

Expert Panel Members

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1. Introduction

Icon Water established the Expert Panel to seek independent, challenging advice to help ensure robust water security planning by Icon Water.

Representatives of the local academic community were invited to participate in a series of meetings and subsequent discussions held in May and June 2020.

Icon Water posed the following question to the Expert Panel:

“Extreme weather patterns and changing climate provide challenges to the delivery of sustainable water to the Territory and surrounding region. As part of on-going strategic planning, Icon Water seeks expert input from a range of perspectives.

To this end, we are seeking advice from an expert panel on emerging priorities, and potential innovations Icon Water should consider with respect to long term water security for our region.”

Icon Water provided an initial presentation, answered questions and provided additional information to members of the Expert Panel to assist them in their deliberations. Based on group discussion, the Icon Water Expert Panel provides this advice to Icon Water.

2. Advice

There are five key areas of advice provided by the Expert Panel which are summarised in the diagram below.



2.1 Adopt a definition of water security for the future

Recommendation 1: The Expert Panel recommends that Icon Water commit to a definition of water security for the future that is fit for purpose and recognises it's important role in regional water resource management.

In considering a definition of water security, Icon Water should

- Consider internationally recognised definitions that focus on the needs of humans and ecosystems for sufficient water that is affordable and fit for purpose (such as drinking, agricultural or industrial use and maintaining ecological values)¹. Reference also the definition by United Nations², and discussions in the Australian Parliament.

¹ Cook C, Bakker K. Water security: debating an emerging paradigm. Global Environmental Change-Human and Policy Dimensions, 2012, 22(1): 94–102

² <https://www.unwater.org/publications/water-security-infographic/>

- Ensure the definition is relevant and easily understood by the community; e.g. the use of meaningful and appropriate infographics to explain the definition is strongly encouraged.
- Recognise the changing scope of Icon Water's work and the potential for Icon Water's definition to provide thought-leadership that extends beyond its current scope. This includes:
 - considering measures of water quality as well as quantity and availability
 - challenging the relevance of the term 'unrestricted access'
 - moving beyond the water that comes out of the tap, considering for example sources of water, cultural flows and ecological values
 - defining what we seek to be resilient to - including drought, population growth etc

2.2 Enhanced leadership role

Recommendation 2: The Expert Panel recommends that Icon Water take a stronger role in leading discussion and promoting policy change.

- There is a significant role for Icon Water in leading community and government conversations about secure water use and how it impacts on Canberra, how the city looks and the lifestyles of its residents.
- Icon Water should consider if it wants to lead change beyond these discussions to promote behaviour change in the community or policy change by government (for example, with water use in gardens).
- Icon Water should recognise its regional leadership and collaboration responsibilities with respect to the broader upper Murrumbidgee River catchment, where it can help balance the needs of people with restoration and conservation of the riverine environments.
- Taking a stronger role may require Icon Water to develop a strategy with clear goals for what benefits would be achieved. This could be pursued through staged investment in collaboration with community and government, identifying shared action and establishing change campaigns.

2.3 Building, sharing and using knowledge

Recommendation 3: The Expert Panel encourages Icon Water to invest in building knowledge within its organisation, the community and government policy-makers.

- Icon Water should continue to build water literacy and a stronger understanding of integrated water use within the community. The use of appropriate and engaging language will be important; for example, perhaps the term 'secure water use' is more relevant than 'sustainable water use'.
- Generating knowledge that informs decision-making must be a priority for Icon Water. Knowledge generation could include better understanding of, and the interrelationship between:
 - Canberrans' values, drawing on the work of the ACT Government's Wellbeing Indicators
 - Population projections, considering both the number of people as well as changes in behaviour and community expectations
 - The changing nature of the catchments, impact of bushfire, rural management practices, ground water impacts,
 - Management of water and conservation of biodiversity, e.g. Macquarie Perch in Icon Water's catchments
 - Climate impacts and the risk profile of these impacts
 - Use of different, climate independent water sources and the public's palatability to them.
- An example project could be to undertake community-based experiments to understand how people behave under different circumstances. This could also serve as a community engagement and education initiative.³

2.4 Explore the alternatives

³ Sharma, A. K., Gray, S., Diaper, C., Liston, P., & Howe, C. (2008). Assessing integrated water management options for urban developments—Canberra case study. *Urban Water Journal*, 5(2), 147-159.)

Recommendation 4: The Expert Panel supports Icon Water's work on alternate source and demand management options and recommends this work reflect the definition of water security discussed in Recommendation 1.

- Icon Water should continue to explore alternate, climate independent sources and demand management options, based on the organisation's definition of water security (or a newly defined terminology discussed above). It should foster discussion across policy makers and the community about these options.
- Areas for potential exploration with respect to alternate sources include:
 - Contributing to enhanced governance of the upper Murrumbidgee River catchment
 - Exploring options for any release of water from the Snowy Mountains Hydro-electric Scheme for urban water extraction by Icon Water to enhance environmental flows in the upper Murrumbidgee River
 - Purchase of water licences / entitlements from upstream users
 - Understanding how farming and upstream practices may impact yield and quality, e.g. consider how more active management of on-farm dams, biodiversity and commercial reforestation, regenerative farming and riparian restoration works can conserve water resources while benefitting people and the environment. Consider the importance of effective compliance arrangements.
 - Investigating the current and possible recycling options (noting compliance requirements) – especially given the change in technologies, community demographics and education processes
 - Assessing the potential for managed aquifer recharge as drought reserves
 - Understanding options to better meet human needs and restore riverine ecosystems in collaboration with Traditional Owners based on traditional knowledge and cultural flows
 - We note that seeking lower environmental thresholds for pumping from the Murrumbidgee River in times of drought and low flows would not be in keeping with Icon Water's leadership for sustainable water management.
- Demand management options should be considered particularly as they relate to Canberra as a planned, inland city. Areas for consideration include:
 - education; for example, low-water garden advice, secure water use versus endless reduction in water use. There is potential for industry partnerships in these areas to supply householders with easy to install packages of water saving garden materials or appliances at affordable prices
 - water-sensitive urban_design (WSUD), including design strategies, integrated systems and management approaches, e.g. Work with ACT Government to ensure that WSUD is applied in new suburbs and redevelopment of brownfield sites
 - building design, including efficient and alternative use, recycling, repurposing and value-adds
 - bigger picture implications of water restrictions, e.g. reduced green infrastructure incentives and regulation, including dynamic water pricing.
- In exploring the options, Icon Water should seek to recognise all costs and trade-offs associated with each alternative⁴.

2.5 Make robust decisions

Recommendation 5: The Expert Panel recommends Icon Water maintain a systems-thinking approach to underpin transparent, robust, dynamic decision-making that responds to the definition of water security referenced in Recommendation 1.

- It is important that Icon Water adopt a transparent, robust, dynamic decision-making process that is based on systems thinking and reflects the integrated definition of water security.
- Support the continued application of modelling approaches and frameworks to support decision-making.

⁴ For example. Gordon, J., Chapman, R., & Blamey, R. (2001). Assessing the options for the Canberra water supply: an application of choice modelling. *The choice modelling approach to environmental valuation*, 73-92. And Barrett, G. (2004). Water conservation: the role of price and regulation in residential water consumption. *Economic Papers: A journal of applied economics and policy*, 23(3), 271-285.

Icon Water Expert Panel Advice July 2020

- Icon Water should consider broadening the range of modelling undertaken to ensure decision-making tools are adequate and up to date. Examples include:
 - regularly review and update modelling
 - consider a greater use of probabilistic modelling/simulation to increase the ability to be agile in response to greater climate variability
 - incorporate groundwater/surface water modelling to ensure holistic modelling of water resources and to help better understand storage, quality, flow and use activities.

3. Conclusion

Members of the Expert Panel were pleased to participate in the discussions and deliberation; and offered to be involved further as appropriate to the work of Icon Water.