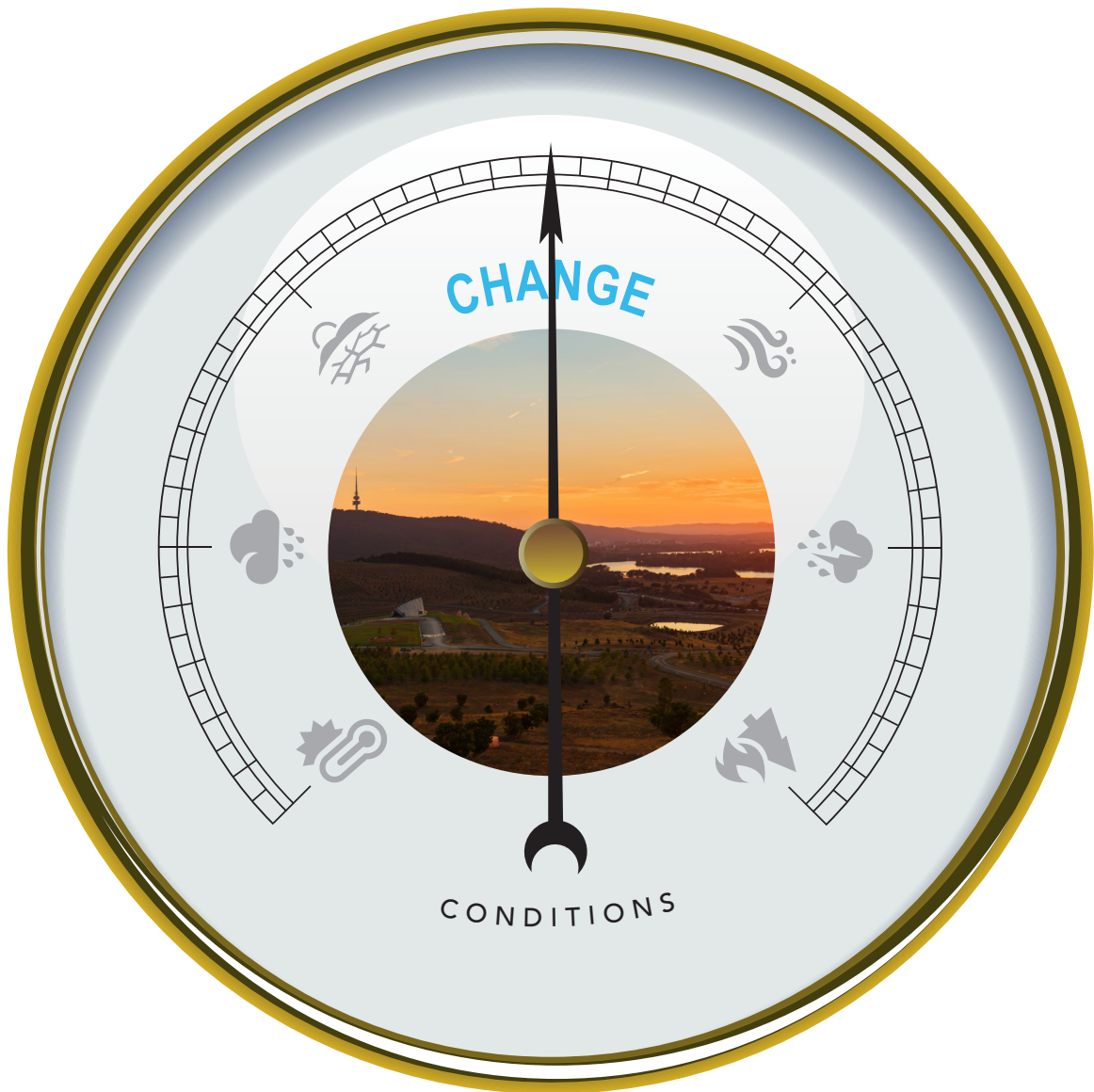


2020

CLIMATE CHANGE ADAPTATION PLAN





FACTORING IN CLIMATE CHANGE

Climate change has been a factor in Icon Water's planning for many years.

This is a summary of our Climate Change Adaptation Plan.

As the ACT region's water and sewerage utility, our operations rely on weather and the water cycle. We are keenly aware of the potential impacts climate change could have on our operations, assets and ability to provide essential services to our community.

We use a range of business resilience programs to actively address potential climate change impacts including bushfire management, asset management and staff welfare.

In May 2019 the ACT Government declared a climate emergency. At Icon Water we are committed to being part of the solution.

Our Climate Change Adaptation Plan builds on our existing programs and is the culmination of research and consultation. The plan helps us to understand our exposure to climate change risks and, through practical action, further build our resilience to existing and future climate change impacts in the ACT region.

Our goal is to minimise disruptions to essential service delivery and allow us to find new and better ways of serving our community and achieving our Core Purpose: to sustain and enhance quality of life.

OUR CHANGING CLIMATE CONDITIONS

Climate change is happening now. We're seeing our temperatures warming and changes to our rainfall patterns, as well as a rise in extreme fire weather and an extension of the fire season. These changes are expected to continue and worsen, with extreme events such as heat waves and severe storms becoming more frequent.



Temperature predictions*

- Maximum temperatures are expected to increase in the near future by 0.6 – 0.9°C and in the far future by 1.4 – 2.3°C.
- Minimum temperatures are expected to increase in the near future by 0.4 – 0.7°C and in the far future by 1.4 – 2.3°C.
- The number of hot days will increase.
- The number of cold nights will increase.



Rainfall predictions*

- Rainfall is expected to decrease in spring.
- Rainfall is expected to increase in summer and autumn.

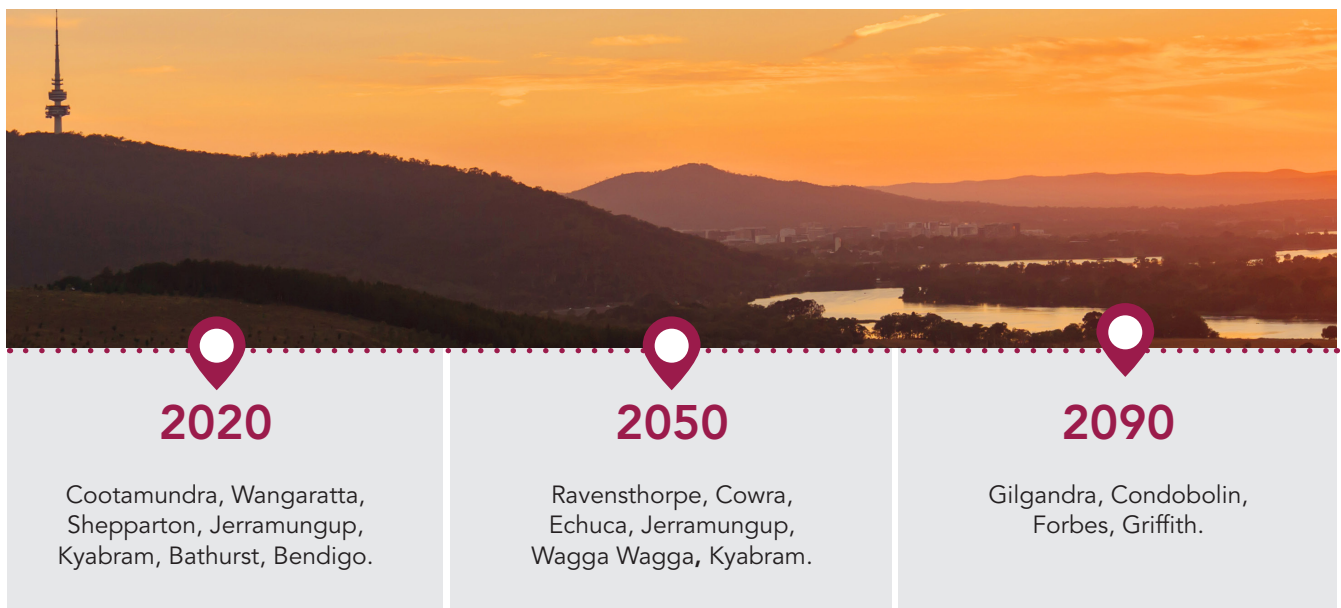


Forest fire danger index predictions*

- Average fire weather is predicted to increase in spring, summer and winter.
- The number of severe fire weather days are expected to increase in summer and spring.








*Adapted from NSW and ACT Regional Climate Modelling (NARClIM) data projections for the ACT.

Canberra's future could resemble the climate conditions in these towns



POTENTIAL IMPACTS OF CLIMATE CHANGE ON OUR BUSINESS

This plan allows us to prepare for these changes so we can minimise disruption to our customers and maintain the health and safety of our people.

Area of impact	 Increasing temperature	 Severe storms	 Prolonged dry weather	 Increasing bushfire severity
Water security 	<ul style="list-style-type: none"> Increased likelihood of algal blooms in catchments More chemical dosing Greater demand for potable supply by customers Increasing evaporation from dams 	<ul style="list-style-type: none"> Flash flooding causing turbidity and erosion in source waters 	<ul style="list-style-type: none"> Reduced inflows to catchments Water restrictions Calls to assist neighbouring drought-affected communities 	<ul style="list-style-type: none"> Raw water impurities from ash, debris and firefighting equipment Pressure on water treatment processes Reduced inflow during plant regrowth
Impact on customers 	<ul style="list-style-type: none"> More frequent water main leaks and bursts due to thermal expansion, pipe corrosion or subsidence Heat stress on electrical equipment Increased odours expected in sewer 	<ul style="list-style-type: none"> Difficulty providing standard service levels during emergencies Energy, communications and supply chain disruptions affecting services 	<ul style="list-style-type: none"> More frequent sewer blockages from tree root intrusions, reduced flushing and low flows Less water available to green parks and gardens 	<ul style="list-style-type: none"> Outages from infrastructure damage or failure
Financial pressures 	<ul style="list-style-type: none"> Increase in cooling need More reactive maintenance work 	<ul style="list-style-type: none"> Rising insurance premiums 	<ul style="list-style-type: none"> Increasing energy operating costs when pumping water during drought conditions 	<ul style="list-style-type: none"> Costs to repair and replace damaged assets
Environment 	<ul style="list-style-type: none"> Staff exposed to greater health risks (e.g. smoke inhalation, heat stress) Changes to flora and fauna (biodiversity decline, introduction of invasive species) 	<ul style="list-style-type: none"> More sewer overflows from storm event inflows 	<ul style="list-style-type: none"> Increase in environmental water needs Stress on catchment health 	<ul style="list-style-type: none"> Catchment biodiversity loss



WHAT WE ARE ALREADY DOING

We actively address climate risks through various business resilience programs and controls.

Bushfire management

With prior experience of bushfire damage from the 2003 bushfires we have:

- implemented Annual Bushfire Operational Plans to reduce fuel load around our assets
- upgraded our water treatment plants to ensure source water can be treated even with elevated levels of ash, sediment or pathogens.

Asset management

Our assets are managed based on modelling and forecasts, adaptive planning, and design requirements that consider climate change.

- We have increased Canberra's water storage capacity by 35 per cent through the enlargement of the Cotter Dam following the Millennium Drought.
- Two water treatment plants, backup power generators and three drinking water catchments provide capacity, redundancy and flexibility of supply.

Adapting in line with community

Relationships with the community, industry and government are critical to ensure a collaborative approach to climate change adaptation across the region.

We value our strong partnerships:

- with government and industry, to build our knowledge and leverage a range of climate change related tools and research
- with community and catchment groups, providing support through community education programs and our community support program.

Emergency management

We are a critical stakeholder in the ACT and region's emergency management arrangements and we provide support to other agencies in response to incidents, such as the ACT Fire and Rescue service.

We have trained professionals that can respond to emergencies.

Staff health and safety campaigns

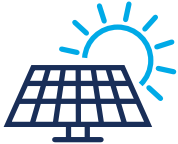
We take pride in our staff welfare and have a range of wellbeing and safety programs to build staff resilience to a changing climate. We provide:

- sun shades and cooling equipment to our field staff
- access to an employee assistance program and safety and mental health programs
- gym memberships to maintain staff health and fitness
- climate-related education and health warnings
- appropriate emergency response and bushfire awareness training.

ADAPTATION ACTIONS

Through this plan, Icon Water identified 59 adaptation actions to improve resilience over the next three years (mid 2020 – mid 2023).

Key action themes identified for immediate attention include:



Emission reduction

We will continue to work to eliminate greenhouse gas emissions and improve energy efficiency through our emission reduction programs, including solar photovoltaic generation and industry research to reduce emissions from our wastewater treatment processes. We are committed to reduce emissions consistent with the ACT Climate Change Strategy target of net zero emissions by 2045.



Water Security

We will continue to collaborate with partners and our community through education and water conservation programs, to use our water resources wisely. We will deliver our drought management plan and water conservation programs when required so we can deliver a sustainable supply to keep the Canberra and Queanbeyan communities functioning.



Adapting in line with community

It is essential that we prioritise adaptation actions that will best sustain and enhance quality of life for people in the ACT and local region. We will work with the community and our supply chain to help prepare for and adapt to impacts of climate change.

We will work with the ACT Government and community to ensure our adaptation actions align with community values and aspirations reflected in the ACT Climate Change Strategy and associated forums.



Climate resilient infrastructure design elements

With extreme events likely to increase over time, we must ensure our infrastructure can remain resilient in emergencies. We will update the climate change projections in our design and construction standards, ensure we have sufficient fire protection, backup energy and critical supplies at sites, use sustainable and climate resilient materials where possible and ensure our assets have the capacity to address and withstand relevant conditions now and in the future.



Monitoring, evaluation and capability

Climate change is a fast moving and complex field of research and is highly dependent on social and technological changes. As such we will continue to monitor and participate in relevant research to ensure that Icon Water's adaptation program keeps up with best practice.

We will collaborate with other industry bodies and climate change researchers and share investment and experience with other organisations to aid mutual adaptation efforts.

OUR ADAPTATION APPROACH

Our Climate Change Adaptation Plan has been informed by a series of internal workshops to review the potential impacts of climate change to our business and risks to the services we provide to our customers. The Climate Change and Sustainability Section of the ACT Environment, Planning and Sustainable Development Directorate were consulted to ensure our Plan aligns with the broader ACT Climate Change Strategy.

Our approach



*Modified from the Water Services Association of Australia (WSAA) Climate Change Adaptation Guidelines.

MONITORING AND REVIEW

The ongoing revision and improvement of this plan is essential if Icon Water is to remain vigilant to the impacts of climate change.

This will involve monitoring and implementing adaptation actions, keeping up to date with research and best practice, and operating in line with both our sustainability principles and the priorities of our community and stakeholders.

Sustainability, and therefore managing climate change risk, is vital for Icon Water.

Respect resources



Enrich our neighbourhood



Care for tomorrow



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