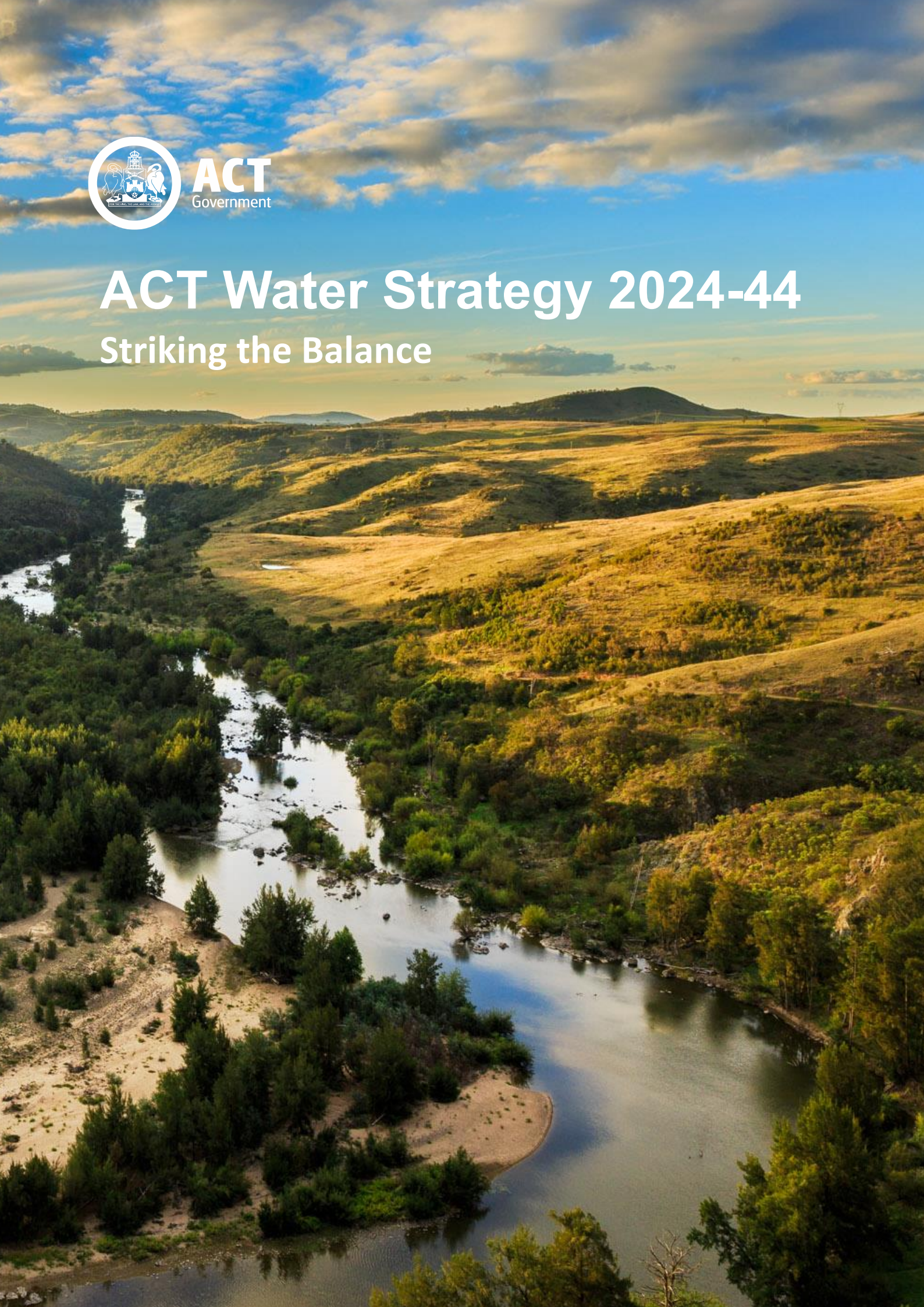
ACT Government

ACT Water Strategy 2024-44

Striking the Balance



Acknowledgement of Country

The ACT Government acknowledges the Ngunnawal people as traditional custodians of the ACT and recognises any other people or families with connection to the lands of the ACT and region. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

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The ACT Water Strategy at a glance

Vision

Working together, managing water wisely to support a vibrant, sustainable and thriving region

By 2044 and beyond:

Outcome 1: Healthy catchments and waterbodies

Well managed, climate resilient and functioning catchments and waterbodies that support the liveability and environmental values of the ACT

Outcome 1 aspiration statements

1.a Water sensitive urban landscapes: Urban landscapes are water sensitive, where urban development, stormwater and wastewater are managed to:

- Support urban greening, cooling, recreation, public health and amenity
- Protect the health of waterbodies, and
- Support flood risk management.

1.b Healthy waterbodies: Waterways, lakes, riparian zones and catchments support healthy flora and fauna populations; provide wildlife habitat and corridors; support drinking water supply and public health; support recreational and cultural values; and are resilient to climate change and flood impacts.

1.c Water for the environment: We continue to support sustainable water use while meeting the current and future critical environmental water needs of surface and groundwater dependent ecosystems.

1.d Integrated land and water management: Urban development, rural land, and catchments are managed at a regional scale using a whole-of-system, multidisciplinary and integrated approach.

By 2044 and beyond:

Outcome 2: Sustainable water resources used efficiently

The ACT has an integrated, sustainable and climate resilient water system that meets the diverse water needs across the ACT

Outcome 2 aspiration statements

2.a Water for future generations: We have a secure, climate-resilient water supply that meets the current and future water needs of the ACT. The ACT has water to support:

- Reliable, accessible drinking water that is used efficiently
- Ecological health of waterbodies and catchments
- Cultural and recreational values
- Efficient non-potable water use, and
- Sustainable population growth and development.

2.b Diverse water sources: Water needs are met by optimising the use of all available water sources, and through water conservation and efficiency.

2.c Regional approach: Regional water security is supported through collaborative efforts from the ACT, NSW and Commonwealth governments and communities within the ACT and region catchment area.

By 2030 and beyond:

Outcome 3: A community that values water and enjoys clean, healthy catchments

An engaged ACT community that values water and proactively cares for catchments, water resources and waterbodies to support actions that deliver safe, clean water for drinking, recreation, the environment and to support cultural values

Outcome 3 aspiration statements

3.a Community water knowledge: An understanding of the local and regional water context is an ongoing part of living in the ACT and underpins the community valuing water and engaging on water related issues.

3.b Dynamic information sharing: There is an ongoing, interactive knowledge exchange within and between the water sector and the community, allowing the community to easily find information and contribute ideas, observations, insights and perspectives on water matters.

3.c Community valuing water: The community understands the value of water to the ACT and region catchment area, and the challenges associated with managing water resources and protecting our catchments.

3.d Community input into decision-making: Community values and input informs decision making in water and catchment management, planning and investment.

3.e Community benefit and partnerships: Opportunities for projects and programs to enhance community benefit are identified and embedded in design and delivery. This includes opportunities to deliver projects or programs in partnership between the community and the water sector.

By 2044 and beyond:

Outcome 4: Caring for water with Traditional Custodians

Traditional Custodians are partners in water planning, policy and management, and have access to water guided by self-determined priorities

Outcome 4 aspiration statements

4.a Water policy, planning and management: Traditional Knowledge, rights, interests and aspirations of Traditional Custodians are incorporated in water policy, planning and management in the ACT.

4.b Partnerships: Traditional Custodians and the ACT Government work in partnership to support healthy catchments and waterbodies.

4.c Traditional values and uses: Cultural values and uses are integrated into water planning and management through knowledge sharing and capacity building.

4.d Self-determination and economic participation: Traditional Custodians own, manage and access water that empowers economic self-determination through:

- Access to water entitlements and licences consistent with the National Agreement on Closing the Gap
- Effective governance arrangements, education and knowledge sharing on water resource management, and
- Increased employment of First Nations people in the ACT water sector.

Implementation plans (every five-years)

Strategic pathways and timeframes under each outcome

Strategy enablers

Monitoring, evaluation and reporting mechanisms

Introduction

Water is critical to the liveability of the ACT and region catchment area. It sustains our community through high-quality drinking water and water for our homes, gardens and businesses. Waterbodies across the ACT support important environmental values and ecosystem services, while also providing opportunities for recreational and cultural activities. The ACT's catchments and waterbodies hold great significance for Ngunnawal Traditional Custodians, and other people or families with connection to the lands and waters of the ACT and region.

We face a range of challenges in water use and waterbody management such as climate change, a growing population and urbanisation, all of which are leading to increased pressures on our waterbodies and water resources and will require changes in how we manage water. The Territory's water infrastructure is also ageing, including both ACT Government and Icon Water assets. Collectively, these trends are expected to reduce the reliability of our water resources, increase the demand for water and, without mitigation, increase the degradation of waterways and lakes. However, through appropriate and coordinated water management and investment, we can collectively respond to these challenges and achieve better water outcomes for the Territory.

This strategy outlines the strategic direction for water management in the ACT and provides high-level guidance to 2044. The strategy sets a vision to be achieved through four outcome areas, and outlines aspiration statements for each outcome.

Vision: Working together, managing water wisely to support a vibrant, sustainable and thriving region.

- Outcome 1: Healthy catchments and waterbodies
- Outcome 2: Sustainable water resources used efficiently
- Outcome 3: A community that values and enjoys clean, healthy catchments
- Outcome 4: Caring for water with Traditional Custodians

Implementing the strategy

Specific actions, responsibilities and delivery timeframes will be included in implementation plans updated every five years by the ACT Government with input from the water sector. The implementation plans will support an adaptive management approach and include monitoring, evaluation, and reporting mechanisms. The implementation plans will also identify enablers that support the delivery of the strategy, such as clear governance and a well-coordinated and collaborative water sector. The ACT Government will publish annual report cards outlining the progress of actions specified under the current implementation plan.

Every five-years the ACT Government will produce an evaluation report to inform the preparation of the next implementation plan. The evaluation reports will assess the impact the previous implementation plan had on each outcome, with a focus on the evaluation themes specified in this strategy, and any other matters requested by Government. The evaluation reports will also identify the progress and achievements of actions identified in the previous implementation plan.

This strategy will support us in working together to achieve better water outcomes for the Territory, guided by the strategy's vision. It is only through a collaborative and coordinated effort that we will be able to achieve the outcomes and aspirations of this strategy.

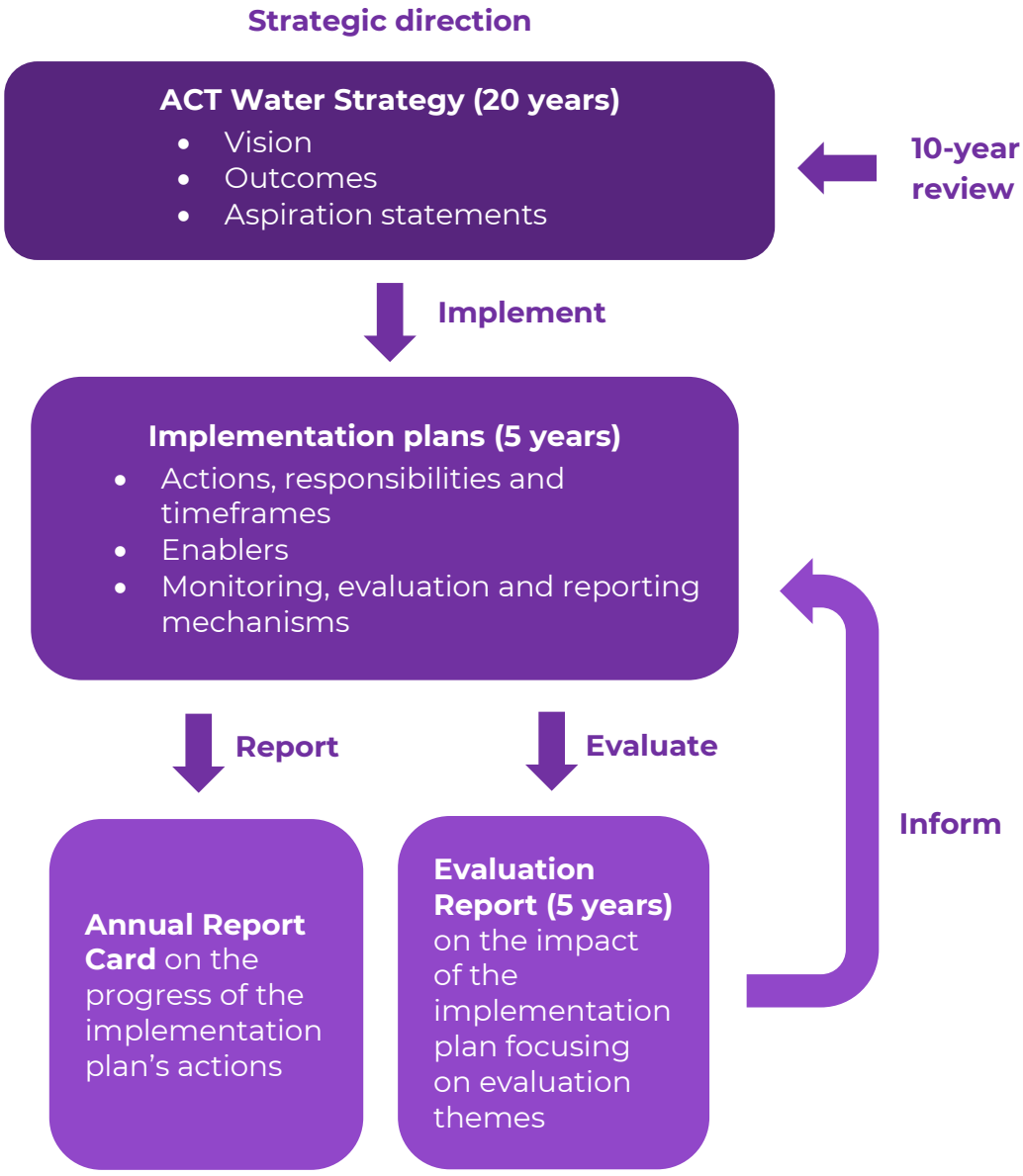


Figure 1 Framework of the refreshed ACT Water Strategy

Previous ACT Water Strategy 2014 to 2024

The ACT Water Strategy 2014-44: Striking the Balance (the 2014 ACT Water Strategy), provided strategic guidance on a wide range of water management activities in the Territory, including but not limited to, catchment management, stormwater and flood management, water supply and services, water for the environment, recreational water use, and public health. Since 2014, initiatives have supported improved water security and management outcomes for the ACT, include:

- Increasing the capacity of water storages by approximately 35% from 205 gigalitres (GL) to 278 GL since 2012
- Adding new water sources, including stormwater harvesting and reuse as part of the Inner North Reticulation Network
- Overseeing major reductions in demand on water resources through increased efficiency as a result of Water Sensitive Urban Design (WSUD) and permanent water conservation measures
- Continuing community involvement in caring for waterbodies through programs such as Waterwatch and the Leaf Collective
- Increasing Traditional Custodian engagement and participation as part of developing the ACT Water Resource Plan and by conducting Aboriginal Waterway Assessments
- Supporting regional coordination on water matters through the ACT and Region Catchment Management Coordination Group, and
- Introducing 28 wetlands and other water quality assets under the ACT Healthy Waterways program.

As part of the 2014 ACT Water Strategy's 10-year review, the following opportunities for improvement were identified:

- Strengthening monitoring, evaluation, reporting and accountability mechanisms
- Simplifying the strategy's framework, and
- Supporting the capacity and capability of the water sector to implement the strategy.

The ACT Water Strategy 2024-44 builds on implementation to date and reflects the improvements identified in the review as well as responding to trends such as climate change, a growing population and urbanisation, which are leading to increased pressures for our waterbodies and water resources.

Water in the ACT in 2024

A regional overview

The ACT is situated entirely within the upper Murrumbidgee River Catchment and the Murray-Darling Basin (MDB). The Territory has a varied landscape including densely populated urban areas, nature reserves, national parks and waterbodies including a protected water supply catchment. There is also some agricultural land with sheep farming, dairy cattle, vineyards, and small areas of cropping.

The main watercourses of the ACT are the Murrumbidgee, Molonglo and Cotter rivers. The Murrumbidgee and Molonglo rivers originate in NSW and pass into the ACT, where they converge and flow through the ACT. The Cotter River originates within the ACT and flows into the Murrumbidgee River. All surface water that passes through the ACT flows into the Murrumbidgee River before flowing into NSW and downstream to the connected southern MDB. Within the ACT there are also several natural freshwater wetlands, which are typically located near major rivers and creeks.

Groundwater resources in the ACT are relatively small compared to other areas in Australia. In the ACT, aquifers fall into two types: aquifers in fractured rock and aquifers in alluvium. Both are relatively shallow and virtually all water that infiltrates to the groundwater system eventually exits into streams.



Figure 2 Pine Island

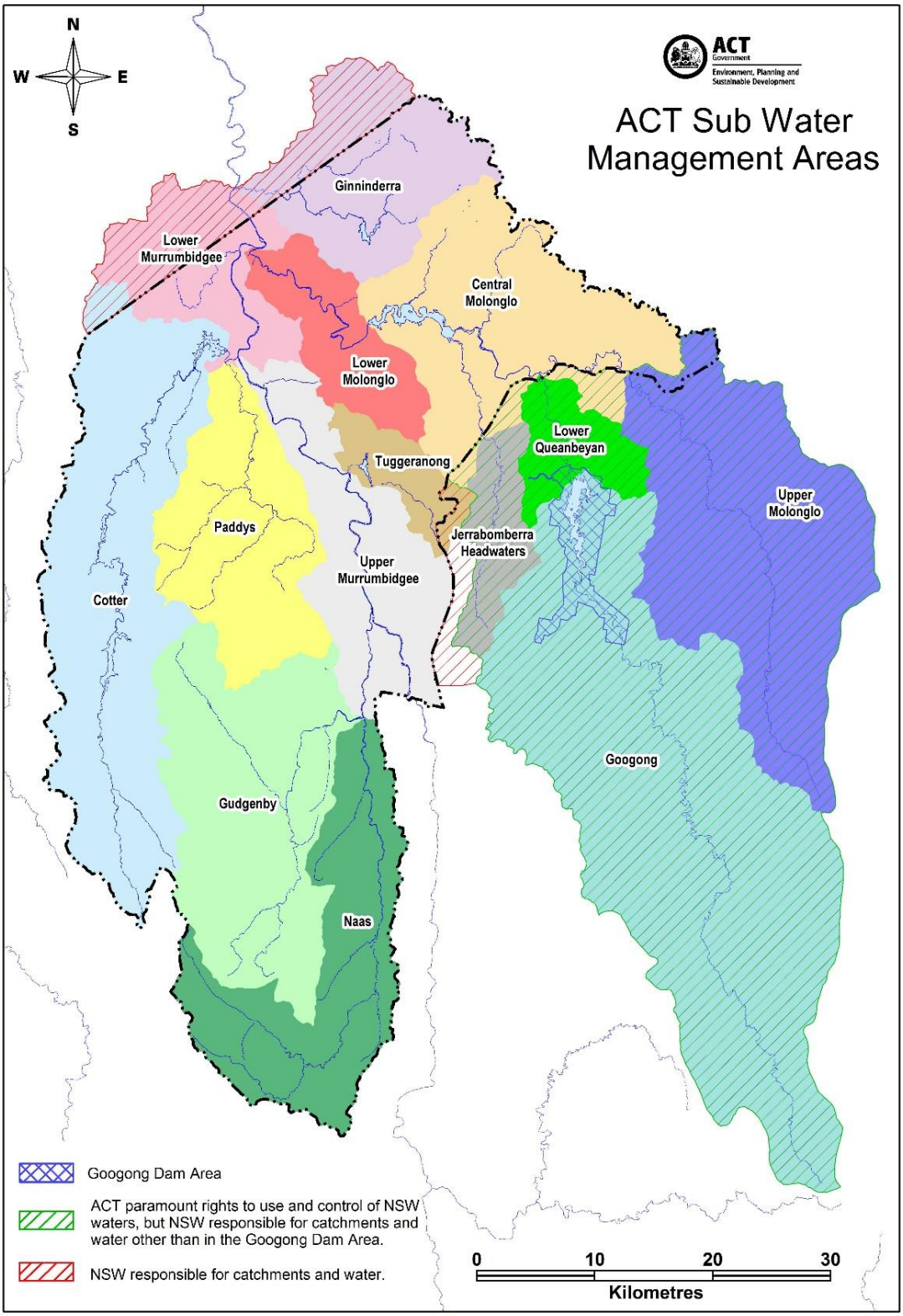


Figure 3 ACT water management areas as identified under the Disallowable Instrument Water Resources (Water management areas) (DI2019-38) as per the Water Resources Act 2007 *(ACT)*

Water management legislative and policy instruments

Water management in the ACT is undertaken in the context of Commonwealth, regional and territory government legislation, policy and agreements. Key legislative and policy instruments across these levels are shown below (Table 1). Further details on relevant policy, legislative and institutional arrangements are provided in *Appendix A – Policy, legislative and institutional context for water management in the ACT in 2024*.

Table 1 Key legislative and policy settings that guide water management in the ACT

National and regional legislation, policy and plans	**Seat of Government Acceptance Act 1909** Defines the water resource (paramount right) as the basis for establishing and developing the nation's capital. **National Water Initiative 2004 (NWI)** A blueprint for national water reform and best practice for water management **Murray-Darling Basin Plan 2012 (Basin Plan)** Legislative framework for the Murray-Darling Basin states and the Murray-Darling Basin Authority to manage and share the MDB's water resources in a coordinated and sustainable way - the ACT must comply with the Basin Plan's sustainable diversion limits, which is how much water, on average, can be used in the MDB while keeping the rivers and environment healthy ***Water Act 2007*** (Cth) Framework for sustainable management and efficient use of water resources across Australia **ACT Water Resource Plan 2020** Required under the *Water Act 2007* (Cth) to manage and share water sustainably and in accordance with the Basin Plan
ACT legislation, statutory bodies and codes	***Water Resources Act 2007*** (ACT) Governing legislation for managing water resources in the ACT. ***Environmental Protection Act 1997*** Legislative framework to protect and maintain the quality of the ACT's environment by reducing and eliminating the discharge of pollutants into air, land and water **ACT and Region Catchment Management Coordination Group** Statutory advisory body established under the *Water Resources Act 2007* (ACT) to facilitate improved governance and coordination of water activities across the ACT and region catchment area **Water Use and Catchment General Code** An instrument under the *Water Resources Act 2007* (ACT) that identifies waters of the ACT in terms of the permitted water uses and environmental values and identifies the water quality and streamflow criteria related to the full protection of these uses and values. This code links to the water quality standards specified in the Environment Protection Regulation 2005

There are a range of other strategies, policies, plans, programs and groups that complement this strategy to manage water in the ACT, most of which are listed in *Appendix B – Strategies, policies, plans, programs and groups in 2024 that complement this strategy.*

Water use and values in the ACT

Water is vital in sustaining the ACT's largely urban community and regional liveability, as well as supporting environmental, social, cultural, recreational, amenity and aesthetic values, and enabling economic growth through agriculture and industry.

Water uses and sources

Canberra's potable water sources and use

Between 2014 and 2020, the average annual net take of licensed water in the ACT was 19.9 GL. During this period, approximately 85% of this water was used for Canberra and Queanbeyan's potable water supply. In Canberra, this water is predominantly used for drinking, but it is also used for commercial and industrial purposes.

Icon Water is responsible for potable water planning and service delivery in the Territory. Icon Water owns and operates the potable water supply network in the ACT, including a network of dams, water treatment plants, reservoirs, pumping stations, mains and other related infrastructure. Potable water in Canberra is almost entirely sourced from surface water sources, and then stored in water supply reservoirs that are owned and operated by Icon Water. The major water supply reservoirs for the ACT are the Cotter, Bendora and Corin dams, within the Cotter River Catchment, and Googong Dam, within the Queanbeyan River Catchment. The Cotter River Catchment is protected upstream of Cotter Dam, which means there are no farms or houses and there are restrictions on recreation. The Cotter River is the primary source of Canberra's water, followed by the Queanbeyan River and the Murrumbidgee River. The Queanbeyan River Catchment is a rural catchment that includes farmlands, forestry and small communities. The Googong Dam foreshores are managed by the ACT Government to protect water quality as well as social and heritage values.

Non-potable water sources and use

Licensed water taken outside of Canberra's potable water supply network is sourced from waterways, lakes, groundwater, recycled water and stormwater. This water is used to irrigate green public spaces (such as parks and sports fields), golf courses, agricultural and horticultural crops, provide drinking water for animals, and for various industrial uses.

Some stormwater is used for watering a small number of green public spaces

Hard surfaces, such as roofs, roads, carparks and pavements, can increase the amount of stormwater runoff in urban areas. Lake Burley Griffin, Lake Tuggeranong and Lake Ginninderra, as well as 198 constructed wetlands and ponds, are used to manage the impacts of this stormwater runoff on downstream waterbodies. Stormwater is also taken from some ponds to irrigate green public spaces. The ACT planning system promotes increasing the permeability of urban developments to improve water retention in the landscape.

Some recycled water is used for irrigation, but most treated wastewater is returned to waterways

Icon Water owns and operates the Lower Molonglo Water Quality Control Centre (LMWQCC). The LMWQCC is the ACT's main wastewater treatment plant and is the largest inland treatment facility in Australia. Although some recycled wastewater is used for LMWQCC operations and irrigation, most wastewater is treated and returned to the Molonglo River at its confluence with the Murrumbidgee River.

Water values

Catchments and waterbodies in the ACT hold a range of values including, but not limited to, environmental, social, cultural, recreational, amenity, aesthetic and economic values.

Water is central to Traditional Custodian's cultural and spiritual connection to Country

Traditional Custodians are the First Scientists, Managers and Carers of Country in the ACT. Country encompasses all landforms, air, plants, animals, foods, medicines, minerals, stories, special places, and water. ACT catchments and waterbodies hold great significance for Ngunnawal Traditional Custodians, and other people or families with connection to the lands and waters of the ACT and region.

The Murrumbidgee is known as Muradbidji, 'the boss pathway,' to Ngunnawal people. Muradbidji is central to Ngunnawal people's cultural and spiritual connection to Country and to building their cultural economy by sustaining cultural practices and trade with neighbouring nation groups. Ngunnawal people's kinship systems and songlines follow the waterways that flow through the ACT including the Murrumbidgee, Molonglo and Cotter rivers. These rivers and their tributaries represent Ngunnawal people's Dreaming, their cultural roots, sense of belonging, identity, and purpose.

Under lore and customs, Ngunnawal people have a responsibility to care for Water, and Water has a responsibility to care for people. Ngunnawal people have fulfilled these responsibilities, caring for the ACT and surrounding region for over tens of thousands of years. These obligations connect Ngunnawal people to other communities and language groups through surface water and groundwater systems.

Water supports community recreation, health and wellbeing

Access to safe, clean water is critical to the health and wellbeing of the ACT community. The Territory's waterbodies offer numerous water-based recreation opportunities, including swimming, fishing, boating, and water skiing, as well as land-based recreation, such as walking and cycling alongside waterbodies. Managing water wisely supports vegetation in green public spaces for everyone to enjoy as well as contributing to cooler temperatures and better local air quality. Ensuring that the quality of water is appropriate for its intended use, for example, drinking, irrigation or different recreational activities, means that we can use water without concern for our health.

The ACT community has an active role in monitoring, managing and advocating for our catchments and have made important contributions to water conservation during periods of drought. There are several community catchment groups that care for the Territory's waterbodies by monitoring the health of waterways and through restoration efforts such as removing weeds and litter and planting native vegetation.



Figure 4 Children at Lyneham Wetland

The total non-market value of the three largest urban lakes (Lake Burley Griffin, Lake Tuggeranong and Lake Ginninderra) is estimated at approximately $216 million annually when considering community values and water quality management. Of the $216 million, community values for improved environmental amenity are more than double the economic value of water quality management, reflecting the extensive value that urban lakes have for the ACT community.[1]

Important environmental values depend on water

The ACT's waterbodies, and their riparian land and floodplains, provide important environmental values for the region. Aquatic habitats provide ecosystem services, such as water purification and nutrient cycling. Natural habitats include bogs, swampy meadows, chain of ponds, creeks and rivers. Since Europeans arrived, reservoirs, farm dams, urban lakes, ponds and constructed wetlands have been added to the landscape. Constructed and modified waterbodies in Canberra's urban areas manage water quality and provide some habitat to support biodiversity. Together these habitats in the ACT and surrounding high country in NSW host numerous aquatic or water-dependent native animals, including 18 fish species, five mammals, 62 birds, 16 reptiles, 23 frogs and numerous invertebrate species.[2]

The waterbodies of the ACT and region catchment area support the long-term health of high value ecosystems. These include the internationally important Ginini Flats Wetland Complex Ramsar site in the Namadgi National Park, and 12 wetlands classified as nationally important under the Directory of Important Wetlands in Australia, including the Jerrabomberra Wetlands. Rivers and creeks also provide important biodiversity corridors and improve landscape connectivity throughout the region, forming part of the Blue-Green Network.



Figure 5 Cotter River above Vanitys Crossing

The condition of catchments and waterbodies

Our waterbodies are in varying degrees of health and are often subject to diverse, and at times competing, community values and water resource management priorities.

Urban catchments and waterbodies

The 2022 'State of the Lakes and Waterways in the ACT' report by the Office of the Commissioner for Sustainability and the Environment[3] found the condition of urban lakes and waterways were impacted by several factors, including stormwater runoff, sewage treatment discharges and recreational activities. The aquatic health of waterways such as Tuggeranong Creek, Ginninderra Creek and Sullivans Creek is generally in a poor condition to support ecological values, and in a fair condition to support recreational and aesthetic functions. Lakes Tuggeranong, Burley Griffin and Ginninderra are in a fair to poor condition to support recreational and aesthetic values. These lakes have been closed for recreation at times due to poor water quality, which is a key concern for the community. The 'State of the Lakes and Waterways in the ACT' report also found that Lake Burley Griffin is effectively mitigating some of the effects of urbanisation, protecting the waters downstream of the lake for most of the time by trapping phosphorus and nitrogen and limiting the potential effects of turbidity on downstream waters.

All the ACT's urban waterways, lakes and ponds are constructed or highly modified. Generally, the original purpose of these constructed or modified waterbodies was to mitigate flooding and remove pollutants from stormwater to protect the quality of water in downstream waterways and lakes. This means that many of the ACT's urban waterways, lakes and ponds are designed in a manner that does not align with the best outcomes for amenity, recreation and ecological functions.

The condition of the Territory's urban waterbodies is affected by urban development. This includes development activities that may increase erosion and sediment levels in stormwater, if not managed well. Traditional urban development also increases the imperviousness of catchments through the construction of hard surfaces impacting the quality and quantity of stormwater. Stormwater can contain high levels of nutrients, such as phosphorus and nitrogen, and sediment, which, if not managed appropriately, end up in waterways, lakes and ponds, where they contribute to blue-green algal blooms and other issues.

ACT Government policies guide sustainable urban development, such as the ACT Planning Strategy 2018 and Canberra's Living Infrastructure Plan: Cooling the City.

Non-urban catchments and waterbodies

The ACT's non-urban catchments (which includes conservation, water supply and rural catchments) and waterbodies are generally in better condition than the Territory's urban waterways, but their condition has declined markedly since European settlement. The health of the Territory's non-urban waterways is affected by current and historic rural land management practices in catchments. Land management practices can affect water quality and runoff processes, and cause erosion and sediment deposition in waterways. For example, soil erosion triggered by pastoral activities by early settlers increased sediment supply by 200 times, leading to massive deposits of sand in rivers that persist to this day.[4]

The health of the Territory's waterbodies impacts, and is impacted by, the health of the catchment surrounding the ACT. Water diversions from Tantangara Dam into the Snowy Scheme and interception of rainfall run-off in farm dams reduces downstream river flows. Environmental flows are released from Tantangara Dam under statutory instruments to preserve a share of the river flow to protect key environmental values and ecosystem functions, but these flows represent less than 10% of natural flow in the upper Murrumbidgee River.

There are a range of other factors that affect the condition of the ACT's rivers. These include: clearance of riparian zone vegetation; channel widening and shallowing; trampling and nutrient enrichment by livestock; fish for food and sport; the introduction of weeds, diseases, alien fish and other pests; and the fragmentation of waterways into patches of good habitat interspersed among poor habitat.[5] As a result, the condition of rural waterbodies and catchments ranges from good to poor[6] at a reach-scale and for key habitat attributes. Poor habitat and other detrimental factors have impacted the ACT's native flora and fauna, with five species of fish and crayfish listed as threatened under the *Nature Conservation Act 2014* (ACT) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth).



Figure 6 Two-spined Blackfish (listed as threatened) at Cotter River

Catchments that are managed for conservation and water supply are generally in better condition than rural catchments. These catchments generally have greater and more diverse native vegetation cover, both across the landscape and along the riverbanks. This can be seen within the Namadgi National Park and the Cotter River Catchment upstream of Cotter Dam, which are protected for conservation and drinking water purposes respectively. These catchments are also generally in better condition for aquatic areas and ecosystems, macroinvertebrates, and riparian health, and are the main refuges for threatened fish and crayfish species, and other sensitive biota.

Our waterbodies and water resources are under increasing pressure

The impacts of a changing climate, population growth, urbanisation and ageing water infrastructure assets are increasing pressures for effective water management in the ACT.

Climate change

Although historically our climate has been naturally variable, the impacts of climate change will continue to make this variability more extreme and contribute to changes in longer-term average conditions. Some of the potential implications of climate change for water management in the ACT are summarised below (Table 2).

Table 2: Climate change trends and potential impacts[7]

Trend	Potential impacts
 More frequent and prolonged droughts as rainfall is more variable	Drought conditions, if not planned for and managed well, could result in more frequent, severe and longer water restrictions. More frequent and prolonged droughts could also impact recreation, amenity and the liveability of the ACT if public green spaces cannot be irrigated. This will also likely lead to economic and commercial impacts for the community.
 Increasing frequency and severity of storms	More frequent and severe storms will increase erosion and stormwater runoff (including flash flooding) impacting water quality in waterways, lakes and reservoirs. More frequent and severe storms will likely result in increased damage to property and infrastructure.
 Increasing temperatures, with more hot days, and fewer cold nights.	Higher temperatures will likely increase water demand for environmental, drinking water, and irrigation needs. This includes irrigating public green spaces, which contribute to urban cooling.
 Average fire weather and the number of severe fire weather days are projected to increase	Increased frequency of fire weather conditions will likely lead to more frequent and severe bushfire events, which add additional risks to water runoff quality and quantity and also leads to additional demands on water sources to support bushfire fighting.

Population growth

The ACT's population is expected to grow to approximately 784,000 people by 2060, which is a 70% increase compared to 2021.[8] In addition to this, population growth is expected in the surrounding local government areas including Queanbeyan–Palerang, Snowy–Monaro and Yass Valley. This means there is expected to be a significant increase in the demand for water and the amount of wastewater that will need to be managed.

A growing urban footprint

Population growth will likely impact the ACT's urban footprint and population density. Changes to the urban landscape could impact the quality and quantity of urban stormwater runoff, which affects the downstream health of waterbodies. ACT Government policies that guide sustainable urban development, include the ACT Planning Strategy 2018 and Canberra's Living Infrastructure Plan: Cooling the City. Given ACT's projected population growth, it is important to have land use and catchment management practices that give priority to protecting water quality for the ACT and region catchment area.

Ageing infrastructure

A significant proportion of the ACT's water and wastewater assets were built in the late 1960s and early 1970s, during a period of rapid expansion in Canberra. These include the LMWQCC and multiple water reservoirs around Canberra. Icon Water has been progressively planning for essential upgrades to these core elements and other components of the city's network and treatment systems. The ACT's extensive stormwater network is also ageing. The maintenance and renewal of these assets is essential to protect private and public infrastructure from flooding as well as the health of waterbodies in the ACT and region catchment area.

Implications of these trends for water management in the ACT

The combination of these trends has important implications for water management in the ACT, both now and in the future. As drinking water supplies are predicted to become more vulnerable to climate variability and the population continues to grow both within the ACT and the surrounding catchment region, the ACT can expect more demand for water services and infrastructure. These pressures will also drive changes to the ACT landscape, which can have implications for the health of our waterbodies.

This strategy and the supporting implementation plans will guide how we adapt and respond to current and future water related challenges.

Preparing for the Future

As our region changes and pressures on water resources increase, we must continue to adapt and work together. Four high-level outcomes, shown below, and their associated aspiration statements will guide us in identifying pathways and actions to deliver the strategy's vision, while allowing flexibility for adaptive management and balancing diverse values and interests.

Vision

Working together, managing water wisely to support a vibrant, sustainable and thriving region

Outcome areas for 2030 - 2044

Outcome 1: Healthy catchments and waterbodies

Well managed, climate resilient and functioning catchments and waterbodies that support the liveability and environmental values of the ACT

Outcome 2: Sustainable water resources used efficiently

The ACT has an integrated, sustainable and climate resilient water system that meets the diverse water needs across the ACT

Outcome 3: A community that values water and enjoys clean, healthy catchments

An engaged ACT community that values water and proactively cares for catchments, water resources and waterbodies to support actions that deliver safe, clean water for drinking, recreation, the environment and to support cultural values

Outcome 4: Caring for water with Traditional Custodians

Traditional Custodians are partners in water planning, policy and management, and have access to water guided by self-determined priorities

The strategy's four outcomes are described in more detail in the following sections, along with the challenges and opportunities for achieving the outcomes. Each outcome is supported by aspiration statements that will assist with guiding implementation. Strategic actions for achieving the outcomes will be included in implementation plans developed every five years.

Outcome 1: Healthy catchments and waterbodies

Where we want to be by 2044 and beyond

By 2044 and beyond:

Outcome 1: Healthy catchments and waterbodies

Well managed, climate resilient and functioning catchments and waterbodies that support the liveability and environmental values of the ACT

Outcome 1 aspiration statements:

1.a Water sensitive urban landscapes: Urban landscapes are water sensitive, where urban development, stormwater and wastewater are managed to:

- Support urban greening, cooling, recreation, public health and amenity
- Protect the health of waterbodies, and
- Support flood risk management.

1.b Healthy waterbodies: Waterways, lakes, riparian zones and catchments support healthy flora and fauna populations; provide wildlife habitat and corridors; support drinking water supply and public health; support recreational and cultural values; and are resilient to climate change and flood impacts.

1.c Water for the environment: We continue to support sustainable water use while meeting the current and future critical environmental water needs of surface and groundwater dependent ecosystems.

1.d Integrated land and water management: Urban development, rural land, and catchments are managed at a regional scale using a whole-of-system, multidisciplinary and integrated approach.

Challenges and opportunities for achieving healthy catchments and waterbodies

Increasing impacts from climate change and population growth are likely to magnify challenges for our catchments and waterbodies through shifts in runoff patterns (including flash flooding), stream flows, and water quality.

Managing climate risks

The ACT's urban and non-urban waterbodies support a wide range of values and uses, which are sometimes competing. These include water supply, agriculture, habitat and wildlife conservation, cultural values, and recreation. Climate change impacts will make it more challenging to balance these values and uses, and will require the water sector to actively manage climate related risks.

Urban design and development

Pressures from increasing urban development and the need to service both new and existing urban areas with stormwater asset planning, delivery, renewals and maintenance are significant challenges for protecting the health of our catchments and waterbodies. If not managed, these pressures will intensify as land and urban development increase to support population growth.



Figure 7 Naturalised Healthy Waterways stormwater drain between Corlette Crescent and Charlotte Street in Monash

Urban design and development, in both new and existing urban areas, provide an opportunity to protect and improve waterway health and enhance urban environments. For example, retaining water in the urban landscape helps mitigate the effects of increased stormwater runoff and pollution, while supporting urban cooling and amenity. There are various frameworks and design concepts that can be used to guide how we improve water use and management in urban landscapes to better support environmental, social, cultural, recreational, amenity, aesthetic and economic values. These include **Water Sensitive Urban Design (WSUD), Water Sensitive Cities, Integrated Water Cycle Management (IWCM) and Biodiversity Sensitive Urban Design (BSUD**) (refer to the definitions outlined in the glossary of terms). By considering water in urban design and development, we can deliver greener and cooler urban landscapes, promote a thriving Blue-Green Network, and protect local waterbodies.

The design and management of urban waterways, lakes and ponds has evolved over time to better incorporate social and amenity values. However, there is tension between the original purpose for which many urban waterbodies were designed or modified (that is, flood mitigation and pollution control), and

the increased recreational, aesthetic, and ecological purposes that is valued by the community. There are still many places where these issues can be better balanced, however this may not be feasible for all locations.

Regional catchment management

Land use and catchment management upstream in NSW and within the ACT affect the health of our waterbodies. The interrelationship between catchment management and waterway health in NSW and the ACT highlights the importance of coordinated and integrated water management across the upper Murrumbidgee River Catchment. A regional approach to catchment management can better respond to a range of complex, cross-boundary issues that cannot be addressed in isolation.

The ACT and Region Catchment Management Coordination Group is a statutory advisory body established under the *Water Resources Act 2007* (ACT) that facilitates governance and coordination of water activities across the ACT and region catchment area. This group continues to have an important role in improving the health of our catchments and waterbodies.



Figure 8 Aerial view of the Sanctuary Loop at Tidbinbilla Nature Reserve

Outcome 2: Sustainable water resources used efficiently

Where we want to be by 2044 and beyond

By 2044 and beyond:

Outcome 2: Sustainable water resources used efficiently

The ACT has an integrated, sustainable and climate resilient water system that meets the diverse water needs across the ACT

Outcome 2 aspiration statements:

2.a Water for future generations: We have a secure, climate-resilient water supply that meets the current and future water needs of the ACT. The ACT has water to support:

- Reliable, accessible drinking water that is used efficiently
- Ecological health of waterbodies and catchments
- Cultural and recreational values
- Efficient non-potable water use, and
- Sustainable population growth and development.

2.b Diverse water sources: Water needs are met by optimising the use of all available water sources, and through water conservation and efficiency.

2.c Regional approach: Regional water security is supported through collaborative efforts from the ACT, NSW and Commonwealth governments and communities within the ACT and region catchment area.

Providing water security for the ACT is essential for achieving this outcome. This includes providing safe, secure, and climate-resilient water services that are cost-effective and sustainable. Water security also involves working at a regional scale to address challenges and interrelationships across sectors, including energy, food, health and regional planning. This will require a holistic, integrated and regional approach to water security planning and delivery.

'Water security' for the ACT means that water needs – encompassing quantity, quality, and affordability and access – can be met, now and for future generations, and balancing other environmental, cultural, social and economic water needs.[9]

Where quantity, quality, and affordability and access are defined as:

Quantity: adequate volume and reliability of water supply to meet water needs and expectations, with reference to the potable water supply level of service target for Icon Water and the Water Resources Environmental Flow Guidelines.

Quality: water that is safe and meets the needs for its intended use, as defined in the Water Use and Catchment General Code, the Environment Protection Regulation 2005 and the ACT Drinking Water Code of Practice 2007.

Affordability and access: managing financial and other barriers to adequate quantity and quality of supply, particularly for vulnerable water users.

The water supply level of service target guides Icon Water's operational planning for Canberra's water supply system. The target is being reviewed by Icon Water in consultation with the ACT community, and a revised target will be reflected in a long-term water security plan developed by the ACT Government. The existing service target (as set out in the 2014 ACT Water Strategy) will remain in place until the target is updated and forward planning endorsed by the ACT Government.

Challenges and opportunities for providing long-term water security for the Territory

The combined impacts of population growth and climate change means that the ACT can expect to see the demand for water increase, while the reliability of water from our current sources decrease. This will require the ACT to transition to a more climate resilient water supply, making the best and most efficient use of diverse water sources. This strategy provides direction for water planning and management activities to secure the Territory's water supply, supporting sustainable population growth and economic development, while being resilient to the impacts of climate change and variability.

Securing the ACT's water future will be guided by the following principles:

- Environmental sustainability –the environmental values and ecosystem services are protected, and where possible, enhanced.
- Critical human water needs – water needed during drought for drinking, food preparation and hygiene, and essential community services (including emergency services, hospitals and schools) can be maintained under plausible climate projections.
- Cultural appropriateness –cultural water values are protected through the integration of Traditional Knowledge and participation of Traditional Custodians in water planning.

- Economic efficiency – water supply services provide value for money (prudent and efficient expenditure) for the community with consideration of wider social, cultural, environmental and financial outcomes as well as customer costs.
- Financial sustainability –the whole-of-life costs for water planning, management and services can be met through affordable cost recovery.
- Resilience to climate variability and impacts of climate change.
- Community involvement –community are enabled to engage in water planning and management through two-way sharing of information on issues and values, publicly accessible water data, and transparency in decision-making.

Evidence based policy and planning

The ACT's water supply is inherently vulnerable to climate change and extreme events. We are largely reliant on surface water for urban use, which is sourced from the Cotter, Queanbeyan, Molonglo and Murrumbidgee river catchments. Icon Water's water resource modelling shows the water supply system is performing as required. Looking longer term and factoring in population growth and impacts from climate change, Canberra may require its next water source by 2040. Icon Water is progressing investigations into a range of water source options, including new surface water options and climate-independent options. The ACT Government is assessing the current and future vulnerability of the Territory's water resources across a broad range of values relating to supply and demand of potable and non-potable water, water quality, aquatic and riparian ecosystem health, and socio-economic considerations. These assessments support the development of new policies, water planning and actions to be delivered through the implementation plans of this strategy.

Regional water management

State and Territory governments are primarily responsible for the water supply in their respective towns and cities. However, a regional, holistic approach to water resource management will support mutual shared benefits for jurisdictions within the ACT and region catchment area. A holistic approach will be supported by having flexibility in operational arrangements while still honouring prior resource sharing agreements and respective responsibilities.

Water use in the ACT must comply with water-sharing arrangements under the Murray-Darling Basin Plan (Basin Plan) and be consistent with broader national water policies. The Basin Plan provides a framework for sustainable water use in the ACT and region catchment area. The operation of the Basin Plan presents both challenges and opportunities for how we sustainably meet the diverse water needs and values of the ACT community. The Basin Plan requires the respectful consideration of the impact of water management across jurisdictional boundaries. Within the ACT and region catchment area this must include the NSW Snowy Water Licence and regional water quality management.

Outcome 3: A community that values water and enjoys clean, healthy catchments

Where we want to be by 2030 and beyond

By 2030 and beyond:



Outcome 3: A community that values water and enjoys clean, healthy catchments

An engaged ACT community that values water and proactively cares for catchments, water resources and waterbodies to support actions that deliver safe, clean water for drinking, recreation, the environment and to support cultural values

Outcome 3 aspiration statements:



3.a Community water knowledge: An understanding of the local and regional water context is an ongoing part of living in the ACT and underpins the community valuing water and engaging on water related issues.

3.b Dynamic information sharing: There is an ongoing, interactive knowledge exchange within and between the water sector and the community, allowing the community to easily find information and contribute ideas, observations, insights and perspectives on water matters.

3.c Valuing water: The community understands the value of water to the ACT and region catchment area, and the challenges associated with managing water resources and protecting our catchments.

3.d Community input into decision-making: Community values and input informs decision making in water and catchment management, planning and investment.

3.e Community benefit and partnerships: Opportunities for projects and programs to enhance community benefit are identified and embedded in design and delivery. This includes opportunities to deliver projects or programs in partnership between the community and the water sector.

Challenges and opportunities for a community that values water

A shared vision for how water should be managed now and for future generations is achieved through effective partnerships between the community and the water sector. Unlike the other outcome areas, Outcome 3 is set to be achieved by 2030 and maintained throughout the remaining period of this strategy.

This is because everyone in the ACT has a role in caring for our waterbodies and ensuring water is managed sustainably. This may vary from using water wisely at home, in schools and at work, to being actively involved in a catchment group. Accessible water information and water education programs promote a shared understanding of the complexities in caring for our catchments and providing water security.

Key activities and initiatives that support this outcome includes:

- Groups such as the Conservation Council ACT Region, Landcare ACT, catchment groups, the ACT and Region Catchment Management and Coordination Group, the Upper Murrumbidgee Catchment Network and the Upper Murrumbidgee Demonstration Reach
- ACT Government supported community education and engagement programs such as Waterwatch, H2OK and the Leaf Collective, and
- The Icon Water Education program.

There is a wealth of knowledge, perspectives and ideas within the community that contribute to innovation and ambition in the water sector. Working together is underpinned by information sharing and participation, providing pathways for the community to contribute their insights into water planning and management.



Figure 9 School children learning about waterways and lakes

Outcome 4: Caring for water with Traditional Custodians

Where we want to be by 2044 and beyond

By 2044 and beyond:

Outcome 4: Caring for water with Traditional Custodians

Traditional Custodians are partners in water planning, policy and management, and have access to water guided by self-determined priorities

Outcome 4 aspiration statements:

4.a Water policy, planning and management: Traditional Knowledge, rights, interests and aspirations of Traditional Custodians are incorporated in water policy, planning and management in the ACT.

4.b Partnerships: Traditional Custodians and the ACT Government work in partnership to support healthy catchments and waterbodies.

4.c Traditional values and uses: Cultural values and uses are integrated into water planning and management through knowledge sharing and capacity building.

4.d Self-determination and economic participation: Traditional Custodians own, manage and access water that empowers economic self-determination through:

- Access to water entitlements and licences consistent with the National Agreement on Closing the Gap
- Effective governance arrangements, education and knowledge sharing on water resource management, and
- Increased employment of First Nations people in the ACT water sector.

Challenges and opportunities for caring for water with Traditional Custodians and other First Nations people

Conversations with Ngunnawal Traditional Custodians and other people or families with connection to the lands and waters of the ACT and region about cultural water is at the start of a long journey. This strategy presents high-level outcomes based on engagement through water resource planning, Aboriginal Waterway Assessment (AWA), conversations with representatives of the Ngunnawal community, and through national and MDB water reforms. Further development of water outcomes, aspirations, values and uses requires broader engagement with First Nations people in the Territory and surrounding region. Facilitating genuine participation and engagement with First Nations people in planning will be a priority throughout implementing this strategy.

What we have heard so far

The Territory's waterbodies hold great significance to Ngunnawal Traditional Custodians and other people and families with connection to the lands and waters of the ACT and region.

Ngunnawal people have a cultural connection to Dhawura, "Country", and its waterways, "Ngurung", which spans across the ACT and region for many thousands of years. Ngunnawal Elders express a history that has begun since time immemorial and have continued to assert their cultural right to speak for Dhawura. This cultural right has been handed down by their ancestors through lore, language, and ceremony, practicing culture that supports the spiritual, social, and environmental needs of Dhawura and its people. Ngunnawal people have managed Dhawura for thousands of years using Traditional Knowledge and cultural practices which nurtured the health of Dhawura and its Ngurung. Ngunnawal people observe an interconnected relationship between land and water that cannot be separated. This is demonstrated by the waterbirds that feed on fish, and the plants that require both soil and water. To support ongoing cultural connection, water policy, planning and management should be guided by practices that consider Country holistically and with Traditional Custodians.

National Agreement on Closing the Gap

The National Agreement on Closing the Gap is founded on the following four Priority Reforms:

- Formal partnerships and shared decision making
- Building the community-controlled sector
- Transforming government organisations, and
- Shared access to data and information at a regional scale.

Delivering these reforms support shared benefits across the ACT community, progress water interests and rights of Traditional Custodians and other people and families with connection to the lands and waters of the ACT and region, and improve water management practices through the integration of Traditional Knowledge. Successful partnerships are dependent on being co-designed, underpinned by mutual respect, guided by self-determination, and being holistic and sustainable.

Traditional Custodians and other people and families with connection to the lands and waters of the ACT and region will be supported through the recognition of the cultural values and uses. The AWAs provide one mechanism for capturing and sharing knowledge on these values and uses in a form that can be incorporated into planning. Water agencies will seek to further support this connection and broader aspirations through Cultural Flows. Cultural Flows are water entitlements that are legally owned by the First Nations people and communities to improve the spiritual, cultural, environmental, social, and economic health and wellbeing. Supporting First Nations people's economic participation is important for self-determination and achieving economic independence.



Figure 10 Ngunnawal Traditional Custodians undertaking an Aboriginal Waterway Assessment

Implementing the strategy

Implementation plans

The ACT Government, with input from the water sector, will prepare an implementation plan for the strategy every five years. The implementation plans will set out actions for achieving the strategy's outcomes and aspirations, including responsibilities and timeframes. The implementation plans will also include monitoring, evaluation and reporting mechanisms.

The implementation plans will include strategy enablers, which are foundational actions that will support the ACT community and water sector in delivering the strategy successfully. Enablers will be identified and updated in each implementation plan and will relate to:

- Governance, institutional, policy and regulatory arrangements
- Capability and capacity, partnerships, and research and innovation, and
- Business systems and processes, data and analytics, and technology and digital platforms.

Each new implementation plan will build on the achievements and lessons from the previous five years and will reflect any new knowledge or changes in context. This will ensure we continue to focus our effort on the matters that are most important. Implementation plans will also reflect any broader policy commitments made by the ACT Government to deliver on national and MDB water reforms.

Strategy evaluation and reporting

The ACT Government will produce an annual report card that will track progress in delivering actions specified in the implementation plan. In addition to annual reporting, the ACT Government will also initiate an evaluation every five years. The evaluation will consider the progress and achievements of actions identified in the previous implementation plan, and assess progress across the evaluation themes outlined below, based on monitoring and modelled data, and other information. Findings from the evaluation will inform the preparation of the next implementation plan.

This strategy will be reviewed again by 2034.

Evaluation themes

Outcome 1 – Healthy catchments and waterbodies

- Aquatic ecosystem health across the ACT in both urban and non-urban environments.
- Ecosystem function in aquatic and riparian environments.
- Water modelling to assess the future vulnerability of waterbodies and water resources, and to assess improvement in projected outcomes resulting from chosen management actions (both completed and planned at the time of measuring progress).

Outcome 2 – Sustainable resources used efficiently

- Water modelling to assess the future vulnerability of waterbodies and water resources, and to assess improvement in projected outcomes resulting from chosen management actions (both completed and planned at the time of measuring progress). The assessment will use indices associated with water quantity, quality and affordability/access, aligned with the definition of water security presented under Outcome 2.
- Evaluation against the Australian Town and City Water Security (TCWS) Framework, which assesses:
  - The institutional, planning and other arrangements that support water security, and
  - Water security diagnosis for a given water supply system.
- Benchmark analysis of pricing and water supply services conducted by the Bureau of Meteorology for the Urban National Performance Reports.

Outcome 3 – A community that values water and enjoys clean, healthy catchments

- Knowledge building among the community of water-related issues and values.
- Community participation and engagement in planning and program/project delivery.

Outcome 4 – Caring for water with Traditional Custodians

The Office of Water will work with Traditional Custodians to develop appropriate evaluation themes for understanding progress towards this outcome. This work will be reflected through the implementation plans.

Further information on how and when agencies with responsibilities for activities will monitor, evaluate and report on progress will be provided in the implementation plans.

Glossary of terms

ACT
Australian Capital Territory

ACT and region catchment area
Covers an area upstream of the Burrinjuck Dam, which includes the ACT, the Murrumbidgee River Catchment upstream of Burrinjuck Dam, excluding the upper Goodradigbee River in the Tumut local government area, the Murrumbidgee component of the Snowy Monaro Regional Council and lands outside the upper Murrumbidgee River Catchment to the east including the local government areas of Queanbeyan-Palerang Regional Council and the Yass Valley Council.

The ACT and Region Catchment Management Coordination Group
A statutory advisory group established under the *Water Resources Act 2007* (ACT) to facilitate improved governance and coordination of water activities within the ACT and region catchment area.

ACTESA
ACT Emergency Services Agency

ACTHD
ACT Health Directorate

Aquatic area
A water course that is covered permanently or intermittently by water and includes the water in the channel, substrate, and plants and animals that are completely or substantially dependent on being covered by water. It also includes the habitat for these plants and animals.

Aquifer
A geological formation or structure, or an artificial landfill, permeated or capable of being permeated (whether permanently or intermittently) with water.

AWA
Aboriginal Water Assessment

Biodiversity Sensitive Urban Design (BSUD)
An approach to planning and development that recognises biodiversity as an opportunity rather than a constraint. The application of BSUD mitigates the detrimental impacts of urbanisation, such as habitat loss and fragmentation, while facilitating necessary and positive human-nature interactions. The key themes of BSUD are:

- Maintain and enhance nature – avoid and minimise loss of native habitat and biodiversity
- Connect and extend nature – ensure that biodiversity connectivity is maintained across the landscape
- Minimise threats to protect nature – ensure that threats to biodiversity such as noise, light pollution, invasive species incursions or establishment, chemical pollution, or site disturbance are avoided or minimised through good design/planning, and

- Connect people to nature – create positive engagement with nature through mechanisms such as recreation, active travel and landscaping.

Blue-Green Network
The Blue-Green Network is the connection and interaction between water-based and land-based natural or semi-natural spaces across the ACT. 'Blue' refers to waterways including creeks and wetlands within the landscape. 'Green' refers to the trees, urban forests, gardens, parks and open space.

Catchment
An area where water falling as rain is collected by the landscape, eventually flowing to a body of water such as a creek, river, dam, lake, ocean, or into a groundwater system.

CMTEDD
Chief Minister, Treasury and Economic Development Directorate

Conservation catchments
Catchment areas that incorporate those lakes, streams and wetlands for which the primary value is conservation of aquatic habitats (natural and modified), migratory routes or landscape qualities.

Cultural Flows
Water entitlements that are legally owned by the First Nations people and communities to improve the spiritual, cultural, environmental, social, and economic health and wellbeing.

Ecosystem
A dynamic combination of plant, animal and microorganism communities and their non-living environment (e.g. soil, water and the climatic regime) interacting as a functional unit. Examples of types of ecosystems include forests, wetlands and grasslands.

Ecosystem services
The benefits people obtain from functioning ecosystems. These include provisioning services such as food and water; regulating services such as urban cooling and flood control; cultural services such as recreational and cultural benefits; and supporting services such as nutrient cycling.

EPSDD
Environment, Planning and Sustainable Development Directorate

EPA
Environment Protection Authority

Integrated water cycle management (IWCM)
A whole of system, multidisciplinary approach that aims to manage the entire urban water cycle by integrating the delivery of water, wastewater, and stormwater services to contribute to the full suite of water security, public health, environmental and urban amenity outcomes that the community seeks.

JACS
Justice and Community Safety Directorate

Licensed water
Licensed water refers to a Licence to Take Water, which is administered under the *Water Resources Act 2007* (ACT).

Liveability
A measure of quality of life used to benchmark cities around the world. It includes socio-economic, environmental, transport and recreational measures.

LMWQCC
Lower Molonglo Water Quality Control Centre

NCA
National Capital Authority

NSW
New South Wales

NWI
National Water Initiative

Potable water
Water that is intended for use as drinking water and should materially meet the Australian Drinking Water Guidelines 2004, or equivalent.

Recycled water
Water derived from sewerage systems or industry processes that is treated to a standard appropriate for its intended use.

Resilience
The capacity of individuals, communities, businesses and systems in a region to survive, adapt and thrive, no matter what chronic stresses and acute shocks they experience.

Riparian zone
Any land that adjoins, directly influences or is influenced by a body of water. For this strategy, the riparian zone is an area of terrestrial land that affects, and is affected by, flowing water of the adjacent waterbody. This land tends to consist of landforms that are caused by river processes and may contain vegetation communities that are characteristic of areas affected by the hydrology of an adjacent waterbody.

Rural catchments
Catchment areas that support pastoral and cropping activities and are managed by farm lessees (ACT) and landowners (NSW).

Stormwater
Water run-off from an urban area that is normally collected by the stormwater system.

TCCS
Transport Canberra and City Services Directorate

Urban catchments
Catchment areas that comprise Canberra and nearby Queanbeyan, NSW. Small leases are managed by residents and businesses while the ACT Government manages green space within the ACT.

Urban footprint
The geographic extent of the existing urban area.

Water sector
Participants involved in policy, regulation and delivery of water resource management, water quantity, quality, ecology and water services across the water cycle, including governments, regulators, catchment managers, river operators, water utilities, researchers, and private sector service providers. The water sector interacts with customers, the community and other organisations that influence water management, such as urban planners, developers, and other government agencies.

Water agencies
ACT Government agencies and Icon Water, who have primary responsibilities for water management in the ACT.

Water security
For the ACT means ensuring that water needs – encompassing quantity, quality, and affordability and access – can be met, now and for future generations, and balancing other environmental, cultural, social and economic water needs.

Where quantity, quality and affordability and access are defined as:

- **Quantity**: adequate volume and reliability of water supply to meet water needs and expectations, with reference to the potable water supply level of service target for Icon Water and the Water Resources Environmental Flow Guidelines.
- **Quality**: water that is safe and meets the needs for its intended use, as defined in the Water Use and Catchment General Code, the Environment Protection Regulation 2005 and the Public Health (Drinking Water) Code of Practice 2007.
- **Affordability and access**: managing financial and other barriers to adequate quantity and quality of supply, particularly for vulnerable water users.

Water sensitive city
A city that:

- Serves as a potential water supply catchment, providing a range of different water sources at a range of different scales, and for a range of different uses
- Provides ecosystem services and a healthy natural environment, thereby offering a range of social, ecological, and economic benefits, and
- Consists of water sensitive communities where citizens have the knowledge and desire to make wise choices about water, are actively engaged in decision-making, and demonstrate positive behaviours such as conserving water at home and not tipping chemicals down the drain.

Water Sensitive Urban Design (WSUD)

The planning, design or construction of the built environment to minimise water runoff and ensure any runoff causes the least amount of damage. It is also about wise use of that water to improve our urban environment.

The key principles of WSUD are:

- Use different sources of water so we do not need to use as much drinking water. This might include rainwater, treated wastewater, and encouraging water-efficient appliances
- Reduce how much wastewater we create, and make sure it is treated so it can be reused and/or released to receiving waters
- Treat urban stormwater so it can be reused and/or released to surface waters, and
- Use stormwater in the urban landscape to improve the visual and recreational amenities of developments.

Water supply catchments

Catchment areas that incorporate those reservoirs and streams for which the primary value is domestic water supply.

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Appendices

Appendix A – Policy, legislative and institutional context for water management in the ACT in 2024

Water management in the ACT is undertaken in the context of Commonwealth, regional and territory government level policy and institutional settings. These are further described below.

National water policy context

The **National Water Initiative (NWI)** provides a blueprint for national water reform and best practice water management framework and principles to underpin the sustainable management of water resources. The ACT Government is a partner to the 2004 Council of Australian Governments' NWI and has committed to various national level reforms. The NWI is currently being renewed, which offers the opportunity to better address impacts of climate change, provide for increased participation and opportunities for First Nations in water resource management, ensure access to safe and secure drinking water and take a strategic approach to groundwater management.[10]

Murray-Darling Basin policy and planning context

The ACT is located within the Murray-Darling Basin (MDB). The **Murray–Darling Basin Plan 2012 (Basin Plan)** provides a legislative framework for setting standards for the Australian Government, Murray-Darling Basin states (including the ACT) and the Murray–Darling Basin Authority to manage the MDB's water resources in a coordinated and sustainable way, in collaboration with the community. It aims to balance competing demands for water, including those of the environment. This means there are important obligations for the ACT in this plan. The ACT must comply with the Basin Plan's sustainable diversion limits. These define how much water can be sustainably taken from this system for use in the ACT, while keeping waterbodies and the environment healthy, and the quality and volume of the water that leaves the Territory.

The **ACT Water Resource Plan** for Surface and Groundwater was accredited by the Commonwealth Minister responsible for water in 2020. Water Resource Plans are required under the Basin Plan to ensure that water resources in the basin are managed consistent with the commitments under the Basin Plan and the *Water Act 2007* (Cth).

Regional context

Canberra is a city in the centre of the NSW's south-east region. The ACT – NSW Regional Collaboration Memorandum of Understanding (first signed in 2011, recommitted to in 2016 and again in 2020) commits to implementing the South-East and Tablelands Regional Plan 2036 and strengthens linkages between jurisdictions to optimise regional outcomes and service delivery for the ACT and surrounding region.

The ACT and Region Catchment Management Coordination Group is a statutory advisory group established under the *Water Resources Act 2007* (ACT) to facilitate improved governance and coordination of water activities within the ACT and region catchment area.

Regulatory and institutional arrangements for water management in the ACT

Key regulatory frameworks for water management

The ***Seat of Government Acceptance Act 1909*** (Cth) gives the Commonwealth Government paramount rights to the use and control of waters of the Queanbeyan and Molonglo Rivers and their tributaries, which lie to the east of the Cooma-Goulbourn railway, for all purposes of the ACT. The ***Canberra Water Supply (Googong Dam) Act 1974*** (Cth), regulates the use and disposal of water from the Googong Dam area, and provides that waters from the dam area for primarily and principally ACT's use, although water can be supplied to NSW subject to agreement from the Commonwealth Government. The ACT has overall responsibility for water supply and land management within the dam area and has the power to carry out works in NSW as necessary for the Territory's water supply.

The ***Water Resources Act 2007*** (ACT) is the governing legislation for managing water resources in the ACT. It defines access rights to surface and groundwater, environmental flow provisions, water licensing requirements, water resource management, monitoring responsibilities, and penalties for offences. Under the ***Water Resources Act 2007*** (ACT), the Environment Protection Authority (EPA) issues licences for the allocation and abstraction of water, bore drilling and construction of dams or modification of waterways. The **Water Resources Environmental Flow Guidelines,** established under the *Water Resources Act 2007* (ACT)**,** defines the time and flow of environmental flows and abstraction limits in streams, rivers, lakes, and aquifers. The **Water Use and Catchment General Code** is an instrument under the *Water Resources Act 2007* (ACT) that identifies waters of the ACT in terms of the permitted water uses and environmental values and identifies the water quality and streamflow criteria related to the full protection of these uses and values.

The EPA also administers the ***Environmental Protection Act 1997***, which provides the regulatory framework to protect and maintain the quality of the ACT's environment by reducing and eliminating the discharge of pollutants into air, land and water. Regulations made under the *Environmental Protection Act 1997* determine which pollutants cause environmental harm to waterways and set water quality standards for the different water uses and the environmental values as detailed in the Water Use and Catchment General Code. Environmental protection policies provide guidance on achieving compliance with the provisions of the *Environmental Protection Act 1997* and its regulations.

The ***Lakes Act 1976*** regulates the use of and activities on ACT lakes including boating. At the time of preparing this strategy, 15 waterbodies were declared 'lakes' under the *Lakes Act 1976.* Lake Burley Griffin is regulated by the National Capital Authority (NCA) under the *Lakes Act 1976* (Cth).

The ***Nature Conservation Act 2014*** preserves, conserves and enhances the biodiversity of the ACT and provides action plans and research and monitoring programs for threatened species (flora and fauna) and ecosystems.

The ***Planning Act 2023*** includes water-related requirements and assessments such as environmental impact assessments and development applications.

The ***Public Health ACT 1997*** provides the framework to regulate drinking water quality including the Public Health (Drinking Water) Code of Practice 2007.

The ***Emergencies ACT 2004*** establishes emergency planning, prevention response and recovery operations within the ACT, including for scenarios involving flooding.

The ***Utilities Act 2000*** sets out a range of the licensing requirements and conditions for utilities. With respect the legislation deals with water services, sewerage services and water supply networks. The *Utilities Act 2000* also provides for regulations to set water conservation measures and water restrictions according to criteria set under the regulations. The ***Utilities (Technical Regulation) Act 2014*** sets out technical and planning requirements for water utilities (including under technical codes), provides for the role of Technical Regulator to ensure safe and reliable water services to the community, and covers dam safety.

The ***Independent Competition and Regulatory Commission Act 1997*** sets water and sewerage pricing, utility performance standards and investigates water industry matters.

There are a range of other strategies, policies, plans, programs and groups that complement this strategy to manage water in the ACT, most of which are listed in *Appendix B – Strategies, policies, plans, programs and groups in 2024 that complement this strategy*.

Institutional arrangements for water management in the ACT

Water management responsibilities span five ACT Government directorates (detailed below), the ACT's water utility (Icon Water), and the NCA. Within the five directorates, water management responsibilities are distributed across different teams. Water management also interfaces with entities at the Commonwealth (Department of Climate Change, Energy, Environment and Water, Inspector-General of Water Compliance), State (across the Murray-Darling Basin states) and local government levels. This creates a complex operating environment where effective coordination and collaboration are essential. Community-led special interest groups and the general public also make an important contribution to water management.

Water management arrangements have undergone reform in recent years and continue to evolve. High-level responsibilities for water management in the ACT as of 2024 are outlined below:

- The **Environment, Planning and Sustainable Development Directorate** (EPSDD) develops water policy and planning, undertakes development assessment approvals, and delivers programs to monitor and improve waterway health, protect drinking water catchments and catchment land management.
  - The **Office of Water** (OoW) leads water policy and planning in the ACT. The OoW works across government to coordinate cross-sectoral water issues through comprehensive and collaborative approaches, and plan for the sustainable management of water resources.
- **Chief Minister, Treasury and Economic Development Directorate** (CMTEDD)
  - The **EPA** administers and regulates the *Water Resources Act 2007* by managing water allocations and entitlements, compliance and enforcement. The EPA is responsible for protecting waterways through enforcement of pollution controls under the *Environment Protection Act 1997*.

    - The **Utilities Technical Regulation** regulates licensed utilities, including water and sewage, and unlicensed regulated utilities, such as dams, in accordance with the *Utilities (Technical Regulation) Act 2014*.
- The **Transport Canberra and City Services Directorate** (TCCS) manages and maintains stormwater infrastructure, including the Inner North Reticulation Network, as well as urban lakes and ponds in accordance with the Urban Lakes and Ponds Land Management Plan.
- The **ACT Health Directorate (ACTHD)** sets drinking water quality standards and monitors recreational water quality to ensure public safety at the ACT's swimming and boating spots.
- **Justice and Community Safety Directorate** (JACS)
    - **ACT Emergency Services Agency** (ACTESA) undertake planning and response operations for storms and floods.
- **Icon Water** is responsible for potable water planning and delivery, and supplies water and wastewater services within the ACT, and bulk treated water to Queanbeyan and Jerrabomberra.
- The **NCA** manages Lake Burley Griffin water quality and waterway health and maintains infrastructure.
- The **Office of the Commissioner for Sustainability and the Environment** reviews water management and waterway health as an independent statutory body.

Appendix B – Strategies, policies, plans, programs and groups in 2024 that complement this strategy

Existing strategies, policies, plans, programs and groups relating to Outcome 1: Healthy catchments and waterbodies

- ACT Healthy Waterways program (EPSDD)
- Inner North Reticulation Network (stormwater harvesting and managed aquifer recharge scheme, supplying non-drinking water to customers) (TCCS)
- Urban Open Space Land Management Plan, in development (TCCS)
- ACT Aquatic and Riparian Conservation Strategy and Action Plans (EPSDD)
- Nature Conservation Strategy 2013 – 23 (EPSDD)
- ACT and Region Catchment Strategy 2016–2046 and Implementation Plan (EPSDD)
- Water Resources Environmental Flow Guidelines 2019 (EPSDD)
- ACT Sphagnum Bog Rehabilitation and Monitoring Plan (2020–31) (EPSDD)
- Connecting Nature, Connecting People (EPSDD)
- Caring for Dhawura Ngunnawal: A natural resource plan for the ACT 2022-2042 (EPSDD)
- Territory Plan 2023 and the ACT Planning Strategy 2018 (EPSDD)
- ACT Practice Guidelines for Water Sensitive Urban Design Module 1 and 2 (EPSDD)
- ACT Biodiversity Sensitive Urban Design Guide (EPSDD)
- Long Term Watering Plan (LWTP), in development (EPSDD)
- Environment Protection Guidelines for Construction and Land Development in the ACT (EPSDD)
- Builders Booklet: Preventing pollution from residential building sites (EPSDD)
- Water Quality Environment Protection Policy (EPSDD)
- General Environment Protection Policy (EPSDD)
- Contaminated Sites Environment Protection Policy (EPSDD)
- Hazardous Material Environment Protection Policy (EPSDD)
- Environmental Guidelines for Preparation of an Environment Management Plan (EPSDD)
- Urban Lakes and Ponds Land Management Plan (TCCS)
- Canberra's Living Infrastructure Plan: Cooling the City (EPSDD)
- ACT Guidelines for Recreational Water Quality (ACTHD)
- Lake Burley Griffin Recreation Policy 2017 (NCA)
- ACT Territory Wide Risk Assessment (JACS – ACTESA)
- ACT Disaster Risk Reduction Strategic Action Plan, in development (JACS)
- ACT Strategic Flood Risk Management Plan, in development (JACS – ACTESA, EPSDD and TCCS)
- The Australian Institute for Disaster Resilience Managing the Floodplain Handbook

- ACT Strategic Bushfire Management Plan (JACS – ACTESA)

Existing strategies, policies, plans, programs and groups relating to Outcome 2: Sustainable water resources used efficiently

- ACT Climate Change Strategy 2019-25 (EPSDD)
- ACT Circular Economy Strategy 2022-25 (TCCS)
- Inner North Reticulation Network (stormwater harvesting and managed aquifer recharge scheme, supplying non-drinking water to customers) (TCCS)
- Growth Servicing Plan 2023-42 (Icon Water)
- Climate Change Adaptation Plan (Icon Water)

Existing strategies, policies, plans, programs and groups relating to Outcome 3: A community that values water and enjoys clean, healthy catchments

- Connecting Nature, Connecting People (EPSDD)
- The ACT catchment groups
- Conservation Council ACT Region
- Landcare ACT
- The ACT and Region Catchment Management and Coordination Group
- The Upper Murrumbidgee Catchment Network
- The Upper Murrumbidgee Demonstration Reach
- Community education and engagement programs such as Waterwatch, H2OK and the Leaf Collective
- The Icon Water Education program

Existing strategies, policies, plans, programs and groups relating to Outcome 4: Caring for water with Traditional Custodians

- The Aboriginal Water Assessment (AWA) is a First Nations-led and community-driven tool developed to advance First Nation's rights and interests in water planning, policy, and legislation. The tool was developed collaboratively with the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations, and the Murray-Darling Basin Authority. The AWA enables Traditional Custodians to use a cultural lens to assess the health of Country and set priorities for water and natural resource management.