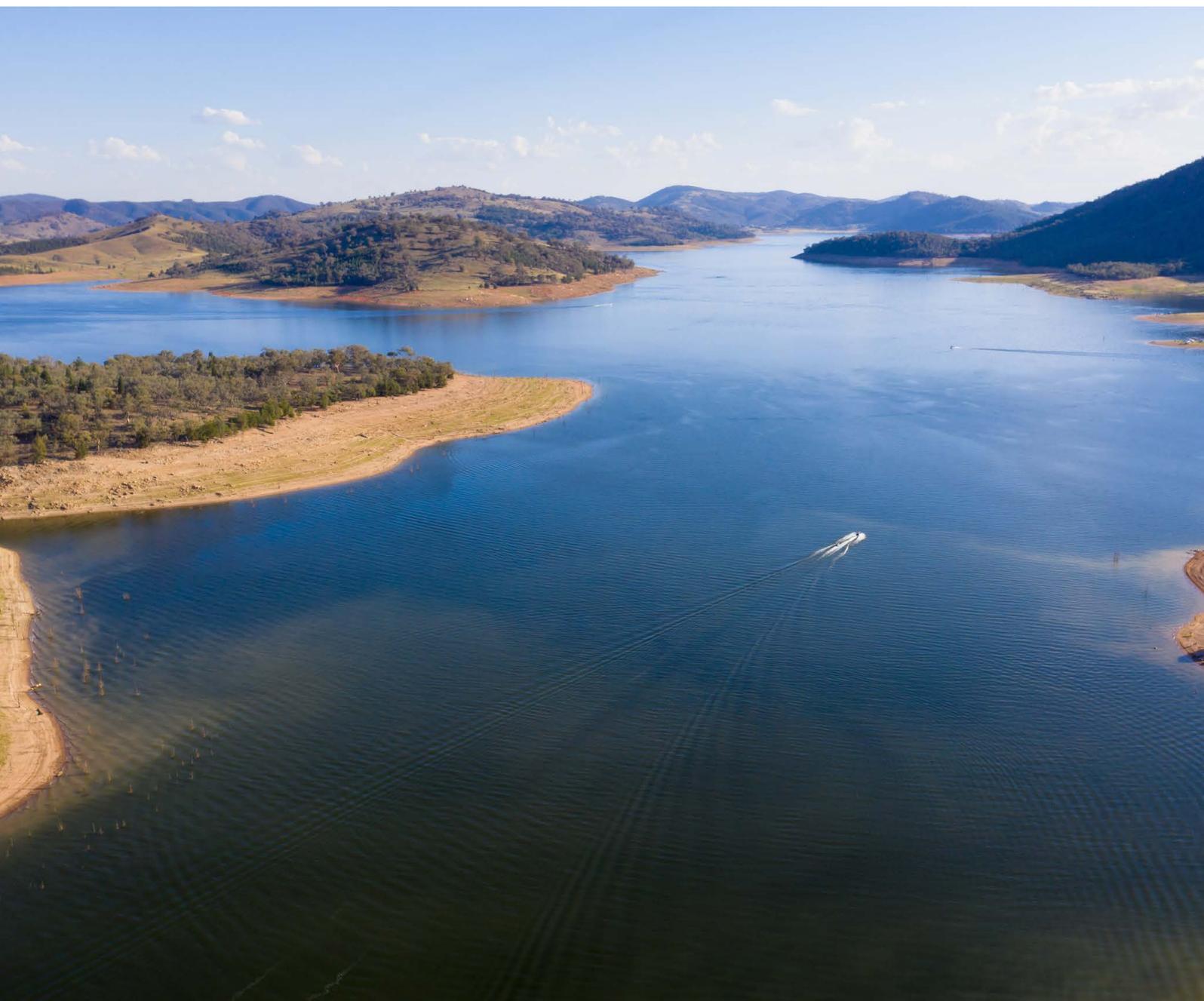


Draft Regional Water Strategy

Lachlan:
Shortlisted Actions – Executive Summary

October 2022



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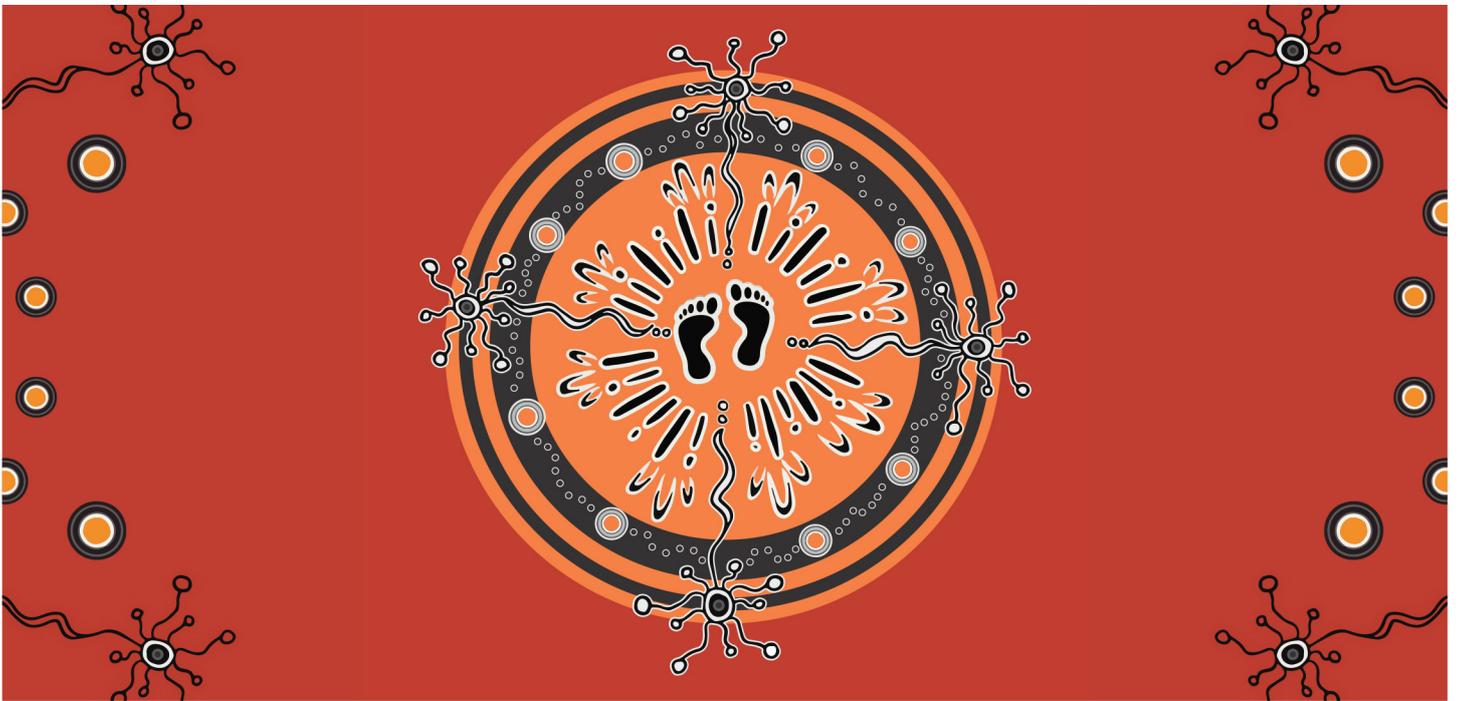
Cover image Image courtesy of iStock. Wyangala Dam, Wyangala NSW.

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 its first Australian People and the traditional owners and custodians of the country's lands and water. We have recognised that 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 practice the oldest living culture on earth.

The NSW Government acknowledges the First Nations People/Traditional Owners from the Lachlan Region as having an intrinsic connection with the lands and waters of the Lachlan 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 practice their traditional culture and lifestyle.

We recognise the Traditional Owners were the first managers of Country and by incorporating their culture and knowledge into management of water in the region is a significant step for 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, present and emerging 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 Traditional Owners/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/Traditional Owners hold a strong voice in shaping the future for Indigenous/Aboriginal and non-Aboriginal communities.

Artwork courtesy of Nikita Ridgeway.

The NSW Government is committed to the Lachlan region having healthy, reliable and resilient water resources, so it remains a place where people want to live, work and visit, both now and for future generations. To do this, we need to make the best use of existing water resources and prepare for future uncertainty presented by a more variable and changing climate.

The Lachlan region

The Lachlan region lies at the geographic heart of NSW and includes stunning natural landscapes that change from mountainous terrain in the east to flat alluvial plains in the west. The region is home to many vibrant towns and communities, productive agricultural and mining industries, critical ecosystems and nationally important and culturally significant wetlands, including the Lake Cowal-Wilbertroy Wetlands, the Booligal Wetlands and the Great Cumbung Swamp.

The region is located within the traditional lands of the Nari Nari, Ngiyampaa, Wiradjuri, Barkandji, Maljangapa and Yita Yita Nations. These Nations have been caretakers of the Lachlan region for over 60,000 years.

The Lachlan region has access to surface water and good quality groundwater for towns, recreational use, cultural and environmental needs, and industry. Due to the region's highly variable climate, groundwater is an important water source for the region.

The Lachlan region is no stranger to extreme weather events. Severe and prolonged droughts are frequently followed by extensive rainfall events that can lead to flooding. Over the last few years, we have seen extended and large-scale flooding across the catchment. These extreme events pose challenges for the region, its water resources and all water users.

Like other regions across Australia, the Lachlan region will likely face a more variable and changing climate in the future. We need to prepare now for the transition to a scenario where we may have more variable and potentially less water available. We also need to set actions in motion to make smarter decisions about our water use and management armed with better knowledge and information to protect our most critical water needs.

The Lachlan Regional Water Strategy provides an opportunity to develop a long-term strategic plan so that communities, the environment and industries can be better prepared for a future changing climate. This will help keep the Lachlan region an attractive place to live, work and visit.

The Lachlan Regional Water Strategy is being developed alongside several major infrastructure business cases, including the Wyangala Dam Wall raising Project and the Belubula Water Security Project. As the final business cases for these projects are being developed, we need to ensure that the Lachlan Regional Water Strategy remains adaptable so we can meet the future needs of all water users and the environment and capitalise on future opportunities in the region.



Image courtesy of Destination NSW. Bellevue Hill Lookout, Cowra.

Figure 1. Map of the Lachlan region

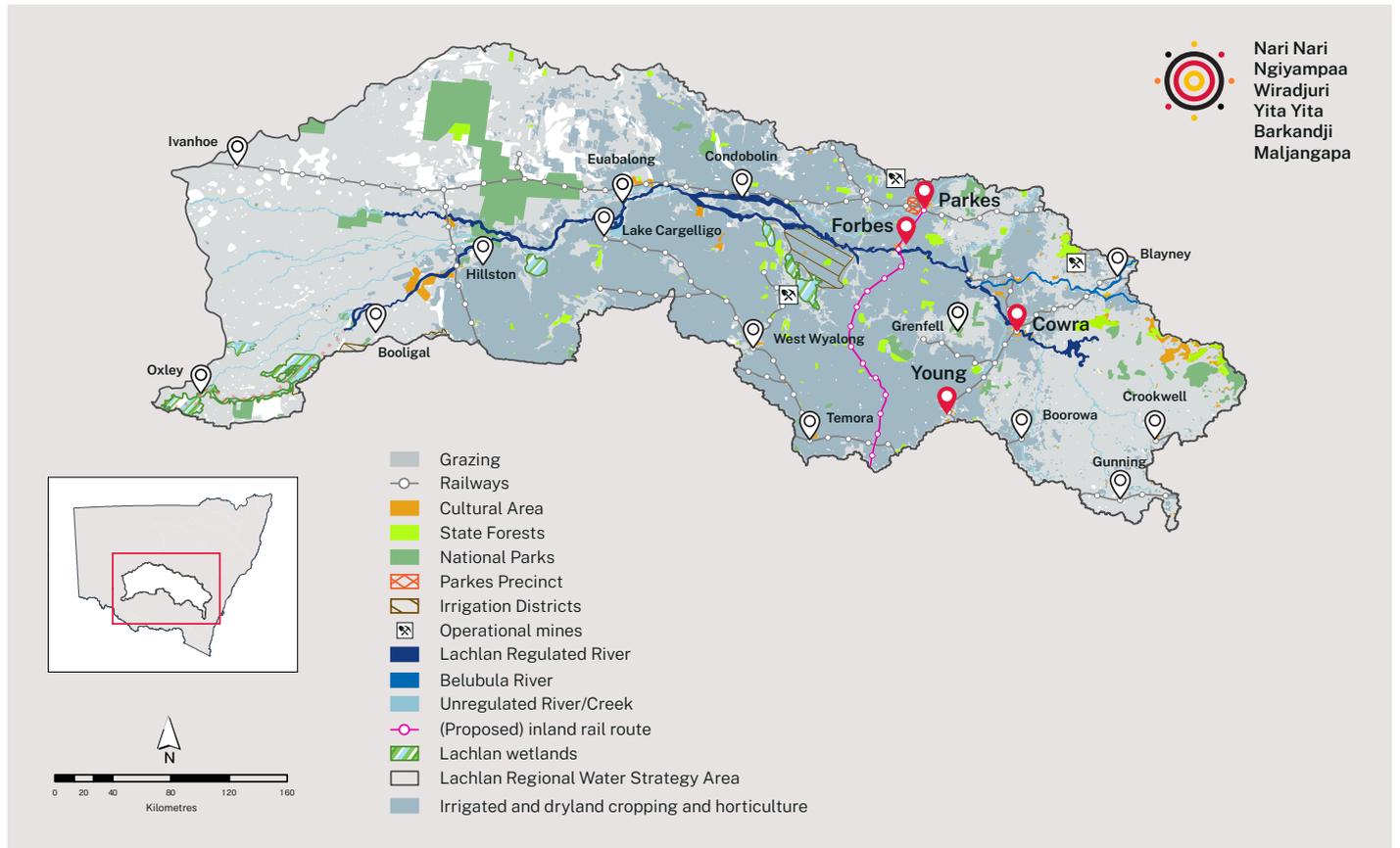


Image courtesy of Destination NSW. Lachlan River, Condobolin.

What is the purpose of the consultation paper?

The NSW Government is developing 12 regional water strategies that bring together the best and latest climate evidence with a wide range of tools and solutions to plan and manage each region's water needs over the next 20 to 40 years.

The first draft of the Lachlan Regional Water Strategy, including a long list of options, was released in September 2020.¹ Since then, we have taken on board stakeholder feedback, conducted further analysis to prioritise the challenges and shortlisted actions to help meet these challenges.

The consultation paper presents the outcomes of this work, which is summarised in Figure 4.

No decisions have been made on the shortlist of proposed actions. We are seeking your views on the best actions for the region before a final strategy and implementation plan are developed.



Image courtesy of Destination NSW. Hughie Cameron Park, Hillston.

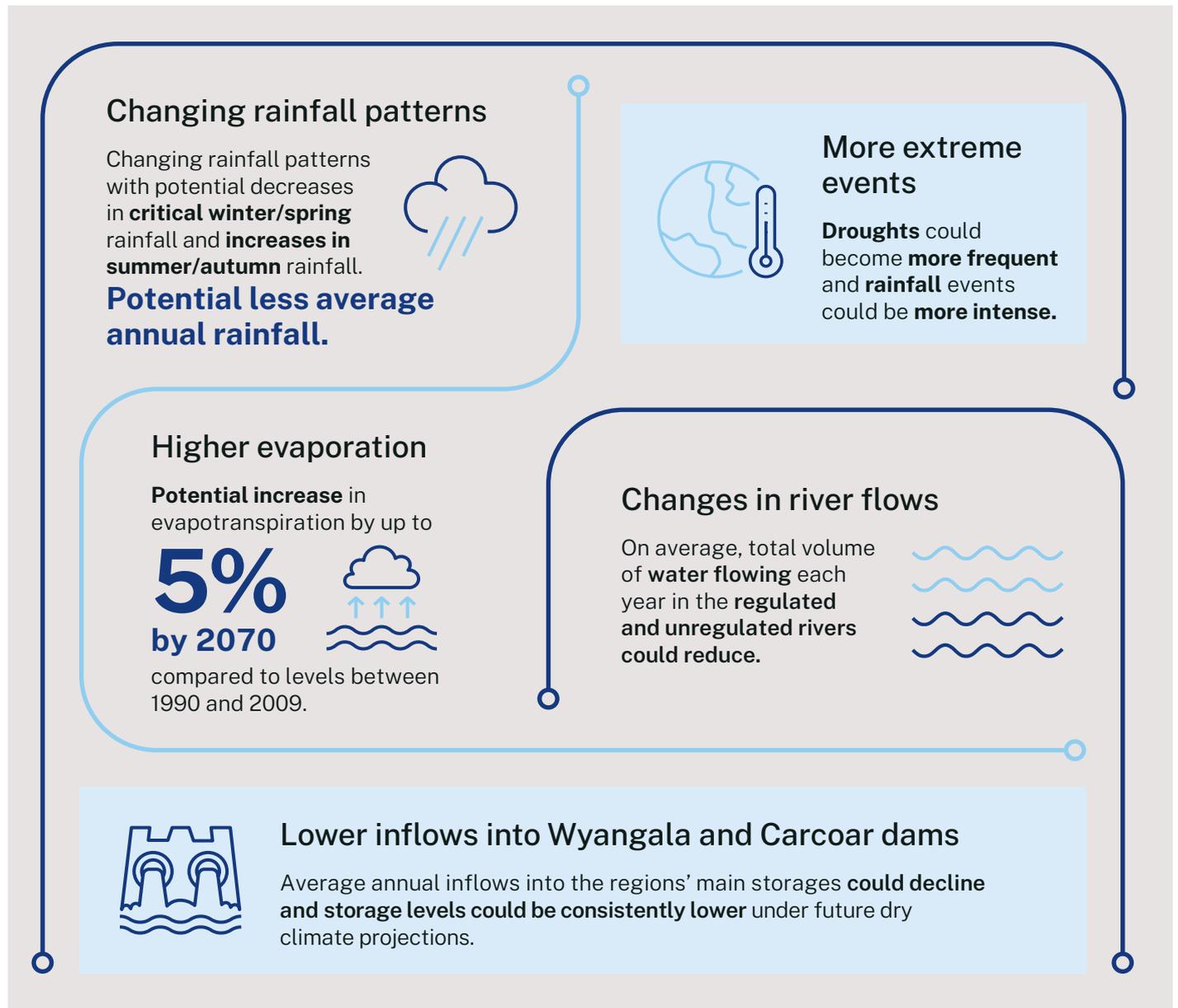
1. The Draft Lachlan Regional Water Strategy and long list of options can be viewed at: water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies/what-we-heard/lachlan-regional-water-strategy

What the future climate could look like in the Lachlan region

We don't know for certain what the Lachlan region's future climate will be like. It may be similar to what we have experienced in the past, or it may be more variable than we have seen in our lifetimes. Our analysis of different climate scenarios tells us that there could be more extreme events, hotter and longer droughts, higher evaporation rates, and more unpredictable rainfall events and variable river flows.

We need to plan for these uncertainties and continue to refine our understanding of the water-related risks in the Lachlan region to ensure people, the environment and industries can live and thrive in the future.

Figure 2. What the future climate could look like in the Lachlan region



What should we focus on first?

The Draft Lachlan Regional Water Strategy identified current and future water-related challenges and opportunities.² Following feedback from the public consultation and further technical analysis, we have identified 5 challenges that should be the immediate priority for the region. Other water-related challenges described in the Draft Lachlan Regional Water Strategy are also important and can be revisited in future reviews of the strategy, which are expected to occur every 3 to 4 years.



Managing water resources during more extreme events for people, industry, and the environment

Water management in the Lachlan is challenging due to the region's variable climate and the extensive, low-gradient river system, which is subject to high system losses. Future climate change is predicted to bring more extreme events, warmer temperatures and higher evaporation which will stress the system and give it less time to recover. This will also likely bring more variable river flows, impact groundwater recharge and influence water supplies to all water users, including towns and communities, industries and environmental water holders.

Droughts can limit the ability to deliver water to town off-take points and nationally significant wetlands. It can also result in multi-year low or zero water allocations to general security licence holders, which are mostly held by industry and environmental water managers. Towns and communities reliant on unregulated water sources could also experience greater risk of limited water supplies should unregulated streams experience more frequent low-flow or cease-to-flow periods.

Floods are also a regular feature of the Lachlan region, and the intensity of flood-producing rainfall events could increase under climate change. Given the flat landscape, many areas of the Lachlan region are subject to flood risk – either directly through road closure and damages to infrastructure or indirectly through poor water quality. However, floods also provide replenishing flows that support groundwater recharge and floodplain connectivity.



Improving water quality

Maintaining water quality is a key challenge for the Lachlan region as poor water quality impacts on ecological health, treatment costs for towns and industry productivity and has an effect on Aboriginal people's wellbeing and connection to Country.

Dissolved oxygen can be depleted during hypoxic black water events and harmful algal blooms – often caused by excessive nutrients – can lead to the death of aquatic plants and animals. Unseasonal temperatures can also directly contribute to fish deaths and high turbidity can reduce the light penetrating of the water column and stress benthic plants. Salinity (both dryland and instream) can impact on vegetation leading to erosion and high turbidity as well as increase salt loads beyond the tolerance level of some native plants and animals. Existing water infrastructure can also cause cold water pollution impacts which can reduce the range and abundance of native fish.



Addressing barriers to Aboriginal water rights

Aboriginal people in the Lachlan region have always been closely linked to rivers, creeks and groundwater sources, and their relationship to these water sources and wetlands is essential to culture, community and connection to Country.

Water management arrangements, a lack of water ownership, and poor access to waterways and culturally important sites; restrict Aboriginal people from fulfilling their cultural obligation to care for Country and fail to provide opportunities for Aboriginal people in the Lachlan region. Involving Aboriginal people more closely in decision-making processes around water management could enrich and improve our water-management decisions and in turn provide employment and economic advancement opportunities for Aboriginal people, including youth.

2. The Department of Planning and Environment, Draft Lachlan Regional Water Strategy available at, water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies/what-we-heard/lachlan-regional-water-strategy



Sustaining the health and resilience of the region's water dependent ecosystems

The river system, floodplains, swamps, aquifers and wetlands in the Lachlan region provide habitat for many aquatic species, including birds and native fish. The lower Lachlan floodplain is home to 8 nationally important wetlands, which feature areas of valuable river red gum forest and woodlands, blackbox woodland and lignum. Our challenge is to sustain the health and resilience of these natural assets and ecosystems now and into the future.

Existing water infrastructure, river operations and water extraction have influenced flow variability, water quality and the distribution of water throughout the catchment. These factors are causing stress on native species and aquatic environmental health, especially at the end of the system.

Based on the new climate risk modelling, the Lachlan region could see more changes to river flows, magnifying the impacts on riverine and floodplain ecosystems. Improving lateral connectivity would support water quality, system-scale productivity and drought refugia as well as improve conditions for native species and aquatic fauna.



Supporting economic growth and diversification

The industry profile in the Lachlan region is changing. Over the next 20 years, food processing and agriculture, mining and renewable energy production is expected to expand – aided in parts by upgrades to roads, transport links and government investments in the Parkes Special Activation Precinct. Our challenge is to support new and existing industries in the context of a variable and changing climate.

A key focus for the Lachlan region is to provide conditions that make the region an attractive place to invest. Although industries have adapted to the region's climate, the variability in allocations to general security entitlements can create uncertainties and may deter new industries – including high value industries – from settling in the region.

New emerging industries and regional population growth will also likely create greater competition for available water resources, including groundwater. An increase in groundwater demand could push extraction close to (or above) the allowable limit and pose risk to the long-term sustainability of groundwater sources.



Image courtesy of Destination NSW. Landscape, Cowra.

Addressing the challenges

In the future, our water sources and services may come under even greater stress. We need to use the knowledge we have gained during past extreme events to improve the way we manage our water resources so that communities, industries and vital natural assets in the Lachlan region can thrive.

The Lachlan Regional Water Strategy is being developed alongside several major infrastructure business cases, including the Wyangala Dam Wall Raising Project and the Belubula Water Security Project. As the final business cases for these projects are being progressed, we need to ensure that the Lachlan Regional Water Strategy is adaptable so we can meet the needs of the region and capitalise on future opportunities.

There is a limit to the amount of water that can be sustainably taken from rivers and groundwater sources without causing short- and long-term impacts, such as other users being deprived of reasonable access to water, and permanent damage to our vital ecosystems. Surface water and most groundwater sources in the Lachlan region are fully committed and some water sources are under stress.

The Lachlan Regional Water Strategy is an adaptable long-term strategic plan that is developed so that communities, the environment and industries can be better prepared for a future changing climate. While we may have to make some difficult choices, there are opportunities to advance the needs and aspiration of Aboriginal people in the Lachlan region; enhance town water security; support the resilience of industries; restore river, wetland and floodplain habitats; and support alternative water supplies that do not add further pressures to finite water resources.

We have identified 4 priorities to meet the challenges for the region. Each priority is supported by a suite of actions. In shortlisting these actions, we have considered our existing state and federal legislative requirements, including the requirements of the Basin Plan.



Priority 1: Build resilience to climate extremes

Actions under this priority focus on building resilience through a more holistic, inclusive and transparent approach to planning, whilst doing the groundwork to enhance water security in the region in case more extreme events materialise.

Aboriginal people have acquired a deep and intimate knowledge of landscape and water. Living in the driest inhabited continent on earth for many thousands of years, Aboriginal people have insights and experiences that could add significant value to strategic water planning and provide opportunities for Aboriginal people to have a stronger voice in water management. Genuine involvement based on the principles of free, prior and informed consent is essential to incorporate traditional knowledge and expertise into strategic water planning, whilst respecting the rights of Aboriginal people.

We have added a specific action to improve ongoing coordination and engagement with water supply authorities and local government to build on the work by the Town Water Risk Reduction Program. Relationships built between state and local government will be particularly important during future extreme events, and to carry forward the initiatives and actions shortlisted in the regional water strategy implementation plan.

In summary, the actions shortlisted under this priority will:

- build the resilience through better integrating regional and local strategic water management activities and improved coordination during extreme events
- improve our hydrological modelling capabilities, including scoping a program of works to build a new model for the upper Lachlan to investigate water security risks to towns and communities in the upper Lachlan
- support Aboriginal people to be more involved in water management, by better valuing their traditional knowledge and contributing to decision making
- improve our understanding of important groundwater sources and investigate opportunities to expand the existing regional water supply grid.

Priority 2: Ensure best use of existing water for the environment

There are significant and diverse wetland types along the Lachlan River, some of which are unique to the catchment. The NSW Minister for the Environment and the Commonwealth Environmental Water Holder hold and manage a portfolio of water entitlements for environmental outcomes.

Given the inherent challenges, constraints and uncertainty around water resource planning and management, environmental water managers have adapted to the prevalent conditions by using both preventative and responsive strategies to manage the needs of aquatic ecosystems. Watering events target a range of outcomes; from building resilience and promoting ecological restoration when water is abundant, to minimising loss or damage by maintaining drought refuges when water is scarce. A good understanding of the river system and ongoing communications with other water users and river operators are imperative to enable effective environmental watering events. Where possible, environmental managers work with communities, other water users, WaterNSW and Aboriginal people to take local actions that have catchment-wide outcomes and protect important environmental and cultural sites.

Held environmental water uses the same water access licence framework as consumptive users. However, as the watering requirements of environmental assets and functions in the Lachlan Long Term Water Plan are fundamentally different to other industries, management strategies differ accordingly. Environmental water is managed at a catchment scale and the use of held water is linked to availability and use of planned environmental water.

Challenges for the environment remain with poor water quality and changes to instream flows under long term climate change projections. In addition, water for the environment cannot always be used effectively when it is needed due to a range of constraints, or delivered to its best affect during dry times.

Actions under this category focus on:

- supporting natural resource management activities in the upper and lower Lachlan region
- addressing existing water quality issues in the region
- protecting important cultural assets and supporting co-benefit outcomes of the use of environmental water where feasible
- removing constraints and impediments to environmental water delivery.

Priority 3: Support economic prosperity in a capped system

The Lachlan region lies at the geographic heart of NSW, leveraging its position along nationally significant rail and road corridors that encourage further industry development as well as population and job growth. The industry profile of the Lachlan region is changing and new and expanding industries will drive further demand for water and increase competitive pressure on existing water resources.

Actions under this priority seek to strengthen the resilience of the regional economy to climate-related challenges by providing access to the new climate datasets, supporting industry adaptation efforts and backing research efforts to better understand water use in the region.

Additional actions under this priority seek to support water-related employment, training and economic opportunities for Aboriginal people. These opportunities will help to meet the priorities and actions of the NSW Water Strategy, support the state-wide Aboriginal Water Strategy and align with NSW's commitment under the Basin Plan.

Actions shortlisted under this priority focus on:

- facilitating access to data and information to assist industry to better assess risks and develop mitigation strategies
- exploring water use and water demand of the region's industries and their resilience to a more variable and changing climate
- advancing economic opportunities for Aboriginal people and developing culturally appropriate placed-based initiatives
- improving our hydrological modelling capabilities to pursue further analysis on a range of infrastructure options that could improve system efficiencies and enhance reliability in the region.

Priority 4: Improve our knowledge of water resources

We want to have a conversation with communities about how we should share water resources during times of scarcity and abundance. The NSW Government has, in consultation with communities, developed an Extreme Events Policy and regionally specific incident response guides. Together with recent initiatives from the 2017–2020 drought, we have developed a comprehensive toolkit of measures that can help us manage droughts.

Our new climate research provides an opportunity to enhance this work and ensure it is fit-for-purpose for addressing and mitigating more extreme conditions in the future. It also provides us with an opportunity to explore more flexible approaches to our water allocation and accounting framework that could help us proactively respond to prevalent climate conditions whilst ensuring water use remains within existing extraction limits.

With the development of the NSW Groundwater Strategy, we have an opportunity to improve our understanding of the region's groundwater sources and how groundwater and surface water interacts in the Lachlan catchment. In this context, we need to enhance our modelling capabilities to better understand the impact of climate change on groundwater sources in the region.

Closer integration of land and water planning and the development of valley-wide floodplain management plans will be equally critical to better protect our water resources and the environment as well as better manage growth in the region. For example, mechanisms that would help inform water resource constraints or risks to water resources early in the land planning process would avoid non-strategic growth in areas with existing water availability or access constraints. It would also help us to better manage water quality incidents in the catchments, which impact on all water users in the region.

Actions under this category focus on:

- improving our understanding and management of groundwater resources in the Lachlan region
- updating existing floodplain management plans so they are better integrated and meet our legislative requirements
- better integrating water and land management planning to protect water resources in the Lachlan region.



Image courtesy of Destination NSW. Parkes Railway Station, Parkes.

The proposed actions to support these priorities are in Attachment A. We want your views on whether these actions are the best way to prepare the region for the future.

These proposed actions can help to position the Lachlan region for a future where well-managed, sustainable water resources are available for thriving communities, towns, industries, places and ecosystems. They can give us a better understanding of the vulnerability of the region, put in place measures to improve the region's resilience and establish the conditions for using our existing water resources more efficiently, effectively and sustainably.

Implementing some of the actions may involve difficult decisions that may impact when water is available for different uses. Many of the proposed shortlisted actions will need more detailed analysis and engagement. By starting to consider the benefits and implications of implementing the actions now, we will be in a better-informed position to make difficult decisions, should the need arise.

When will the actions be implemented?

A critical feature of the final Lachlan Regional Water Strategy will be to identify clearly what actions and investments are needed now and those that will or may be needed further into the future. The strategy considers a 20-year timeframe aiming to chart a progressive journey that enables us to meet existing challenges, identify and prepare for foreseeable and emerging challenges and lay the foundations for adapting to future uncertainties and changed circumstances.

Following public consultation, we will develop an implementation plan that sets out when we plan to commence each action and what we plan to achieve by when. The implementation plan will also identify key partners in delivering these actions, including local councils, government agencies, local community and industry groups and local Aboriginal communities.

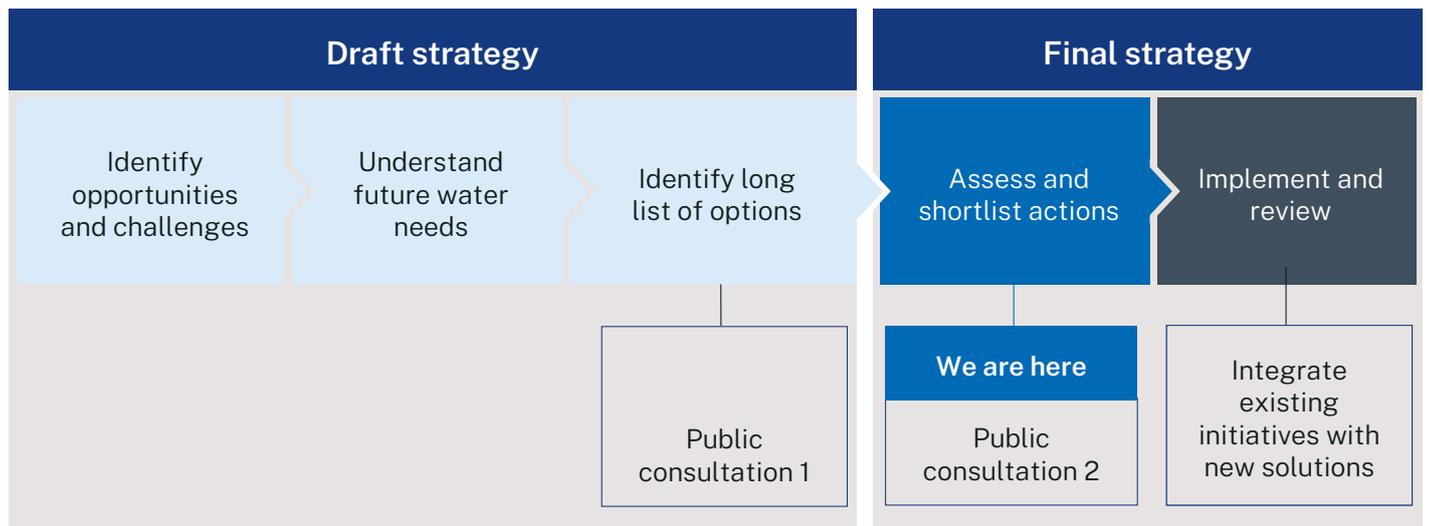
Not all actions will be commenced at once. The availability of funding and the progress of existing government commitments will be a key consideration in planning when and how the actions will be implemented. The regional water strategies will be a key tool in securing funding as future opportunities arise.

We want your feedback on which actions should be prioritised for implementation over the next 3 to 5 years, and which ones should be implemented in the medium and longer term.



Image courtesy of Kevin Roche. Lachlan River.

Figure 3. Lachlan regional water strategy delivery timeline



Have your say

Your voice is important. The Lachlan Regional Water Strategy: Shortlisted Actions – consultation paper is on public exhibition in October – November.

You can also have your say by providing written feedback to the Department of Planning and Environment via:

Web: dpie.nsw.gov.au/lachlan-regional-water-strategy

Email: regionalwater.strategies@dpie.nsw.gov.au

We would also be interested in your thoughts on:

- whether any of the proposed actions in this consultation paper should not be shortlisted and why?
- how the proposed actions should be staged and which actions should be implemented first?

Please note that all submissions will be published on the Department of Planning and Environment’s website, unless you let us know in your submission that you do not wish the content to be released.

We will be holding community engagement sessions to give participants an understanding of the context for the regional water strategy and an overview of the key proposed priorities and actions. Face-to-face sessions will be held subject to COVID-19 restrictions and risks; otherwise, they will be held online. Details of these sessions can be found at the website.



Image courtesy of Destination NSW. The Swinging Bridge, Canowindra.



Image courtesy of Destination NSW. Windmill, Booligal.

Attachment A: Lachlan Regional Water Strategy – shortlist of proposed actions

Figure 4. Proposed water security challenges and priorities for the Lachlan region

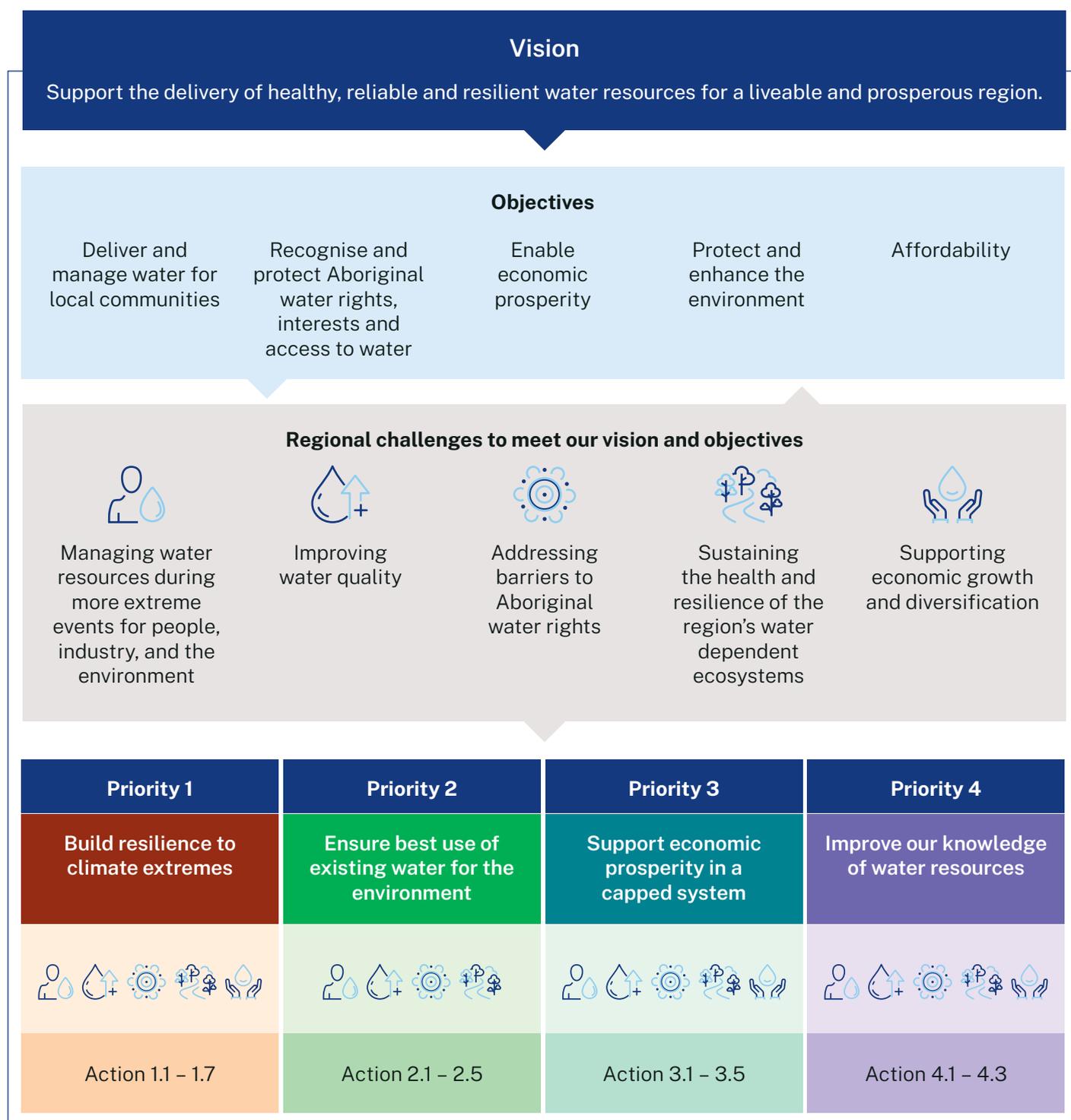
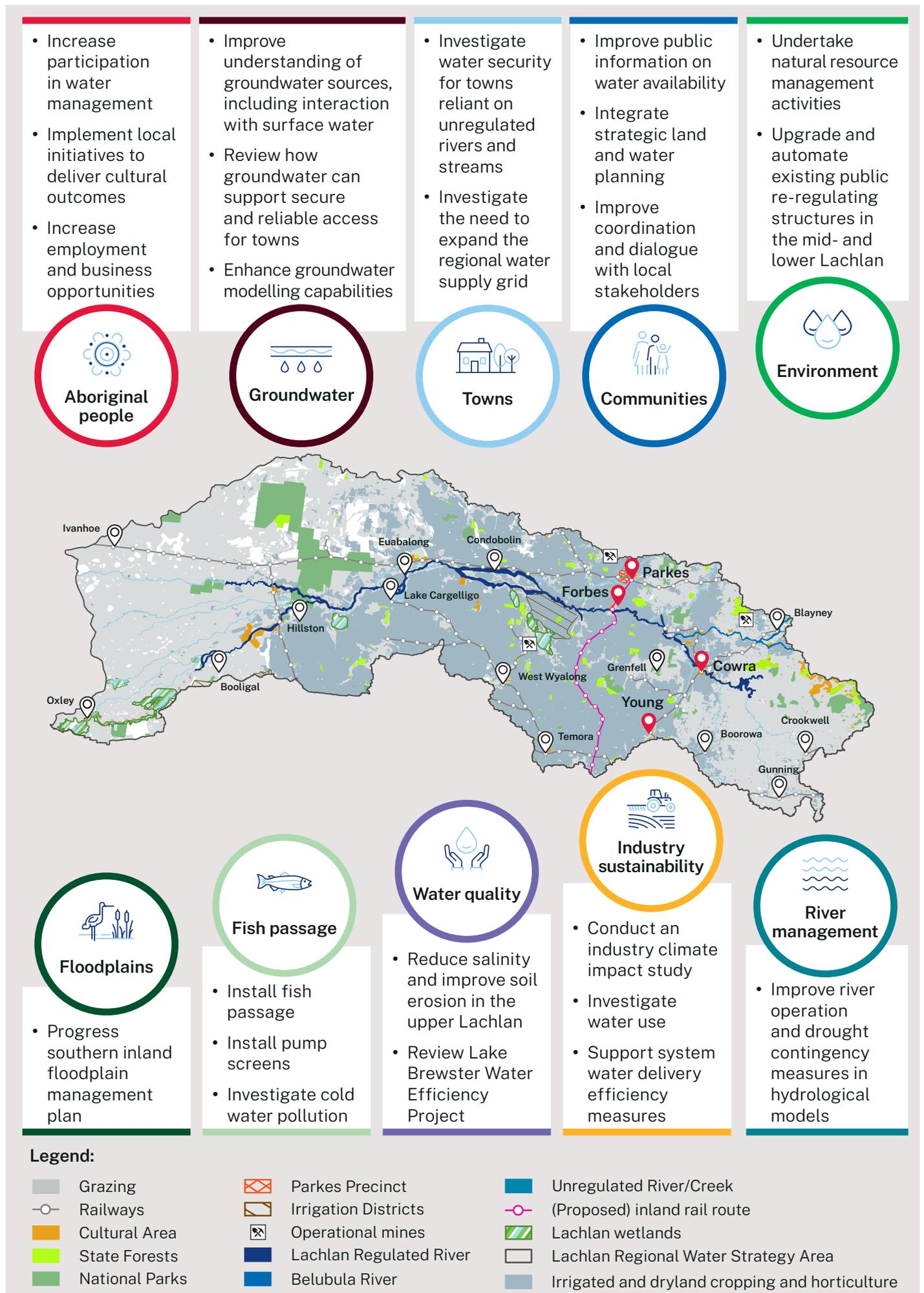


Figure 5. Lachlan Regional Water Strategy – Shortlisted actions



Priority 1

Build resilience to climate extremes

Legend



Managing water resources during more extreme events for people, industry, and the environment



Improving water quality



Addressing barriers to Aboriginal water rights



Sustaining the health and resilience of the region's water dependent ecosystems



Supporting economic growth and diversification

Proposed action	Summary	Challenges addressed
Action 1.1 Establish a governance framework to coordinate actions under Priority 1	Establish a governance framework and arrangements in consultation with local councils and local water utilities in the Lachlan region to support the coordination of water-related actions under Priority 1, and improve coordinated, timely decision-making during extreme events.	 
Action 1.2 Upgrade the existing hydrological models for the Lachlan catchment to better represent river operations and drought contingency measures	Improve the representation of river operations and drought contingency measures in the Department's hydrological model for the Lachlan Regulated River in order to investigate options to optimise system-wide operations across the catchment and inform future environmental water management decisions.	   
Action 1.3 Develop ongoing arrangements for participation of local Aboriginal people in water management	Support existing and new Aboriginal groups to develop an Aboriginal Water Advisory Committee in the Lachlan for involvement in water management activities and decision making.	 
Action 1.4 Support place-based initiatives to deliver cultural outcomes for Aboriginal people	Support Aboriginal organisations and communities to develop tailored projects for their communities. This action would aim to move away from centralised decision-making and develop a flexible program that can be adapted and is driven by the principle of self-determination and collaboration.	
Action 1.5 Support groundwater use for towns and communities	Undertake a detailed review of how groundwater can support secure and reliable water access for towns in the Lachlan region.	 

Proposed action	Summary	Challenges addressed
<p>Action 1.6 Investigate water security for small and remote communities</p>	<p>Investigate the merit of building a new hydrological model for the upper Lachlan (above Wyangala Dam) and utilise the new regional water strategy climate datasets to better understand the water security risks for small towns and communities in the upper Lachlan region.</p>	 
<p>Action 1.7 Investigate the need to further expand the regional water supply grid</p>	<p>Explore, in partnership with relevant local councils, the expansion of the regional water supply grid. This could include strategic upgrades to existing major distributors and work that could help link parts of the pipeline distribution network.</p>	 



Image courtesy of iStock. Lachlan River, Reids Flat.

Priority 2

Ensure best use of existing water for the environment

Legend



Managing water resources during more extreme events for people, industry, and the environment



Improving water quality



Addressing barriers to Aboriginal water rights



Sustaining the health and resilience of the region's water dependent ecosystems



Supporting economic growth and diversification

Proposed action	Summary	Challenges addressed
Action 2.1 Reduce salinity and soil erosion in the upper Lachlan and Belubula catchment	Prioritise rehabilitation areas to improve soil retention on site and reduce sediment and salt transfer to waterways in the upper Lachlan and Belubula catchments in partnership with local groups such as Landcare.	
Action 2.2 Protect and rehabilitate regionally significant riparian and instream habitats in the regulated Lachlan River	Build on existing land management programs and other local initiatives to support whole-of-catchment programs to improve river health and ecosystem resilience in the Lachlan River downstream of Wyangala Dam.	
Action 2.3 Upgrade and automate existing public re-regulating structures in the mid- and lower Lachlan to build the functional resilience of critical ecosystems	Progress a system level assessment of existing re-regulating structures in the mid- and lower Lachlan with a view to identify critical infrastructure upgrades and undertake a feasibility study to assess the merit of constructing a new weir in the lower Lachlan.	
Action 2.4 Mitigate the impact of water infrastructure and disruption of natural flows on native fish	Progress work to seek the installation of fish passages at priority barriers in the Lachlan region and build on existing government commitments, which continue to encourage and incentivise the installation of diversion screens at priority sites.	
Action 2.5 Review and evaluate the Lake Brewster Water Efficiency Project	Review and evaluate the adaptive management processes associated with the Lake Brewster Water Efficiency Project and investigate ways to fully fund the implementation of monitoring and evaluation plans.	



Image courtesy of iStock. Township, Forbes.

Priority 3

Support economic prosperity in a capped system

Legend



Managing water resources during more extreme events for people, industry, and the environment



Improving water quality



Addressing barriers to Aboriginal water rights



Sustaining the health and resilience of the region's water dependent ecosystems



Supporting economic growth and diversification

Proposed action	Summary	Challenges addressed
<p>Action 3.1 Improve public access to climate information and water availability forecasts</p>	<p>Improve existing platforms and products to provide information about water availability and climate change in a format tailored for water users and their business planning needs in the Lachlan region.</p>	
<p>Action 3.2 Investigate water use in the Lachlan region</p>	<p>Undertake a detailed investigation into water use and water user behaviour in the Lachlan region. This work is a precursor to investigate how surface water use in the Lachlan Regulated River Water Source tracks against the water sharing plan extraction limits.</p>	
<p>Action 3.3 Undertake a climate impact study</p>	<p>Undertake, in consultation with industry, a comprehensive long-term study of the impacts of climate variability and climate change on future water availability to determine the resilience of water dependent industries to future climate change – including understanding the socio-economic impacts on secondary industries.</p>	
<p>Action 3.4 Support employment and business opportunities for Aboriginal people in the Lachlan region</p>	<p>Support Aboriginal business development opportunities in the Lachlan region, some of which may require access to water.</p> <p>This action would also investigate ways to expand water-related employment opportunities for Aboriginal people in the Lachlan region, including by establishing cultural water officers and/or river rangers.</p>	

Proposed action	Summary	Challenges addressed
<p>Action 3.5 Support system water delivery efficiency measures</p>	<p>Upgrade the Department’s hydrological model to better represent the effluent streams in the mid-Lachlan to undertake a more detailed assessments of the benefits and costs of the mid-Lachlan efficiency measure option.</p> <p>In addition, continue the conversation with industries and communities in the Lachlan for ways to enhance water efficiency measures in the region.</p>	



Image courtesy of Amanda Ind. Condobolin, NSW.

Priority 4

Improve our knowledge of water resources

Legend



Managing water resources during more extreme events for people, industry, and the environment



Improving water quality



Addressing barriers to Aboriginal water rights



Sustaining the health and resilience of the region's water dependent ecosystems



Supporting economic growth and diversification

Proposed action	Summary	Challenges addressed
<p>Action 4.1 Improve the understanding and management of groundwater resources in the Lachlan region</p>	<p>Improve the understanding of groundwater sources and processes as well as demand on groundwater sources in the Lachlan region. This would involve progressing the scientific understanding of groundwater recharge rates and patterns, water level dynamics, connectivity between groundwater and surface water, and how this understanding can inform better groundwater management approaches, including under a changing climate. This action will also seek to improve our groundwater modelling capabilities.</p>	
<p>Action 4.2 Update southern inland floodplain management plans and audit floodplain structures</p>	<p>Develop valley-wide, connected floodplain management plan for the Lachlan region and help identify current floodplain works that do not meet the plan requirements.</p>	
<p>Action 4.3 Better integrate strategic land and water planning</p>	<p>Work across government to better integrate future strategic land use and water planning so that water resources can be considered upfront in future land use planning processes. This action would also consider projected population and industry growth trends and identify water-related gaps in the current land use planning framework.</p>	

