

Best People, Best Water, Best Team!

Once a year we get the opportunity to acknowledge our high achieving water operators, with the 2017 qldwater Young Operator of the Year and Civil/Allrounder award recipients announced at the 42nd Queensland Water Industry Operations Conference at the Logan Metro Sports Centre on Thursday 8 June.



Starting as an industry trainee three years ago, **Harry Coleman** from Toowoomba Regional Council walked away with the 2017 Young Operator of the Year Award because of his thirst for knowledge and his willingness to embrace new technology.

Harry jumped at the opportunity to become a full time Assistant Operator and after completing his Cert III in Water Treatment Operations, requested to complete extra modules based on Wastewater treatment which will set him up for Cert IV Diploma and Certification in the future. His technical skills allowed him to operate and optimise a new Water Treatment Plant fitted with the latest technology.



The 2017 Operator of the Year (Civil/Allrounder) has a track record of swooping in and transforming water and wastewater operations teams.

Glenn Cook from Gladstone Regional Council has a passion for learning, achieving a raft of qualifications since joining the water industry. Armed with a Cert IV in Water Operations and a Cert IV in Business Frontline Management, Glenn has significantly improved work culture among operators in his team, implemented an improved sampling regime at all wastewater treatment plants and overhauled a number of workplace health and safety requirements in his workplace.

A special commendation went to **Andrew Watson** from South Burnett Regional Council. Described as a valuable mentor who goes above and beyond in the operation of treatment facilities throughout the region, Andrew has been instrumental in the successful construction and commissioning of both a Water Treatment Plant and Wastewater Treatment Plant.

The event also saw the City of Gold Coast's "Tapping Tubbies" team beat their own 2016 record in this year's Queensland Mains Tapping Competition. Well done to **Trent Roberts** and **Spencer Stacey**.

Message from CEO

The **Water Connections Tour**, supported by Dial Before You Dig for several years has always been an important platform for our member engagement and this year's Water Connections Week provided another great opportunity to visit members to hold discussions with councils and tour infrastructure.

The inclusion of Queensland Government representatives is particularly valuable with the Departments of Energy and Water Supply and Health being regulars for a number of years, and the Department of Environment and Heritage Protection being involved for the last few. Given the latter's strong historical compliance focus, it has been particularly rewarding to see our members engaging in frank discussions around real world challenges, with the department being particularly proactive in working with members to achieve practical solutions. Due credit to the two Chris's – Mooney and Hill for their commitment to work with stakeholders.

This year's tour focussed on Wide Bay Burnett/ Central Queensland and I've selected a few highlights from site visits to include for this issue.

Bundaberg Regional Council's **Rubyanna Wastewater Treatment Plant** is currently under construction and is an impressive piece of infrastructure. Designed for 50,000 EP, on completion the plant will see the decommissioning of the existing Bundaberg East STP. The plant features a small footprint, closed inlet structure, biological and chemical scrubbing for H₂S, and membrane filtration meaning no post-treatment disinfection.

Class "A" effluent will support a range of reuse options and a 450KW solar farm is also under construction to offset up to 40% of the plant's energy usage.

North Burnett Regional Council showed off its innovative rock filter effluent ponds, as well as the new water plant at **Eidsvold**. This WTP uses conventional processes and pressure filters, and is both relatively low cost to run and simple to use.

Both plant upgrades are linked to Trevor Harvey's participation in **qldwater** projects or researching ideas presented at **qldwater** events – he epitomises the "fit for purpose" mantra and extracts full value from the network.

Moura's WTP has recently been upgraded for growth in the community, with several challenges in commissioning the new plant. Banana Shire Council's recent focus has included worker and contractor safety and improving procedures in response to a number of incidents.

Woorabinda Aboriginal Shire Council was working through a number of issues with its STP but the WTP was an earlier model of the new Eidsvold plant and was still running well. A focus of the visit was to help facilitate future collaboration between Woorabinda and Central Highlands Regional Council. Investigations have commenced into mutual support for water and sewerage operations through the Queensland Water Regional Alliance Program.

The impacts of recent flooding in Rockhampton were clearly evident and tour highlights included the **South Rockhampton STP** which has undergone a series of major works

to deal with plant performance and increased flows from elsewhere in the collection network.

The plant handled the flooding very well thanks to some proactive long term and immediately pre-event planning decisions. Other major challenges include H₂S and corrosion.

Livingstone Shire's **Emu Park Sequential Batch Reactor STP** has a history of commissioning issues but is now on a continuous improvement pathway thanks to a new inlet structure and several process enhancements.

Gladstone's main STP is an older trickling filter system augmented with a newer extended aeration (activated sludge) plant. A number of suggestions were made to assist in plant optimisation.

We would like to acknowledge long-term TRG member and experienced treatment manager Jeff Rohdmann for joining the tour party and providing invaluable advice along the way.

Dave Cameron

(Below: Jeff Rohdmann in discussion with Glenn Cook at the Gladstone STP.)





The Essential First Step.

Water Connections Week in pictures

To see more photos of the Water Connections Week and highlights from our other events, check out our SmugMug gallery at <https://qldwater.smugmug.com/>

Bundaberg



Eidsvold



Moura



Bundaberg



Eidsvold



Moura



Eidsvold



Moura



Woorabinda



Rockhampton



Gladstone



Woorabinda



Rockhampton



Gladstone



Rockhampton



North Queensland Conference - Mackay

qldwater held its North Queensland conference at the Mackay Entertainment and Convention Centre on 20-21 July, book-ended with the AWA North Queensland Conference. True to form, both conferences provided some really interesting talks and insights into how regional service providers in the region are facing issues common to the water and sewerage sector.

The **qldwater** conference kicked off with updates from **qldwater** and WSAA as well as the three WIM Alliance councils (Whitsunday, Isaac and Mackay). Feedback showed the audience was particularly impressed with the recent initiatives in the councils and the learnings from Whitsunday about emergency management during Tropical Cyclone Debbie.

As usual for **qldwater** conferences our sponsors took up the quick-pitch challenge providing a series of rapid overviews of their key products and recent advances. The presentations were well received and we like to thank principal sponsor **Aqseptence Group** and gold sponsors **Royce Water Technologies, Lonza** and **Suez** for their support of the program.

Thanks also to Mackay Regional Council for hosting this event, and of course major sponsors Dial Before You Dig and Ixom.

The Department of Energy and Water Supply started the afternoon session with an update on emerging programs and a review of recent water security KPI reporting across the state. The afternoon's technical talks were well received but the presentation by Matthew Harris from Mackay Regional Council ("From Mi Water to Mi Sewer") received the highest audience praise for the day.

Overall the conference showed how the service providers in North Queensland are meeting the challenges of the region but also making strong progress in innovative approaches including collaboration at a regional scale.

At the AWA conference Dave Cameron and Rob Fearon used a live, online audience survey to seek the wisdom of the crowd on questions of water reform (see box below). There were numerous interesting technical papers including several updates from the Department of Energy and Water Supply and the launch of the Queensland Bulk Water Opportunity Statement. Neil Stiles provided an interesting update on the Water Quality Program he is coordinating for the QWRAP Outback Regional Water Alliance.

AWA NQ Conference Audience survey

At the AWA NQ conference the audience was asked their opinions on four questions about the future of the regional water sector.

- When asked "**How should pricing be determined?**", a strong majority favoured a shift to more regulated models with the most popular (43%) being quasi-regulation through introduction of a mandatory pricing model.
- Over 85% of the audience believed that an **infrastructure cliff** would impact the industry with the majority (67%) predicting it would have a medium impact (meaning economic failure for a limited number of communities).
- When asked what the **optimal governance model** was for regional services, only 10% of the audience held with the status quo. Around 44% preferred corporate models (with either state or local government ownership) but another 44% indicated different models were needed in different regions.
- A close majority of the audience believed there should be more **private sector involvement** in the sector leaving 44% indicating the current balance is about right. Of those desiring change, only 2% supported full privatisation while most (50%) preferred more outsourcing and long-term contracts.

Leakage Management Workshop

With an estimated cost of \$200M in water losses in Queensland, it was no surprise that our Leakage Management workshop on 25 May was another sell-out event.

We would like to particularly acknowledge the excellent speakers and discussion leaders from Fraser Coast, Logan, Unitywater, Queensland Urban Utilities, Mackay Regional Council and City of Gold Coast who shared their experiences.

A number of useful resources were identified during the discussion (thanks to David Wiskar), and we gratefully acknowledge the Water Services Association of Australia for agreeing to make a series of publications from 2010/2011 available in our resource library ("other resources" tab). These include: A Review of Pressure Management Practices in the Australian Water Industry, Report on Framework for Targeting Leakage and Pressure Management, Guidelines for Targeting

Leakage Using Nightflow Measurements, Guidelines for Economic Intervention Principles for Active Leakage Control, Guidelines for Information Requirements for Pressure Management Zones Before and After Implementation, Guidelines for Valuing the Benefits of Pressure Management.

The TRG supports a follow-up workshop, combined with automated metering, later in 2018, so watch this space.



Water Demand Management

With water security repeatedly being identified as a key issue for regional Queensland communities, water service providers are faced with the conflicting task of increasing revenue to maintain reliable services while also managing demand in an ever-changing landscape (think climate change, increasing or decreasing populations and legislative requirements to name a few).

A new statewide web resource developed as part of the Queensland Water Regional Alliance Program (QWRAP) aims to provide Queensland water service providers with social media memes to help build a better understanding of water in their communities.

According to Arron Hieatt, Principal Advisor- Advocacy for Water and Sewerage Infrastructure at LGAQ, **qldwater on tap** provides a public-facing framework from where customer focused information can be provided 'on tap' through easily shareable images, infographics and interesting links.

"The common view that being waterwise means saving water is misleading- truly waterwise communities have a deeper understanding of where their water comes from, how it is treated, and what the specific issues are in their region."

Through **qldwater on tap** we aim to teach Queensland communities to value water in times of scarcity, abundance or anywhere in between."

The **qldwater on tap** website promotes the Queensland urban water industry to the general public in order to raise awareness of the challenges these organisations face. Phase one of the project includes a grid of nine waterwise tiles that links to existing resources packaged for use through social media by regional Queensland councils.

It is proposed to scale up the resources to respond to particular needs based around climate, geography and customer attitudes around the state using communications campaigns targeted to specific regions and communities.



Skills Update

Certification News

The national **Certification Framework for Operators within Wastewater and Recycled Water Treatment Systems** was finalised and endorsed by the Water Industry Skills Taskforce following an industry consultation period that was conducted earlier in 2017.

The Certification Framework provides a set of nationally consistent criteria that define and recognise the minimum level of competency and capability required by those Operators who treat wastewater or recycled water to ensure that the final product does not have an adverse impact on the environment or public health, and that its quality is fit for purpose and safe to use.

This national Framework will replace the existing Queensland Sewage Treatment Plant (STP) Operator Certification Framework V2 developed through the Queensland Water Skills Partnership and released in 2015. The overarching principles and standard requirements have been aligned in the new Framework to allow for a simple transition of any operator who is currently certified under the Queensland Framework.

The final Framework is **available here**.

Right:

The first six Wastewater Treatment Plant Operators received their certification at the WIOA conference in June. From L-R Dave Cameron (qldwater), Matthew Ball (Unitywater), Amanda Murchison and Stanley McKercher (Queensland Urban Utilities), Joel Warnes and Brendan Butler (City of Gold Coast), Michelle Hill (qldwater) George Wall (Water Industry Operators Association Australia).

The **SEQ Sewage Treatment Plant (STP) Operator Certification pilot** reached an important milestone with the first six operators being formally Certified at the Water Industry Operators Association (WIOA) Queensland conference in June 2017.

Initiated late 2016 and supported by all the SEQ distribution entities, the 15 participants in this project have utilised the DET 'second chance training' funding to undertake gap training in specific units of competency from the National Water Training Package.

A further ceremony for the remaining nine operators will be held later in the year when all training is completed.

While the pilot was initially based on the Queensland Sewage Treatment Plant Operator Certification Framework, all Certified operators will be automatically transferred to the new national Certification Framework for Operators within Wastewater and Recycled Water Systems. The Queensland operators are the first operators in Australia Certified under the national Framework!



Quick updates

Save the date! Queensland Water industry Skills Forum – Thursday 30th November in Brisbane. This will be a free event for all current Queensland Water Skills Partnership subscribers. Further details coming soon.

The national Water Industry Skills Taskforce met on 22 June, a Communique is **available here**.

qldwater will continue as secretariat of the Taskforce, with CEO Dave Cameron as Chair, for a further 12 months.

A Drinking Water Operator Certification Regulatory Options/Position paper, prepared by **qldwater** on behalf of the WIST, has been endorsed for release and broader communication. The paper is **available here**.

A Technical Advisory Committee (TAC) has been convened to work on the Diploma of Water Industry Operations.

Michelle Hill from **qldwater** is among three Queensland representatives on the TAC.

Queensland Water Regional Alliance Program Update

The QWRAP groups are progressing well for 2017 with each region achieving great outcomes in some challenging circumstances. The alliances are proving useful in meeting the increased demands facing regional service providers, and talks to create other regions are currently underway.

In this issue, we focus on two recently implemented programs from the Outback Region Water Alliance (ORWA) and the Wide Bay Burnett Regional Organisation of Councils (WBBROC). These two regions have delivered programs in the last year which have delivered above and beyond stakeholder expectations.

ORWA Project

The **Outback Regional Water Alliance** has recently completed a number of projects contributing to their overarching water quality program. The projects have seen 13 reservoirs cleaned, 200 km water mains cleaned, trialling of data visualisation tools and regional water disinfection reviews to achieve best practice for the region.

The region's strong collaborative focus on this program has contributed to over \$150,000 in savings and the improved water quality in the region is being recognised amongst the local communities and the industry alike, with ORWA being shortlisted as a finalist in the AWA Awards (Infrastructure category). Moving forward in 2017, the region seeks to further leverage collaborative efforts and has been exploring regional strategies and approaches to solve challenges faced by small and remote communities.

WBBROC Project

The **Wide Bay Burnett Regional Organisation of Councils** have achieved a significant win for the region's sewerage infrastructure. The WBBROC group undertook a sewer relining program which has seen savings of 10% for the participating councils and saved \$2.4 million in capital investment. Led by the Fraser Coast Regional Council under the oversight of the WBBROC Water Alliance, the partnership saw the development of processes and documents which can now provide a basis for joint works throughout the region. The success of the program has led to planning for the next round of regional sewer relining.

Other Regions

The other regions are pressing on with projects and the coming year will prove to be a busy period for all QWRAP groups with a diverse variety of projects ranging from smart cities concepts to regional approaches to water security.

In brief:

- **Whitsunday Isaac Mackay Alliance:** After a challenging period following cyclone Debbie, the region is gradually getting back on track and has commenced a number of projects underpinned by their recent regional risk analysis.
- **Far North Queensland:** the region faces challenges due to size and number of stakeholders but collaboration on water projects and programs continues to be an important consideration.
- **Downs and Surat Basin Area:** the newest region to the program is finding their feet with a number of projects in the wings to begin work on once ratified by the participating councils.

Infrastructure Cliff Research

Each year QWRAP undertakes research into an area of significance for the water industry. This year's research focuses on Queensland's buried infrastructure across the state which consists of water and sewerage pipes with a total length sufficient to stretch around the world twice.

A significant number of the buried pipes were installed before 1960 and are expected to come to the end of their planned life in the next 25 years. The impact of any potential surge in pipe replacement is poorly understood at state and local levels and the research is intended to provide a high level analysis of the much talked about "infrastructure cliff". We look forward to being able to provide further insight into Queensland's large and varied buried pipe infrastructure in future updates.

SWIM Update

Released in time for the third year of KPI reporting, the updated *SWIMLocal* software features indicator alert functionality, allowing easier and more accurate reporting on water and sewerage data.

With minimal changes to the annual water and sewerage indicators since last year, *qldwater* continues to hold discussion with DEWS, ABS, BoM and NPR regarding indicator rationalisation and definition improvement for future reporting.

As a result, BoM have reviewed and aligned the category 7 and NPR indicators for the 2017/18 reporting year and DEWS are currently reviewing their requirements for NPR reporting with the KPI framework.

Lessons Learned from Cyclone Debbie

While cyclones are no strangers to our members in the north, the extended destruction generated by Cyclone Debbie on 28 March 2017 brought with it unique challenges for Mackay and Whitsunday Regional Councils.

Cyclone Debbie made landfall as a Category 4 system approximately 45 km Southeast of Bowen and 15 km north of Proserpine at around 1pm and stayed- with 18 hours of destructive winds and 36 to 60 hours of extended flooding. Severe damage and flooding isolated key staff and extended power outages resulted in loss of communications. Cannonvale, Airlie Beach and Proserpine were without power for 11 days and the Proserpine Depot for 18 days. There were evacuations in and around Mackay and further flood damage as the system travelled south into Northern NSW.

With four water and four sewerage schemes servicing a regional population greater than 35,000, the Whitsunday team had to complete damage assessments on 18 water pump stations, 19 bores, 25 reservoirs and 78 sewerage pump stations.



Above: Staff had to chainsaw their way to reservoirs to conduct structural assessment and water quality testing

“Refuelling and keeping up with constant electrical breakdowns of the 53 generators of various sizes we had put in place became a logistical nightmare, but thankfully the army assisted by filling several of our reservoirs with three 45,000L tankers.”

According to Stuart Boyd, Manager Water Treatment at Mackay Regional Council, it was unusual to have the mobile network down for such an extended period.

“This presented a real problem for us as the SCADA systems for the small townships of Finch Hatton and Eton go through the 3G network and losing it meant we were back to manually checking the reservoir levels. Manual checking wasn’t possible because the roads were cut, but all sites had around five days of water supply in their respective reservoirs prior to the storm, and we wrongly assumed, based on normal consumption levels, that there was plenty of water in these towns.”

While the team focused their efforts on getting water back to the city, the residents from these townships had no way to communicate the loss of supply and it wasn’t until two days later that staff could get in to check the water levels. What they found at Finch Hatton was a completely empty reservoir – closer inspection showed that a tree had come down and broke the water main which subsequently drained the reservoir. A water tanker was brought in to fill the reservoir.

At the township of Eton, flooding in an area called Drapers Siding occurred from large releases from Kinchant Dam. When the residents started



Above: The Whitsunday team set up a temporary operations centre in Troy Pettiford’s garage.

the clean-up the following day, the reservoir was rapidly drained. At this point there was still no power so the bores at Eton were not operational. Once power was restored, a resident was able to contact Council to let us know that the town had run out of water.

The event exposed network vulnerabilities in Whitsunday as well. While reservoirs were filled in preparation, severe damage to infrastructure at the Marina led to similar losses of emergency water storage.

Peter Stapleton, Treatment Operations Manager at Whitsunday Regional Council, noted that despite extensive planning prior to the cyclone, there were many learnings leading to modified procedures for handling future events:

- Never underestimate the amount of water residents will use in the clean-up following flood events
- Make sure you have a comfortable car to make the charging of laptops and mobiles more enjoyable
- Focus on resilience of all asset classes – pipelines, mechanical and electrical



- Revise emergency management plans after events
- Keep key numbers, contacts and backup numbers up to date and easy to access
- Investigate alternative communications options like UHF and digital radios
- Clearly define priority of services during extreme events, balancing emergency resilience needs with normal operational needs
- Pre-position key generators as access may be cut off for extended periods (Whitsunday now has permanent generators for critical water supply points)
- Explore preventative vegetation management at key sites to improve site access following a cyclone
- Understand your network vulnerabilities, especially the location of trees in relation to critical mains.



Future Leadership Program

After reviewing the applications for the first Future Leadership Program we've selected a small group of participants who we believe will be able to make a valuable contribution.

The following participants have been accepted into the first intake for this program over the next 18 months.

- Thakshila Balasuriya- City of Gold Coast
- Daniel Muir – Queensland Urban Utilities
- Stuart Boyd – Mackay Regional Council
- Amanda Murchison – Queensland Urban Utilities
- Jaek Passier – Toowoomba Regional Council
- Brad Milfull – Logan City Council

The final potential participant is currently working through an approval process.

The aim of the Future Leadership Program is to gather current and emerging leaders from across the Queensland urban water sector to discuss future directions for the industry on complex emerging issues. The program will also include opportunities for skills development sessions such as strategic and critical thinking (depending on group preferences).

Congratulations to those involved and we look forward to kicking off the work over the next month and shaping the program for the benefit of future participants.

Events Calendar

September

6 **2017 Annual Forum: No Pain, No Gain - Day 1**
Highlights include a historical tour of some of Brisbane's sewerage infrastructure, the Ixom Best of the Best Queensland Water Taste Test plus the inaugural "Vendor Pitch" session

7 **2017 Annual Forum - Day 2**
Keynotes from the energy sector and Isle Utilities
Strong participation in DEWS and DEHP sessions incl. presentations from each Director General
Conference Dinner

Thanks to our event sponsors **Aqseptence, Lonza, Royce Water Technologies** and **WaterRA**.



More sponsorship opportunities are available - contact Dave Cameron for details.

8 TRG Meeting and AWA Gala Dinner

October

24-26 IPWEAQ State Conference, Townsville.
Sustainability through inspired leadership and community engagement

Get your samples ready!

The **Ixom Best of the Best Queensland Water Taste Test** is on again and time is running out for participants to select their top drop to enter.

The stakes are high. **Toowoomba Regional Council** have been basking in glory for the past year, taking out the 2016 Queensland title AND the 2017 **Water of Origin** at the WIOA Conference earlier this year, where they beat Canberra's Icon Water in a bitter battle for NSW who tasted defeat for the fourth year in a row. Toowoomba will now go on to compete in the **Best Tap Water in Australia** competition, with the winner going on to represent Australia at the International Water Tasting Competition to be held in the USA.

Download the **entry form here**.

Below: Winners are grinners! John Mills from Toowoomba Regional Council basking in the glory at the WIOA Conference where Queensland beat NSW for the fourth year in row.



Welcome New Affiliate Members

qldwater is pleased to welcome **Detection Services** and **Queensland Health** as a new Affiliate Members for 2017/2018. Detection Services specialises in pipeline inspection and water loss management, while the Department plays an important role in co-regulating the quality of drinking water across the state and providing expert health advice and support for risk assessment and incident management.

They join existing Affiliate Members **Trility, Solomon Island Water Authority** and the **Department of Energy and Water Supply**. Affiliate Membership is offered to industry partners, consultants and service providers located in and outside Queensland. Membership funds are directed towards enhancing **qldwater** communication products. Please contact us if you would like more information.



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"The Queensland Water Directorate (**qldwater**) is the central advisory and advocacy body within Queensland's urban water industry and represents members from Local Government and other water service providers across Queensland."