

Water sector climate adaptation planning

Given water utilities are so heavily reliant on weather and the water cycle, resilience to climate change and variability is critical to ensure essential services to communities can continue to be met under these increasingly changing conditions.

Many utilities are developing climate adaptation plans, in response to business risk as a result of climate change, as well as regulatory drivers. Importantly, some also recognise that a whole of organisational approach is needed to achieve the actions.

This case study showcases three utilities' approaches in this space, and demonstrates both climate adaptation planning as well as adaptive planning approaches.

CLIMATE THEMES ADDRESSED



Background

Icon Water

Icon Water identified climate change as a significant business risk and strategic imperative through its Business Strategy 2020. On World Environment Day in June 2020, Icon Water launched its Climate Change Adaptation Plan with a summary brochure produced for the community. Fifty-six actions identified will help mitigate 31 short term climate change-related risks over the next three year horizon.

These actions are framed around five key themes: emissions reduction; water security; adapting in line with the community; climate resilient infrastructure design; and monitoring, evaluation and capacity building.

Critically, the plan supports Icon Water's goal of Net Zero emissions by 2045 (consistent with the ACT Climate Change Strategy). The plan also outlines the impacts of climate change on water security, service levels and the environment, recognising the particular impacts climate change has on operations.

The plan takes a practical risk-based approach to climate change adaptation (figure 3), based on the WSAA Climate Change Adaptation Guidelines with modifications consistent with Icon Water's business context.

North East Water



Climate has a significant influence on the sustainability of North East Water's service delivery. North East Victoria has experienced a significant number of climatic events over that past decade, including extensive catchment bushfire (2003, 2006, 2007, 2009, 2013, 2020), extended drought, floods and storms, as well as heatwaves. Such events have demonstrated adaptive management through response (lessons), planning and risk management processes.

Although adapting to a more variable climate is and will be a significant challenge and therefore adaptation strategies and plans are essential, recent years of exposure to climate related events make this more tangible.

North East Water's 'Adapting to a Changing Climate' Strategic Initiative aims to maximise its capacity to respond to a changing climate, through understanding the proposed impacts on infrastructure and services as a result of a changing climate.

This Strategic Initiative will assist the business to adapt to a changing climate through developing appropriate business, infrastructure and people solutions that ensure sustained and improved resilience in services to meet the needs of customers and communities across North East Victoria.

Key objectives include:

- Understand the policy and business landscape to maximise capacity to respond to a changing climate
- Project the impact of proposed climate change scenarios on infrastructure and service obligations
- Investigate the practicality and sustainability of innovative options (e.g. stormwater, groundwater, small scale collection)
- Risk assess the potential impact from climate change to infrastructure from key hazards
- Categorise where the highest risks exist so implementations can be incorporated into planning and management of water and wastewater services for these systems
- Embed climate adaptation thinking within connected business activities including relevant strategies, plans and processes.

Hunter Water

Hunter Water is impacted by climate and weather and have developed experience in managing extreme events associated with these variables. Example events include, the 2007 'Pasha Bulker' storm, 2015 East Coast Low super-storm, Lake Macquarie tidal inundations, as well as the 2019/20 NSW drought.

Long term planning that incorporates climate change risk into decision making is essential to ensure ongoing business resilience to an uncertain climatic future.

In Hunter Water's 2017+3 Strategy, climate change is a strategic driver that represents key challenges, but also opportunities. Hunter Water has revised its Climate Change Adaptation Strategy which utilises adaptive pathway thinking to guide its approach to climate change adaptation.

Though Hunter Water is well positioned to deal with climate change, the Climate Change Adaptation Strategy builds on existing business capability and systems to quantify the risks and improve staff understanding of climate change impacts.

Key objectives of the revised strategy include:

- Understand and keep climate risks within appetite
- Embed climate change risks into decision making
- Build resilience for the unexpected
- Timely action to achieve efficient adaptation
- Consider regional resilience and transition.

Benefits to the utility, and to climate-related outcomes

Icon Water

The plan recognises that a whole of organisation approach is required to achieve its broad range of actions. Many of the actions achieve multiple benefits such as resource recovery, social resilience, workforce health and safety, energy efficiency, business continuity and biodiversity conservation outcomes.

By following the plan, Icon Water can remain current with community, government and business expectations of sound climate risk management. Collaboration across industry bodies, researchers and other organisations enables information and experience to be shared. The plan also positions the business to take advantage of opportunities that build resilience to climate change.

Examples of specific outcomes include:

- Water conservation messaging through Icon Water's 'Care for Water' campaign launched in December 2019, was successful at raising awareness around Permanent Water Conservation Measures and promoting water saving activities throughout the community. Visits to related water conservation pages increased by 900% compared to prior to the campaign's commencement.
- Developing Catchment Actions for Clean Water Plans and implementing Icon Water's Bushfire Operational Plan for 2020-21 assisted in preparedness before and recovery after the 2020 bushfires.

As at 1 January 2020, 16 percent of actions in the Climate Change Adaptation Plan were complete. While actions continue to progress, it is too early to see a significant reduction to the risk profile. The profile will be reviewed after two years and every three years thereafter.

North East Water



Benefits of North East Water's climate adaptation approach include:

- Better understanding climate science specific to the region
- Identifying key climate hazards relevant to service delivery
- Establishing cross-functional teams to ensure necessary business functions are represented
- Assessing impacts by location and asset to quantify risk and inform business decisions
- Establishing guiding principles to adapt with appropriate caution
- Integrating climate adaptation with all key planning processes
- Identifying and embedding climate considerations within business systems and processes, across infrastructure, operational, maintenance and service delivery.

Hunter Water

Benefits of Hunter Water's revised approach to climate adaptation include:

- Strengthened business leadership understanding and commitment, as well as demonstrating regional leadership
- Business-wide adaptation framework and better internal coordination
- Integrating climate change into decision making
- Better understanding of interdependencies
- Identifying gaps in knowledge
- Making better information accessible to the community
- Better coordination of financing needed for adaptation
- Improved monitoring and reporting.