

# SMART CONTROL OF WATER SYSTEMS TO IMPROVE MANAGEMENT OF DRINKING WATER QUALITY

Project outcomes contribute to the following UN Sustainable Development Goals:



For more information about the water industry's contribution to the UN SDGs see [Global Goals for Local Communities: Urban water advancing the UN Sustainable Development Goals](#)

## Background

The world is facing significant changes in environmental, economic, and social conditions. To meet these and other future challenges, the water sector needs a whole-of-industry strategic approach that can deliver water supply from catchment-to-customer in a most cost effective and efficient way. This report outlines a process towards achieving that.

This paper provides the foundation of the digital evolution of water utilities. It contains a strategic road map, or pathway, for full system automated control. The end-to-end system model presented is dynamic and self-adaptive—a machine-learning approach. The dynamic, self-adaptive system can identify asset and system issues in real-time using model-diagnostic control methods.

Nothing presented in the report is new. Rather the proposed approach is to adopt existing and well-tested technologies and process control techniques.

The strategic road map provides a program for adoption. It clearly shows a utility what it needs to do to ultimately achieve full automation, and when it needs to do it, depending on its current system of operation.

## Outcomes and Benefits

The one-system approach described in this report is intended to provide greater visibility of system status and achieve operational control in real-time to:

- increase system efficiency, agility, and responsiveness



- improve knowledge management capability through machine learning
- achieve real-time monitoring and control
- appropriate data to provide a predictive capability and improve the customer interface through better service fault prediction, detection and response
- provide more timely and appropriate customer communications.

## Availability

This project was completed in April 2017. It was funded by the following WSAA members:

Barwon Water	Melbourne Water
Central Highlands Water	South East Water
Coliban Water	Seqwater
Gosford City Council	Sydney Water
Hunter Water	Unitywater
ICON Water	Veolia
Logan City Council	Water Corporation

Members have agreed to make the report available to all WSAA members free of charge.

You can access the report by requesting to join the project page in the members area of the WSAA website here: <https://www.wsaa.asn.au/community/project/smart-control-water-systems-improve-management-drinking-water-quality-complete>.

Alternatively, contact [Jennifer.bartlesmith@wsaa.asn.au](mailto:Jennifer.bartlesmith@wsaa.asn.au) or [info@wsaa.asn.au](mailto:info@wsaa.asn.au).