



STANDING COMMITTEE ON PUBLIC ACCOUNTS

Elizabeth Kikkert MLA (Chair), Michael Pettersson MLA (Deputy Chair),
Andrew Braddock MLA

Inquiry into Annual and Financial Reports 2020-21
ANSWER TO QUESTION ON NOTICE

Asked by NICOLE LAWDER MLA on 22 FEBRUARY 2022:

Ref: Icon Water, Water Security

In relation to:

1. According to the Annual Report, dam storages were at 44% two years ago, very close to imposing water restrictions. How can Icon Water ensure water security for 30 years or more?
2. What new sources of water have Icon Water planned given there are no trading arrangements with NSW and the 10GL for the Tantangara Transfer Option has been sold?
3. When will the Water System Strategy be released for comment?
4. What is Icon Water's strategy to meet its component of the Basin Plan's Sustainable Diversion Limit?
5. Why has the Lower Molonglo Water Bypass Dam spilled 4 times already since it was built?
 - a. Was this expected and was it built to cope with these overtopping events?
6. What has Icon Water done to reduce stormwater ingress into the sewage system during storms?

ANDREW BARR MLA: I have sought advice from Icon Water and their answers to the Member's questions are as follows:

1. From 2017 to 2020 the ACT region suffered the worst drought in our recorded history, as measured by dam inflows. Despite the short period of the drought, the inflows over 12, 24 and 36 months periods were the lowest in our 110 year history.

The fact that Icon Water did not require temporary water restrictions in this drought demonstrates a relatively high level of security compared with other regions in Australia. Temporary water restrictions are a legitimate operational tool to ensure water security objectives can be met. The recent drought was far from the most extreme event that our source system has been designed to withstand and restrictions may be required if more severe droughts are experienced than the recent event. It is expected that severe drought events to become more frequent as climate change intensifies.

Icon Water has taken learnings from this drought and is implementing the following improvements:

- Major update to the Water Resources Model

The Water Resources Model enables Icon Water to assess the water security of the ACT supply. At the conclusion of the drought event, a large amount of useful new data became

available that can enable the model to produce better forecasts and assessments. In addition, climate science and other related fields have improved, allowing the model to adopt better processes to improve accuracy and confidence.

- Development of a water system strategy

Icon Water is in the process of developing a water system strategy. The recent drought allowed Icon Water to review the strategic framework of water security. Taking on community and expert feedback, one of the actions is to review the definition and measures of water security including the level of service target required by the ACT Government.

The strategy will also review the options analysis for the next source of water to satisfy the new level of service targets (i.e. long-term resilience of the system). This will ensure that that our source water system has a certain level of resilience before the next severe drought event arrives.

- Development of a Drought Management Plan

In addition to ensuring long-term levels of service are achieved, an adaptive plan to respond to drought events has also been developed. This includes a mixture of demand management, supply augmentation (only those that can contribute during an existing drought) and operational responses. The two objectives of the drought management plan are:

- a. in a day zero event, a restricted demand can be supplied sustainably to the community; and
- b. the measures including infrastructure augmentation will be implemented in time for the day zero event.

Note that this does not reduce the time spent in restrictions but it does minimise the risk of the ACT region running out of water – a day zero event is defined when total storage falls to 5 per cent.

2. Icon Water has a list of potential sources from previous studies. Being an inland city, they all rely at some level on climate. Icon Water is keen for the next source to be less reliant on climate.

The most recent study occurred during the development of the Drought Management Plan. However, only options that were seen to make a significant contribution during an existing drought were investigated. This excluded options like raising dam walls or constructing new dams.

The most promising options that had more climate resilience than surface water augmentations were ground water and purified recycled water. The water system strategy will examine these options and compare them with a more complete list before a preference for the next long-term source is identified.

Icon Water terminated the Tantangara Water Release Deed when it became clear that it did not provide value for money to the Canberra community. Icon Water attempted to negotiate the fees before termination became the only option.

3. The Water System Strategy in its current form examines the state of Icon Water's water system, in terms of safety, security and level of sophistication in its efficiency, prudence and ongoing improvement. The system is currently achieving all performance targets. A set of actions has been identified and will be implemented for the ongoing development and improvement of our water system.

Some outputs from the Water System Strategy can be expected to be released for comments shortly. This includes the Growth Servicing Plan 2022-42 which identifies the timing of various infrastructure augmentation projects to support growth. As Icon Water progresses the implementation of the Water System Strategy, more outputs will be made available for comment, and major stakeholders will be consulted before their finalisation. This can be expected throughout the next regulatory period 2023 to 2028.

4. Icon Water is under no obligations under the Basin Plan's Sustainable Diversion Limit. The ACT Government manages the objectives mostly through the ACT Water Resource Plan. Icon Water contributes to the ACT Government's plan by ensuring it complies with the water abstraction licences and entitlement rules. Icon Water also assists the ACT Government with demand and water availability projections along with the calculations of annual 'take'. Currently, there is little risk of Icon Water abstracting volumes impacting the ACT Government's responsibility, although over time this risk is expected to increase with demand growth.
5. The Lower Molonglo Bypass Dam was constructed in the 1990s to provide a buffer during events where wastewater inflows to the plant exceed the plant capacity, such as during wet weather. During wet weather events, some of the partially treated effluent can be diverted to the bypass storage dam. Diverting this flow ensures that Icon Water protects the treatment plant process. The partially treated effluent is stored in the bypass dam until the event has passed. Icon Water then pumps the stored volume back to the plant before fully treating to a high quality and discharging it to the Molonglo River. However, in particularly intense or extreme wet weather events or sustained wet weather conditions, the treatment plant may receive more flow than it can contain in the bypass storage dam. In these cases the dam is designed and constructed to allow controlled releases to the environment. The dam has recently spilled on several occasions due to wet weather, and also spilled twice during the wet period from 2010 to 2012.

While the dam reduces the likelihood of discharging partially treated effluent to the environment, it cannot contain all events. It is not practical or economically feasible to ensure that partially treated effluent is never released into the river. The dam is designed to spill when its storage volume is not large enough to contain the inflow to the plant, less the secondary treatment capacity. Partially treated effluent will overflow the dam when this occurs. When the bypass dam does spill, the intense rain conditions, which dilute the wastewater and increase base flows in the river, coupled with partial treatment at LMWQCC mean there is minimal impact to the environment.

The primary driver for the recent increased frequency of spills has been the wetter conditions experienced since the breaking of the drought in early 2020. Inflow and infiltration in the wastewater network increases the flows into the treatment plant.

6. Icon Water manages and maintains a network of over 3,000 lineal kilometres of sewer pipes and has a number of mechanisms to reduce stormwater ingress into this system.
- During design and construction, new sewers installed by both Icon Water and third parties are governed by design standards and approved equipment lists which minimise the risk of ingress into the sewerage system. Icon Water also has standards for connection and a program of inspections for completed connections to further manage the risk of stormwater ingress and cross-connection by third parties.
 - For existing sewers, Icon Water has a monitoring and inspection program. This includes comparing flow with expected and modelled flow to determine anomalous areas. Over the last five years Icon Water has inspected over 10 per cent of the sewer pipes and associated connections.
 - Icon Water uses the information from the inspection program to identify sewer mains, joints and manholes for replacement, localised repair, or replacement/relining. In the last 5 years Icon Water has replaced or relined 29km of sewer main which has been prioritised from the inspection and cleaning program. Icon Water has also replaced 15,000 joints.

Approved for circulation to the Standing Committee on Public Accounts.

Signature: 

Date: 17.3.22

By the Treasurer, Andrew Barr MLA.