



# WORKSHOP/PANEL PROGRAM

**TUESDAY, 7 MAY**

**4.00PM–5.30PM**

## **W** WORKSHOP ONE

**WSAA PRESENTS: INDUSTRY COLLABORATION TO INCREASE INNOVATION FOR PIPE REHABILITATION**

**ROOM 213**

Research shows that our customers want us to be efficient and plan for the future. To do this we need to innovate, adapt to change and create new partnerships that lead to cost effective solutions. Aging pipes offer us this opportunity! With enough kilometres of pipe to circle the earth six times, new and innovative solutions are needed for future pipe renewals and replacements. **At this interactive workshop, we are looking for representatives from across the entire spectrum of the water industry, where you will have the opportunity to provide your ideas and contribute to the collaborative effort needed in this space to challenge the status quo.**

Australia has in excess of 140,000 km of sewer mains, 190,000 km of water mains and countless concrete structures. Costs to replace pipes are increasing rapidly, and typically range from \$400/m (small pipes, rural) to \$4000/m (large pipes, urban). Additionally, customers and communities are concerned about asbestos cement pipes, traffic management and general disruption to their lives during renewal activities.

New water and sewer pipe rehabilitation technologies and coatings offer the opportunity to defer asset replacement/rehabilitation and reduce costs significantly. However, the adoption of new technologies for pipeline rehabilitation and concrete asset protection has been limited in Australia for a number of reasons. Utilities and service providers need scientific evidence and return on investment – both of which can be achieved through innovation. With procurement strategies evolving there are opportunities for new partnerships, new funding options, fit for purpose solutions that in the end benefit the customer.

While there has been some progress, including the \$24 million CRC-P pipe linings initiative (which includes Federal Government funding) currently in progress, there is still more to be done in improving the understanding of liner products and getting them adopted into the Australian market more efficiently.

The workshop will include an overview of current work on asset rehabilitation and the CRC-P project, which includes some 30 participants from manufacturers, applicators, water utilities, researchers and NGO's. We will also cover the challenges to embracing new products and the potential solutions. Perspectives from water utilities and service providers will be heard and tables will workshop what needs to change to increase the introduction and uptake of new and innovative solutions into the Australian market.

Workshop outcomes will input into the forward work program for the Water Services Association of Australia. Join us to explore the next steps in forging new partnerships to create pipe renewal solutions that are innovative, low cost and backed by scientific evidence.

### **Presenters:**

- ▶ **James Goode**, Asset Management Program Coordinator, WSAA, Melbourne
- ▶ **Dammika Vitanage**, Asset Infrastructure Research Coordinator, Sydney Water Corporation, Sydney
- ▶ **Duncan Sinclair**, Team Leader Asset Management, South East Water, Melbourne
- ▶ **Chris Frangos**, ASTT President, ASTT, Melbourne

## **W** WORKSHOP TWO

**SDG SPECIALIST NETWORK AND IWAA PRESENT: IMPLEMENTING THE SUSTAINABLE DEVELOPMENT GOALS UNDER CLIMATE CHANGE: NEW PARTNERSHIPS FOR TRANSFORMATION**

**ROOM 210**

“The United Nations’ Sustainable Development Goals (SDG) call for balanced progress on economic development, social inclusion and environmental sustainability – across nations and generations. Water drives progress on the goals, leading to the declaration of the UN International Decade for Action: Water for Sustainable Development 2018-2028. Climate change steps up the challenge, calling for transformative action.

Together, the Australian Water Association SDG Specialist Network and the International Water Association Australia will lead a vibrant and productive dialogue between water sector attendees and challengers from sectors beyond water. Workshop attendees will develop action plans for new partnerships dealing with emerging priorities in food and agriculture, One Health, energy and emissions, insurance and social inclusion.

Partnerships are central to making progress on the SDG. As described by SDG 17, partnerships: “*Strengthen the means of implementation and revitalize the global partnership for sustainable development*”.

How can water professionals activate partnerships in pursuit of the SDG under climate change? To explore this question, we have selected five sectors – each facing emerging or exacerbated challenges due to climate change.

Hear from Professor John Thwaites, Chair ClimateWorks and Monash Sustainability Institute, about the impacts of climate change on achieving the SDG and how we measure progress. Professor Thwaites will then introduce ‘Challengers’ from other sectors:

### **Challengers and Panellists:**

- ▶ **Food and agriculture** – **Professor Andrew Campbell**, Chief Executive Officer, Australian Centre for International Agricultural Research, Canberra will address the worsening of water scarcity and land degradation under climate change and population growth; what hurdles need to be overcome?
- ▶ **One Health** – **Associate Professor David Harley**, Zoologist, Epidemiologist and Medical Practitioner, Mater Research Institute-UQ, University of Queensland and Visiting Fellow, National Centre for Epidemiology and Population Health, The Australian National University will focus on the linkages between human, animal and ecosystem health; how will climate change adjust these drivers?
- ▶ **Energy and emissions** – **Ms Vanessa Petrie**, Chief Executive Officer, Beyond Zero Emissions, Melbourne will explore how we can achieve resilient, low carbon economy and what are the barriers?
- ▶ **Insurance** – **Mr Tom Davies**, Special Risks Climate Change, Insurance Council of Australia will outline the growing imbalance between Australian premiums and costs, asking will Australia become ‘uninsurable’, and should we allow that to happen?
- ▶ **Social inclusion** – **Associate Professor Joanne Chong**, Research Director, Institute for Sustainable Futures, University of Technology, Sydney will explore how community vulnerability impacts on meeting the SDG; how can we ensure no one is left behind?

Workshop attendees will work together with Sector Challengers in roundtables to address:

- ▶ How should the water sector be working to advance these emerging challenges in other sectors? What partnerships will be helpful and how should they be initiated and led?
- ▶ What should we, as individual water professionals, be doing?

All are welcome at this workshop where we will share our ideas and develop the foundations for future partnerships to make progress on the SDG under climate change.

### **Facilitators:**

- ▶ **Dr Suzy Goldsmith**, Co-Chair, Australian Water Association SDG Specialist Network
- ▶ **Mr Darryl Day**, Chair, International Water Association Australia



## P PANEL THREE

### WATER QUALITY SPECIALIST NETWORK PRESENTS: DROUGHT, DELUGES AND DISINFECTION; MANAGING WATER QUALITY IN AN ENVIRONMENT OF CLIMATE CHANGE

#### ROOM 215

The world is slowly but surely transforming around us. The effects of climate change are manifesting in ways that have direct and significant impacts on the water industry. To ensure continued supply of clean and safe water into the future, the water industry needs to adapt accordingly. Extreme weather events, prolonged droughts, and increasing temperatures are exacerbating the already dynamic nature of water quality and proactive risk management.

Real perspectives, stories and experiences - the impacts of climate change on water quality from catchment to customer tap. This panel session will provide a forum to discuss and engage in how different facets of the water industry are transforming and adapting to meet the challenges associated with these changes.

- ▶ How can drinking water system resilience be achieved in systems that are not prepared for multiple or such extreme impacts of climate change?
- ▶ How do we assess the compounding of multiple impacts/risks? Is it possible to develop adaptation measures for such risks?
- ▶ Is there a trade-off between quality and quantity?
- ▶ Is it possible to comply with water quality regulations under extraordinary circumstances and scenarios?
- ▶ How do we decide on trigger points for action?
- ▶ How will changes to drinking water guidelines impact water providers?
- ▶ Are there any key gaps in technology or research?

Explore the trends and impacts of climate change on drinking water quality, hear about real solutions and share your own stories. From catchment management and raw water quality (pathogens, nutrients, algal blooms, taste and odour, organics and other emerging contaminants); to impacts on treatment processes and, monitoring/analysis techniques and emerging technologies; to ongoing managing water quality through the distribution system to customers.

The intended audience are members of the water industry working in fields impacted by or are interested in the impacts of climate change on water quality. The aim of the workshop is to bring together the specialist knowledge and experience relating to climate change impacts on water quality (catchment to tap), to provide an opportunities to engage in discussion with water industry professionals in the same situation, identify knowledge and research gaps, to fuel future collaboration in the industry and to develop a shared understanding of the risks and a path forward for mitigation measure formulation.

#### Facilitators/Panellists:

- ▶ **Fiona Smith**, Executive Manager of Water Quality, Catchment Protection and People & Culture, WaterNSW, Sydney
- ▶ **Stuart Khan**, Professor Civil and Environmental Engineering, UNSW, Sydney
- ▶ **Duncan Middleton**, Principal, Water Quality, SEQ Water, Brisbane
- ▶ **Sally Williamson**, Senior Water Technologist, Jacobs, Sydney
- ▶ **Andrew Bath**, Principal, Water Quality, Water Corporation, Perth

## W WORKSHOP FOUR

### SOUTH EAST WATER & INTELLIGENT WATER NETWORKS PRESENTS: OPPORTUNITIES FOR ARTIFICIAL INTELLIGENCE IN THE WATER INDUSTRY

#### ROOM 212

Got a problem and a mountain of data to go with it? Artificial intelligence (AI) offers a powerful approach to transforming data into useful outcomes, supporting decision-making and even taking control of processes.

In this workshop facilitated by the Intelligent Water Networks (IWN), participants will learn what AI is and hear real experiences with AI from within the water industry - both local and abroad. Participants will then get the opportunity to work together to define problems to solve with AI and match possible solutions.

We love to be in control and think that we know the answers and the outcomes - in today's data-laden world this simply isn't possible. Artificial intelligence offers the opportunity to process data so that decisions and processes can be automated, leading to efficiency gains and the liberation of resources from the routine to the creative and strategic. Artificial intelligence offers the opportunity to bring together apparently disparate sources of data and tell us what we don't know - transforming our insight and awareness - leading to step-changes in service and efficiency.

Participants from water authorities will walk away from the workshop with potential solutions to their organisations problems and collaboration opportunities to facilitate their success. For technology solution participants it provides a unique opportunity for industry insight into the problems to be solved and opportunities for further discussions and collaborations.

#### Presenters:

*"What does it all mean - artificial intelligence, deep learning, machine learning."*

- ▶ **Dr Adam Makarucha**, AI Expert & IBM Q Ambassador, IBM Systems - ANZ

*"The status of AI in the global water industry"*

- ▶ **Dr Michael Storey**, Managing Director, Isle Utilities (Asia-Pacific), Sydney

*"Predicting operational hotspots - the Western Water experience"*

- ▶ **Glenn Harris**, Team Leader Operations Centre and Asset Information, Western Water, Sunbury

*"AI in Water - successful international case studies"*

- ▶ **Dr Quentin Bechet**, Project Manager, Veolia, Melbourne

*"Interactive Session - matching problems to solve with AI technology solutions"*

- ▶ **Dr David Bergmann**, Data & Analytics Program Lead, Intelligent Water Networks, Melbourne

Don't leave that mountain of data and pile of problems to solve for another day! Join like-minded professionals to learn how AI can transform your problems into solutions, find new partners and join new collaborations.



## TUESDAY, 7 MAY

### 4.00PM–5.30PM

#### **P** PANEL FIVE

UNIVERSITY OF NEWCASTLE PRESENTS: MICROPLASTICS – MEGAPROBLEM?

**ROOM 218**

Plastics are used in every aspect of our lives. We use some form of plastic, directly or indirectly every waking hour. Hence the prevalence of plastics in the environment is ever increasing, and contributes to the generation of microplastics. The awareness of the problems of microplastics and their impacts on the environment is steadily increasing. Concerns about the occurrence, distribution and toxicology of microplastics has become a focus of worldwide public attention. In order to address some of these issues and Transform Our World, it is acknowledged that we need to improve our management of plastics. This includes the management of microplastics in the water industry.

Microplastics are of significant concern in the water industry. Wastewater has been identified as a point source of microplastics to the marine environment. These microplastics may pose a direct threat (by ingestion), or indirect threat (by acting as potential stressors or vectors of contaminants), to marine organism. The microplastics from wastewater may be transferred through the food web and end up in our guts and bloodstream. Microplastics in the drinking water supply may also end up in our guts and bloodstreams. How significant is the problem? What are the ramifications of microplastics? Is it a megaproblem? Or is it just another conspiracy theory? There are many questions and concerns, but to date, there are limited studies that have been undertaken in this area. The behaviour, fate, toxicity and transport of microplastics, as well as the impacts are currently being studied around the world to determine the severity of the issue. Issues as to what needs to be done, what is being done, and what can be done to Transform our World by the water industry will be addressed during this Panel session.

Meet a panel of leading experts who have been working to find the answers to some of the many questions, develop guidelines and have some of your concerns addressed. Find out what is happening in the industry, and how you can help!

#### **Facilitator:**

- › **Kala Senathirajah**, PhD Candidate, University of Newcastle

#### **Panellists:**

- › **Thava Palanisami**, Senior Research Fellow, University of Newcastle, Newcastle
- › **Suresh Valiyaveetil**, Associate Professor, National University of Singapore, Singapore
- › **Dr David Cunliffe**, Principal Water Quality Adviser, SA Health
- › **Dr. Bob Symons**, Regional Technical Manager, Eurofins Environment Testing Australia & New Zealand
- › **Anna Lundmark**, Manager Science and Innovation, Hunter Water, Newcastle
- › **Ian Bail**, Manager Service Delivery, Wannon Water, Warrnambool
- › **Kathy Northcott**, Research Manager, Water Research Australia, Adelaide

#### **W** WORKSHOP SIX

THRIVING COMMUNITIES PARTNERSHIP PRESENTS: IMPROVING ACCESS AND SUPPORT FOR CONSUMERS WITH COGNITIVE DISABILITIES

**ROOM 217**

Just like water is a human right – so too is the right for customers to have choice and to make informed decisions about their services. Imagine going hungry because you were ignored when trying to buy your lunch or you were hung up on when you are trying to ask a question about your water bill – because you don't sound the same as many others.

For people with a cognitive disability this is a daily reality. As service organisations we do not intentionally set out to exclude people – but, the way in which organisations provide products and services can sometimes result in barriers. These include; providing unsuitable information, stigma and discrimination, communication difficulties and lack of support for people when making decisions. People with a cognitive disability identify as having difficulty with memory, concentration, learning, cognition or decision making and may suffer from intellectual disability, acquired brain injury, dementia or severe mental health.

In a recent Research Report by Melbourne University supported by Melbourne Social Equity Institute, Improving Access for Consumers with Cognitive Disabilities – A Guide for Retailers, recommendations are made as to the opportunities for businesses to improve access and support. Funded by Thriving Communities Partnership, the research and recommendations were co-designed with people with lived experience, academia, utility retailers and the community sector.

We don't know what we don't know. This workshop will provide the opportunity for participants to hear from individuals with lived experience and to get a better understanding of the barriers they have faced. The workshop will be co facilitated by Ciara Sterling, CEO of Thriving Communities Partnership and 2018 Water Professional of the Year. Participants will hear the insights from the research and will be given an opportunity to put the top 5 tips into practice in a highly interactive session. Participants will focus on scenarios where communication has gone wrong and be asked to come up with suggested improvements based on what they have learned from the facilitators and the research.

Come along to be better placed to make improvements in your own organisations by building empathy for those living with cognitive disabilities and gaining a better understanding of the recommended approach. Small changes within business can have big impacts on people.

To find out more about the research head to <https://thriving.org.au/what-we-do/projects/supported-decision-making>

#### **Facilitators:**

- › **Voice at the Table**, Melbourne
- › **Ciara Sterling**, CEO, Thriving Communities Partnership, Melbourne

## P PANEL SEVEN

### AUSTRALIAN WATER ASSOCIATION PRESENTS: VIETNAM-AUSTRALIA WATER UTILITY IMPROVEMENT PROGRAM OUTCOMES AND LESSONS LEARNED

#### ROOM 216

This panel will provide an opportunity to hear the experiences and outcomes from the ten water utilities involved in the Vietnam – Australia Water Utility Improvement Program (WUIP) over the past 3 years involving:

- › Son La Water Company – Cairns Regional Council Water & Waste
- › Saigon Water Corporation – Seqwater
- › Binh Duong Water Company – Westernport Water
- › Phu Tho Water Company – Coliban Water
- › Hue Water Company – Western Australia Water Corporation

The WUIP, supported by the Australian Water Partnership, has delivered improved water services to over 10 million customers in Vietnam through the sharing of knowledge and tools to support key areas of water utility performance including asset management, water quality, human resource development and business development. The panel will also present upcoming opportunities for Australian water professionals to get involved in future WUIP's in Indonesia, Cambodia and the Pacific.

#### Presenters:

- › Carmel Krogh, President Elect, Australian Water Association
- › Mr Cao Lai Quang, Chair, Vietnam Water Supply and Sewerage Association
- › Professor Nick Schofield, CEO, Australian Water Partnership
- › Paul Smith, International Manager, Australian Water Association
- › An Nguyen, International Coordinator, Australian Water Association

#### Panelists:

- › Son La Water Company and Cairns Regional Council Water & Waste
- › Saigon Water Corporation and Seqwater
- › Binh Duong Water Company and Westernport Water
- › Phu Tho Water Company and Coliban Water
- › Hue Water Company and Western Australia Water Corporation

This panel is proudly supported by:



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## P PANEL EIGHT

### WATER RESEARCH AUSTRALIA PRESENTS: THE FUTURE ROLE OF CATCHMENTS – ARE LIVEABILITY OUTCOMES ALIGNED TO PUBLIC HEALTH PROTECTION?

#### ROOM 211

Source water protection underpins the safety and affordability of drinking water supplies whereby prevention of contamination provides greater surety than removal of contaminants. As part of the multiple barrier approach, the Australian Drinking Water Guidelines emphasises the protection of source waters to the maximum degree possible. Water utilities have been placed under increasing pressure to introduce or increase recreational access to drinking water catchments and water storages. While conscientiously delivering safe and reliable drinking water from 'catchment to tap', recreational activities pose increased challenges for water utilities to safeguard drinking water supplies and maintain affordability. When considering the future role of catchments in Australia, the compounding challenges from threats of climate change, this panel will engage and bring to life the future role of our catchments as we pose the question: "Are liveability outcomes aligned to public health protection?"

Drinking water catchments and storages are an attractive location for initiatives seeking to improve the liveability of a region. However, their traditional role is to support health protection via the exclusion of human activity, minimising human-derived hazards to drinking water supply. The booming population growth in Australia's urban and major regional centres has triggered increasing interest in evaluating the role of our catchments.

This session intends to synthesise the facilitators and barriers to the use of drinking water supply catchments for recreational activity. It will seek to understand how their role might be transformed such that health protection through safe drinking water supply is assured whilst opportunities to improve liveability are supported where appropriate. An interactive audience session including debate, discussion, expert reviews and online voting. To open by introducing participants to various perspectives from water suppliers and catchment managers through to public health experts from SA, NSW, QLD, WA and VIC, we are sure to give a nationally engaging session that is thought provoking.

The speakers will frame a debate by providing a summary of recreational access arrangements in their jurisdictions. Including experiences of parliamentary enquiry, and examples from both open and closed catchment perspectives, as well as a broad national perspective from 5 states. The audience will then be called upon to discuss their own experiences and views. At the start and end the session, the audience will vote for or against the motion.

The session will actively draw upon attendees' knowledge and experience. The output will synthesise these results into a collection of findings. The intent of the session is to promote awareness and open discussion of the changing expectations for the role of catchments. With the intent to equip attendees with a foundational understanding of various issues, to benefit their professional practice and enable them to critically consider for their own region; the underlying causes for changing expectations of catchment use; the expectations of the public; and discuss the strengths and limitations of forecasting methods.

#### Presenters:

- › Kelly Hill, Research Manager, Water Research Australia, Adelaide
- › Chris Owens, Senior Analyst, Sydney Water / Doctoral candidate, University of New South Wales, Sydney
- › Cameron Veal, Catchment Water Quality Technical Coordinator, Seqwater, Brisbane
- › Rachel Miller, Head, Water Quality, Water Corporation of Western Australia, Perth
- › Suzie Sarkis, Manager Water Program, Department of Health and Human Services Victoria, Melbourne
- › Dan Hoefel, Senior Manager Water Expertise & Research, SA Water, Adelaide



## TUESDAY, 7 MAY

### 4.00PM–5.30PM

#### **W** WORKSHOP NINE

MELBOURNE WATER PRESENTS: CLIMATE CHANGE MITIGATION - MAKING A DIFFERENCE

**ROOMS 219 & 220**

The aim is not to focus on the “doom and gloom” of climate change, but on the positive actions that can be taken to help us all move in the direction of a carbon neutral economy, thus reducing the effects of climate change. Our intent is that this workshop be inspirational, motivating people to consider undertaking further climate change mitigation initiatives within the water industry.

The workshop begins with a guest speaker who will speak about the effect of climate change on the resilience of a city’s water supply, the effect on water utility assets, challenges in reducing greenhouse gas emissions, and the role of policy in bringing about greenhouse gas emissions in the water and other sectors. This will be followed by 6 case studies based on greenhouse gas reduction actions being undertaken by water utilities in four states to reduce greenhouse gas emissions. A panel session will follow these case studies with the audience having the opportunity to ask questions of the presenters. A brief outline of each case study will also be available for attendees to take away with them.

#### MC:

- › **David Hardy**, Team Leader Innovation & Partnerships, Melbourne Water Corporation, Melbourne
- › **Chris Williams**, Manager Integrated Planning, Melbourne Water, Melbourne

#### Guest Speaker:

- › **Dr Jill Fagan**, Energy, Environment and Climate Change, Department of Environment, Land, Water and Planning

#### Panellists:

- › **Ms Deborah Riley**, Principal Resilience, Melbourne Water Corporation, Melbourne
- › **Dr Ben van der Akker**, SA Water Corporation
- › **David Derkenne**, Hunter Water Corporation, Newcastle
- › **Mr Michael Thomas**, Barwon Water
- › **Dr Heri Bustamante**, Sydney Water

#### **P** PANEL TEN

WATER EFFICIENCY SPECIALIST NETWORK PRESENTS: THE ILLUSION OF AVERAGES AND THE MISSED OPPORTUNITIES - THIS PANEL MIGHT CHANGE EVERYTHING YOU THOUGHT YOU KNEW ABOUT WATER EFFICIENCY

**WOOD THEATRE - EXHIBITION HALL**

Water demand is deceptively complex, and incredible opportunities for improving efficiency are hiding in plain sight. Average assumptions are not useful at the lot scale where real people use water. These variations in behaviour and situation propagate throughout urban water systems driving critical complexity.

Often this complexity is ignored with broad-brush assumptions and averages used in decision-making, blinding us to savings we can no longer afford to miss. To explore these concepts the panel will draw local examples; from real projects demonstrating improbable value from efficiency, to full system analyses of Australian cities, network opportunity maps and non-residential low-hanging fruit.

#### Panellists:

*“From systems approaches to ‘bathrooms of the future’ how new thinking and new technologies can open new solutions”*

- › **Rachel Watson**, Institute of Sustainable Futures

*“The illusion of averages, systems thinking and network mapping opportunities”*

- › **Peter Coombes**, Urban Water Cycle Solutions

*“Remarkable results from the residential strata sector”*

- › **Andre Boerema**, Program Manager Drought, Sydney Water

*“Missing Opportunities by Over-Simplifying? Non-Residential Water Efficiency as an Example”*

- › **Adam Jones**, Principal Engineer, Water Efficiency Lead, BMT

*“Understanding customer segments to target water efficiency programs”*

- › **Melanie Marantelli**, Manager Campaigns and Programs, Yarra Valley Water

New perspectives will be presented and discussed on water and the circular economy, water efficiency, new supply vs reduced demand, improving customer outcomes, implementing Sustainable Development Goal (SDG) transformation and liveability.

The objective is for all attendees to experience respectful, intelligent and entertaining discourse on diverse, fresh and vitally relevant ideas – and ideally walk away with a fresh perspective, even a new paradigm on how our water systems could be managed.

Specifically, the content will:

- › Unpack the illusion of averages, what they hide about the environments we operate in and how they distort our analysis and planning – especially the case of unreliable water security and infrastructure predictions.
- › Present detailed historical and future economic outcomes for cities.
- › Discuss network opportunity maps for urban areas – how incredible economic outcomes are possible with smart spatial targeting.
- › Present the complex nuances of end use behaviour based on detailed data collection, and how these nuances are more important than we thought for the system.