Queensland
Water Regional Alliance Program

ANNUAL PROGRESS REPORT 2019

Councils currently participating in QWRAP:

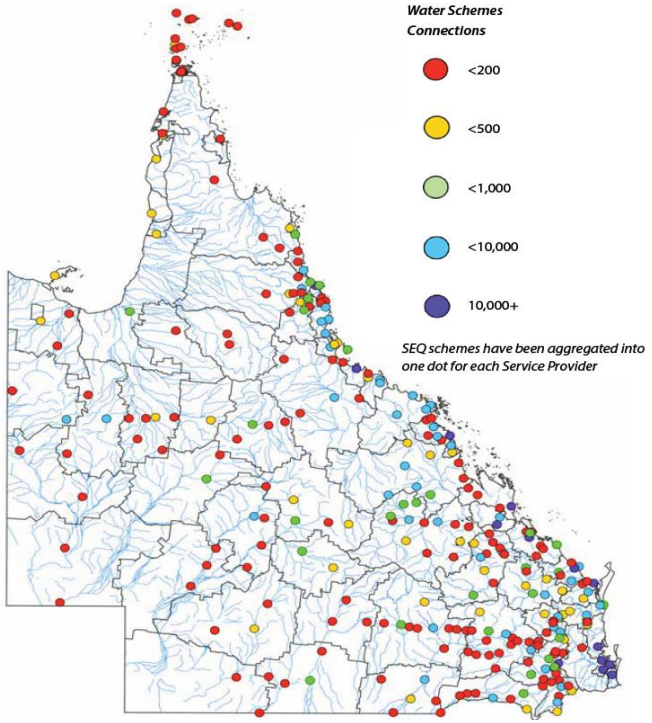
Blackall-Tambo
Regional Council

Table of Contents

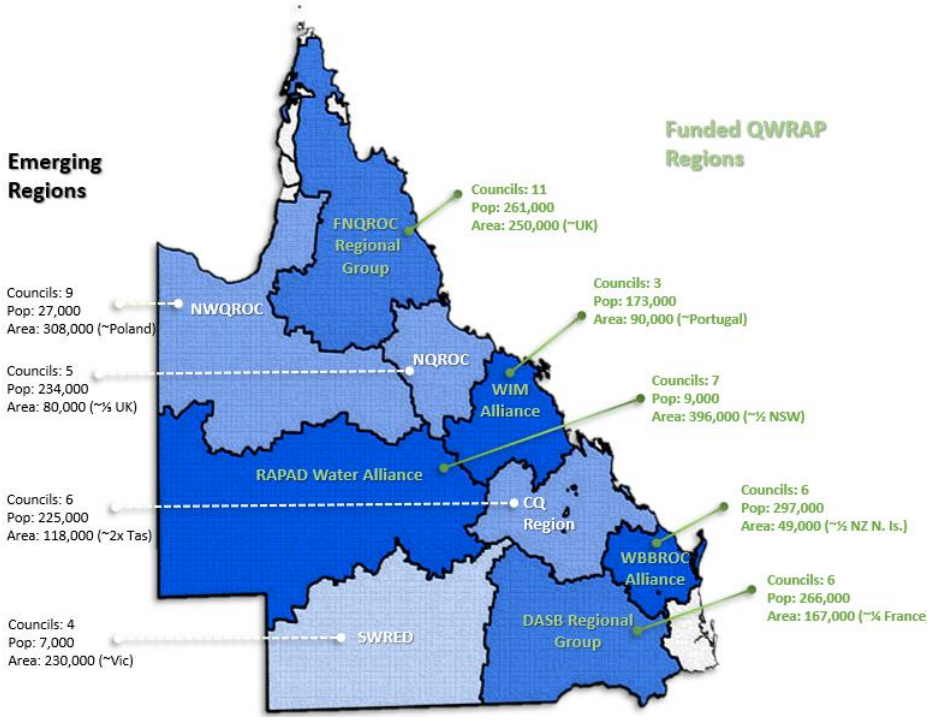
QWRAP - Joining the Dots.

While the majority of Queenslander's call SEQ home, the state has the largest population in Australia living outside cities and inner regional areas. This means that public water and sewerage utilities service numerous dispersed communities as shown below at left. The 77 regional service providers maintain over 370 public supplies up to 100 km apart. Councils rarely collaborate on water and sewerage except in times of natural disaster, where skills, resources and projects are freely shared. Creating opportunities for collaboration outside such events is the aim of QWRAP. Since 2011 QWRAP has been bringing money, people, processes and projects together to drive change and share expertise and knowledge to implement fit-for-purpose solutions that are effective and affordable. QWRAP's five funded regions cover 30 local governments (55% of the State and 21% of the population) across 200 communities working together on water and sewerage management and governance as shown below at right. Three have formed Water Alliances. Additionally, 'emerging regions' are discussing collaboration and some have developed joint projects.

Dispersed Water and Sewerage in Qld



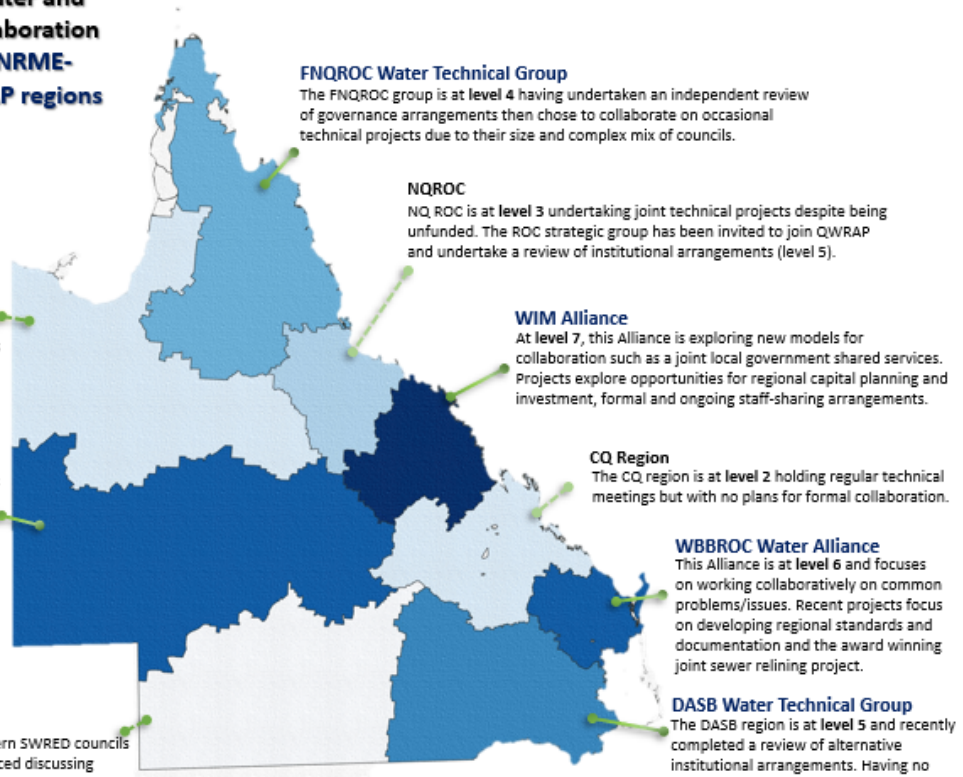
Collaboration Enabled Through QWRAP



Collaboration Maturity

Each region joined QWRAP at a different time, developing targeted arrangements based on local needs. For each, collaboration 'maturity' is assessed based on the type of joint initiatives successfully undertaken compared with a QWRAP schema called the Collaboration Maturity Model. For example, joint infrastructure planning and investment entails significant cooperation and demonstrates high maturity (level 7). The model is designed to reflect stages of regionalisation found in other jurisdictions. QWRAP's intent is for regions' collaboration maturity to increase over time. Seed-funding is provided through a contested 'bid pool' prioritised for projects demonstrating higher levels of maturity. Evolving maturity of QWRAP regions has accelerated in the current round of DNRME funding which commenced in 2018.

Maturity in water and sewerage collaboration highlighting DNRME-funded QWRAP regions



FNQROC Water Technical Group
The FNQROC group is at **level 4** having undertaken an independent review of governance arrangements then chose to collaborate on occasional technical projects due to their size and complex mix of councils.

NQROC
NQ ROC is at **level 3** undertaking joint technical projects despite being unfunded. The ROC strategic group has been invited to join QWRAP and undertake a review of institutional arrangements (level 5).

NWQROC
Initial meetings to discuss collaboration held this year. Planned joint projects were postponed due to flooding : **level 2**.

WIM Alliance
At **level 7**, this Alliance is exploring new models for collaboration such as a joint local government shared services. Projects explore opportunities for regional capital planning and investment, formal and ongoing staff-sharing arrangements.

RAPAD Alliance
The RAPAD Alliance is at **level 6** and works on technical matters such as improving water security and safety, improving operations and joint negotiation with regulators.

CQ Region
The CQ region is at **level 2** holding regular technical meetings but with no plans for formal collaboration.

WBBROC Water Alliance
This Alliance is at **level 6** and focuses on working collaboratively on common problems/issues. Recent projects focus on developing regional standards and documentation and the award winning joint sewer relining project.

SWRED
Level 1: the western SWRED councils recently commenced discussing possible collaboration and further support is planned for the coming year.

DASB Water Technical Group
The DASB region is at **level 5** and recently completed a review of alternative institutional arrangements. Having no over-arching strategic group individual councils are still considering the recommendations of the review while the technical group collaborates on technical projects.

Collaboration Maturity Model

QWRAP Builds Sustainable Water and Sewerage Services

QWRAP is about transforming water and sewerage services from individual local government authorities to more sustainable regional arrangements. QWRAP funding encourages this change in two ways.

First, collaborative projects and activities are encouraged through partial funding. These collaborative projects create economies of scale in responding to common challenges by pooling resources (people, money and expertise). Collaborative projects are funded through a competitive bid pool with funding prioritised on criteria that demonstrate a region's increasing maturity.

Participating councils must also contribute funding to these projects. In return they create opportunities to drive improvements in water and sewerage services, create efficiencies and make savings that would not otherwise be available to individual councils. In this way QWRAP drives new regional development and efficiencies that are not possible without strategic funding incentives.

Second, QWRAP seeks to embed regional sustainability by encouraging councils to investigate the costs and benefits of institutional change. Support for a regional coordinator is provided at 'maturity level 5' where participating councils must agree to consider at least three alternative institutional arrangements for water and sewerage services across their region. The reviews have led three QWRAP regions to create a formal water alliance (maturity level 6) while a fourth is currently considering future arrangements at CEO and Councillor levels.

The drive towards alternative regional arrangements is essential. Numerous independent reviews have recommended such reform for regional Queensland to ensure sustainability of water and sewerage services. QWRAP generates discussion and movement towards regionalisation through a voluntary and cooperative approach involving all stakeholders.

All QWRAP regions have derived demonstrable savings and customer service benefits from cooperative projects. QWRAP has also created a discussion at political level and demonstrated pathways for alternative institutional arrangements. This would not have occurred without the Program and incentives provided by funding to overcome the initial barriers to cooperation and institutional change.

QWRAP has initiated and implemented practical and innovative projects aimed at improving efficiency and effectiveness of business processes at a council level while also driving regional outcomes that have whole-of-sector benefits. The majority have been technical or operational in nature with a select few driving more strategic sustainability outcomes for the sector such as the Water Industry Worker project. Many are addressing immediate challenges but also identifying, and where possible, addressing emerging issues common to regional service providers. Recent examples include standardising operations across councils through a regional Design and Construction Code and cooperatively transitioning management arrangements for multiple sewage treatment plants within a region. These projects have built and continue to improve capacity of the state's water sector workforce, as well as identifying and addressing knowledge gaps and promoting improvements in processes, contracts and business systems. Together with the strategic benefits of regional collaboration they have led to reduced costs, improved efficiency

and contributed to a more sustainable Queensland water sector. This report summarises the key projects undertaken during the 2018-2019 financial year.

It is unlikely that these projects would have been instigated in this timely manner without the support and presence of QWRAP. This is a common view held by participating local governments and reflected in the Benefits Realisation Project that was undertaken by DNRME.

QWRAP is a tri-party partnership which looks to promote innovative, fit for purpose and place responses to complex water and sewerage service challenges. By recognising that one size does not fit all while highlighting important common challenges, this program draws together the expertise and funding of a range of stakeholders – local governments, academics, government and industry to develop solutions that reflect on-ground practicalities. As local governments and industry nominate and determine responses to their regional challenges, the likelihood of these changes being embedded in their own organisations is high.

Year-in-review

The 2018-19 period saw the completion of a range of projects across each region. The following table summarises work funded through QWRAP, key benefits and current status for each funded region.

Region	Initiative	Benefits	Period	Status
FNQROC (Far North Qld)	Training workshops to improve understanding, effectiveness and uptake of a newly developed suite of regionally consistent procurement and contract documents	• Alignment in procurement documentation to facilitate joint procurement • Upskilling local staff in contract management and scoping to improve future outcomes • Reduced inefficiencies in procurement and contractual activities • Extended skills development beyond water and sewerage to whole-of council processes • Promoted competition through attracting wider bids for larger volume of works across the region	2017-19	Complete
	A regional drinking water quality symposium exploring key and unique water quality issues in the region	• Shared knowledge of key water quality risk and common local issues • Identification of possible projects to address regional water quality management • Redirect focus on customer safety and reliability of quality supply. • Learning from state and national experts and regulators that attended the meetings	2018-19	Complete
	Yarrabah analysis of water and sewerage networks	• Ongoing collaboration between Cairns Regional Council and Yarrabah Aboriginal council • Mentoring, technical and strategic support to boost capacity in a small remote council • Improvement of safety, security and sustainability of services in small communities	2017-19	Complete (ongoing unfunded)
RAPAD (Remote Area Planning and Dev. Board)	A collaborative review of telemetry and SCADA systems used across the region	• Cost savings on contracting from joint procurement of common consultant • Identification of urgent telemetry and SCADA system issues and possible solutions/upgrades needed • Review of past practices with gap analysis of local deficits with recommendations on remediation • Improved management of schemes including safety and security of supply	2018-19	Complete (further work in planning)
	Operational database training to operators within region	• Joint regional training to generate efficiencies within all participating councils • Improved quality assurance and reduced duplication and transcription errors • Upskilling of local operators to improve future performance, reduce costs and allow for system redundancy	2017-18	Complete
	An investigation of STP regulatory requirements and performance across the region	• Platform for discussions with Environmental Regulator to streamline Environmental Approvals (EAs) and ensure schemes provide appropriate environmental outcomes • Identify any future stewardship improvement needs for STPs to meet EA requirements and potential to contribute to water security • Shared understanding and knowledge of environmental requirements and the needs of council's sewerage schemes	2018-19 (stage 1)	Complete

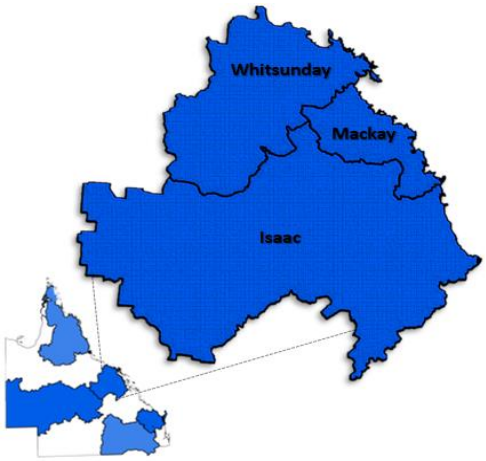
Region	Initiative	Benefits	Period	Status
	Contracts for sewer relining	• Substantial financial savings from joint procurement. • Greater savings in future through 'sweating the assets' – deferring extensive renewals through planned relining and targeted replacement. • Mitigation of risks from leaks and overflows	2018-19	Complete
	Finalisation of water quality improvement program (ongoing program of works)	• Improvement of DWQMPs and regulatory compliance for water quality. • Increased health and safety of water supplies through air scouring, reservoir maintenance and disinfection optimisation. • Improved customer confidence in water supplies maintenance and performance. • IPWEAQ Award Winning: Water Projects under $2 million in 2018	2016-18	Complete (further stages in planning)
WBBROC (Wide Bay Burnett Water Alliance)	A 4-year plan to guide strategic collaboration and identify, and prioritise opportunities for collaboration including shared services, resources and assets	• Strategic collaboration to enable regional resilience, alignment of service standards, identify strategic threats to business continuity (e.g. succession planning, skills and training, recruitment) • Identify regional operational efficiencies that can realise financial and reputational benefits, skills development and productivity gains. • Develop strategic road map for future regional QWRAP institutional arrangements. • Maintain alignment of political and technical groups and the strategic directions for the region	2018-19	Complete
	Investigate water security across the smaller schemes in the region not covered by current RWSSAs	• Review current water supply schemes and identify potential future needs. • Expand regional understanding to specific schemes and local supplies. • Build regional capacity through collaboration with local university and upskilling of students	2018-20	Underway
	Design and Construction Code Development and Governance	• Delivered significant savings through leveraging council technical collaboration and expertise • Regional consistency and contract facilitation for Development Industry • Alignment to national standard for installation of new water and sewerage network assets • Increased collaboration and knowledge sharing through Regional Organisation of Council governance of codes	2017-19	Complete (ongoing planning)
	Sewer relining project II	• New regional joint relining project based on historical relining contract management process • Largest single sewer-relining contract in Queensland • Capitalised on technological improvements developed during stage one • Substantial financial and economic savings (streamlined contracting and economies of scale) • Follow-up to IPWEAQ Award Winning Project: Water Projects over $5 million	2017-20	Ongoing

Region	Initiative	Benefits	Period	Status
WIMWA (Whitsunday, Isaac and Mackay Water Alliance)	A training framework for 'water industry workers'	• Creation of career pathways and job certainty for water industry workers (field and network staff) who can otherwise be under-recognised • Focus on network infrastructure (largest component of water and sewerage assets) • Improved consistency of training for quality and common skill pool • Leading regional Queensland in this area linked to two regions outside the WIM Alliance	2018-2020	Underway
	Review Asset Useful Lives	• Review and knowledge share of asset renewals practices • Regional consistency in repair and replacement of assets • Development of tool to facilitate appropriate timing of when to repair vs. renewals	2018-19	Complete
	Optimise operational control of four regional STPs (including transition manager)	• Savings in transition costs (e.g. 25% saving on legal, 50% saving on planning, one transition team leader equating to 33% saving) • Shared understanding of all four STPs that will enable sharing of resources specifically on technical troubleshooting, maintenance activities and potential resourcing of operators. • Optimising operations and maintenance by seeking efficiencies in management approach (by internalising O&M)	2018-19	Complete
	Regional Operators Forum	• Improved regional safety communication and knowledge sharing • Networking among experts in diverse elements of water and sewerage operations and management • Built regional social capital through knowledge sharing and inaugural Mains Tapping Competition	2018-19	Complete
	Joint design of contracting arrangements for regional STPs	• Financial savings on joint procurement and contract management • Regional alignment of equipment and assets (e.g. spares and parts lists) to promote regional system redundancy and skills sharing • Substantial potential for CAPEX savings through optimized infrastructure investment by taking advantage of a regional-scale approach to strategic asset procurement	2017-19	Complete
DASB (Downs and Surat Basin)	Expansion of water security resources for regional councils	• Improvement in understanding of water security issues across the wider region • Trialed best-practice community engagement consultation in a volunteer council to provide learnings for regional approaches • Maximised communications cross region through consistent messaging and approaches	2017-18	Complete
	The development of regional standards for SCADA systems	• Cost savings on contracting of specialist consultant through leveraging economies of scale • Projected longer term savings through joint procurement of technical support and maintenance services • Avoided future costs due to early replacement or upgrade costs resulting from incorrectly specified equipment • Development of joint SCADA, telemetry and communications infrastructure and harmonisation of operational and maintenance activities	2017-20	Underway

QWRAP Highlights

The following is a summary of select highlights from the past year.

WIM Water Alliance



The WIM Water Alliance includes Whitsunday, Isaac and Mackay Councils and is located on the central east coast of Queensland. The region is dominated by the resources sector and transient population changes reflect the boom and bust cycles of the sector. In the 2016 census, the region had a population of 170,000 people with the majority located in Mackay. The region has been a QWRAP group since 2013 and has evolved into one of the most progressive alliances, selecting strategic projects that demonstrate a high level of regional maturity. An ongoing hurdle within the group is the diversity across the communities served, which range from large coastal populations to small rural towns.

WIM Water Alliance: Training Framework for Water Industry Workers

Description: The WIM Alliance partnered with three councils from other areas (including the FNQROC QWRAP group) to roll out a training program at several locations along the central and northern Queensland coast. This initiative aims to build capacity of civil operators and create a common skills pool and baseline for the field and network staff of the participating councils. This project extends beyond the standard training programs undertaken through QWRAP in the past to include cross-regional collaboration and take advantage of economies of scale building on an existing industry training approach.

Importance: Building the skills and careers of water industry workers (WIW) is a long-standing issue facing the water sector. These workers are employed to maintain the water and sewer networks that service towns of all sizes, and maintain and operate the infrastructure which forms more than 50% of the total value of the sector's assets. Despite significant responsibility and skill levels required for this work, the role of WIW is often overlooked and it can be hard to maintain adequate employment and training for the roles.

Outcomes: The program is ongoing but to date has enrolled 30 WIW across five councils, with 10 enrolled in the Certificate II in Water Industry Operations and 20 enrolled in the Certificate III in Water Industry Operations. The first block of training commenced in September 2018 for 10 workers over three days and all workers have committed to attending four multiple-day training blocks over the next 10 months. The success of the program, which is built on a successful model developed in SEQ, has resulted in plans for extension and interest from other regions.

Maturity: Adoption of skills development programs across multiple councils and multiple regions requires significant commitment, agreement and joint planning by participants and demonstrates a high level of maturity. WIMWA is operating at a level 7 on the maturity scale, which considers joint local government shared services.

WIM Water Alliance: Optimising Operations at Four Regional STPs (Transition Manager)

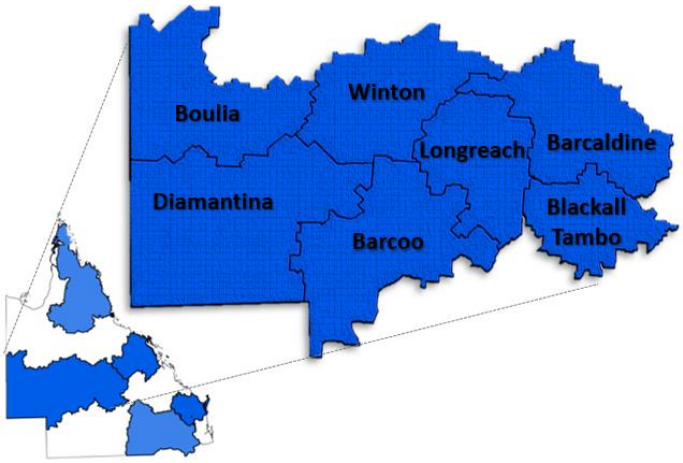
Description: The WIM Water Alliance embarked on an innovative joint program to transition four STPs from private sector management back into the internal management of Mackay and Whitsunday Regional Councils. In order to do this, the two councils employed a single STP Transition Manager to negotiate the change in the four STPs across two local governments.

Importance: Outsourcing the operation of treatment plants to the private sector is a common practice in the water and sewerage sector to seek cost savings and innovation. In this case the external contracts were not working satisfactorily and both councils independently resolved to bring operations back within the council. This is a difficult process and this formal collaboration created a common dedicated resource to oversee the transition for all four STPs, creating efficiencies with costs of employment shared between organisations. The two councils had to work closely with high-level agreement to develop the appropriate contractual arrangements and manage risks associated with employing a common shared resource.

Outcomes: This program, which is the first of its kind in Queensland, allowed for significant savings and other efficiencies for participating councils. Savings in transition costs were significant (25% savings on legal, and 50% saving on planning). By switching to internal management models together, Mackay and Whitsunday Regional Councils were able to generate a formal and on-going staff sharing arrangement that has enabled sharing of resources for activities such as technical troubleshooting and planning as well as building efficiencies through joint improvements in operations and maintenance.

Maturity: Collaboration on this complex and expensive process involving third-party contracts affecting future capital and operating expenditure was unique and assessed to as promoting a high degree of maturity reflecting this region's position at level 7.

RAPAD Water and Sewerage Alliance



The Regional Area Planning and Development Water and Sewerage Alliance (RAPADWSA), encompasses a large and remote area of central western Queensland. The RAPADWSA includes Barcoo, Barcaldine, Blackall-Tambo, Boulia, Diamantina, Longreach and Winton spread across roughly 400,000 km^2. Despite the vast distances between communities, the region has undertaken a range of collaborative programs since 2011. RAPADWSA is well known for their collaborative approach to uncover economies of scale for their 10,700 residents. Some parts of the region struggle with population decline and large seasonal tourist influxes challenging already stretched resources. The progression of projects over the prior year show what is possible in a remote region even with access to limited funds.

RAPAD Water Alliance: Regional review of telemetry and SCADA systems

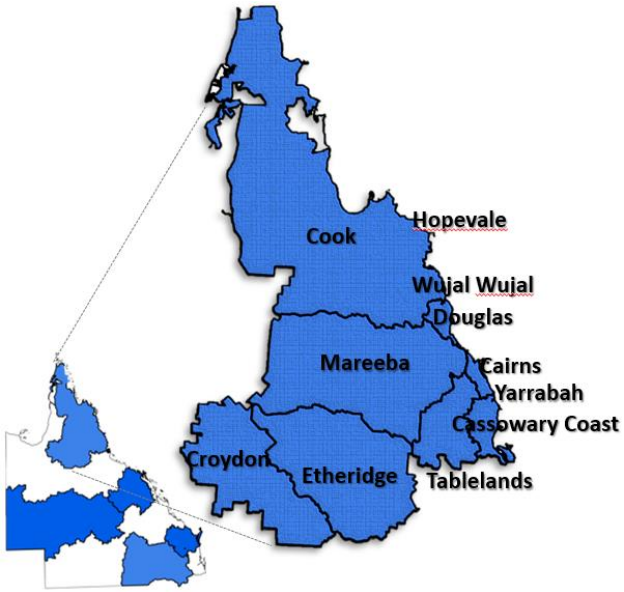
Description: Telemetry systems for Supervisory Control and Data Acquisition (SCADA) are used by utilities world-wide to remotely monitor and control plant and equipment on a 24 hr basis. This common but constantly evolving technology requires regular review and updates and the RAPAD Water Alliance collaborated on a joint program to assess all of the SCADA systems across their region. The project was staged so that it could to build on cross-regional learnings from related SCADA work being undertaken in the WBBROC and DASB regions.

Importance: A functional SCADA systems is essential to the safety and security of modern water supplies and maintaining sanitation and environmental protection of sewerage schemes. In a region as remote as RAPAD, councils place increased reliance on their SCADA systems to manage their widely-dispersed infrastructure with staff often spread across multiple locations. These issues are exacerbated by the distance to skilled technicians and contractors that can maintain and upgrade the electronics and software inherent to modern SCADA. Strategic focus on SCADA (at regional scale) provided insights into the CAPEX needs of all councils for the next 20 years allowing less reactive replacement in future.

Outcomes: The RAPAD Alliance (at both technical and strategic levels) identified SCADA planning as a priority and cooperated for savings through economies of scale and potential future alignment of technologies across the region. The review revealed that some of the RAPAD systems were in need of change and that recent changes to industry standards would render other systems inoperable within three years. The joint project not only saved funding on joint procurement but also averted increasing risk by identifying future SCADA control short-falls in some communities providing invaluable customer benefits.

Maturity: The project aligns with the region's level 6 maturity requiring significant coordination and regional leadership but being largely operational in nature.

FNQROC



The FNQROC region includes 13 councils, servicing 50 communities, including some of the smallest and largest council areas in regional Queensland. These include coastal areas spanning 1,235 km of coastline as well as remote and arid inland areas. The region has a population of 250,000. This diversity sets the region apart from all other QWRAP regions.

The FNQROC group has long be known for joint procurement processes and has developed their capacity for water and sewerage projects in recent years through joint contracting for biosolids management. They are currently investigating opportunities for joint sewer relining among member councils. Some of the councils are also participating in jointly developed training programs including the Water Industry Worker training developed by the WIM Alliance.

FNQROC: Regional Drinking Water Quality Symposium and Workshop

Description: A regional drinking water quality symposium on water quality issues in the region.

Importance: The FNQROC region has a variety of drinking water quality challenges with the added impact of tropical rainfall which can affect surface water supplies. This is the first time the councils have collaborated at a regional scale on water quality issues.

Outcomes: Shared knowledge of key water quality risks and common local issues to direct focus on customer safety and reliable quality. The workshop included hearing from state and national experts and regulators that attended the meetings.

Maturity: Joint knowledge-sharing involving regulators is an example of level 4 maturity.

FNQROC: Change of Status

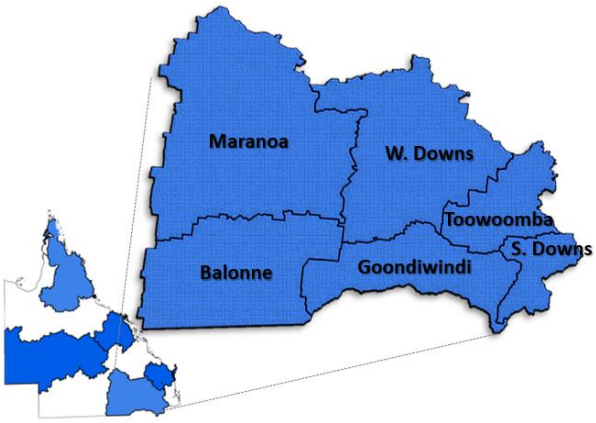
Description: In 2019 FNQROC elected to change their participation in QWRAP in line with the clear priorities of the FNQROC Board and forego funding for a regional coordinator but continue to work on technical water and sewerage group.

Importance: This represents a different approach in terms of future collaboration driven by the challenge of the large number and diversity of councils in the region.

Outcomes: The FNQROC Board will continue to be informed of opportunities and issues and maintain an ongoing relationship with QWRAP. The group will retain access to bid pool funding with all projects assessed based on their specific contribution to regional maturity. They will also continue to participate in communication activities and forums.

Maturity: Although the FNQROC region considered alternative regional models the decision to pursue only technical collaboration on an occasional basis reflects level 4 collaboration maturity.

DASB Region



The Downs and Surat Basin (DASB) region encompasses Balonne, Goondiwindi, Maranoa, Southern Downs, Toowoomba and Western Downs Councils with over 260,000 people. As one of the more recent QWRAP regions, DASB councils are still considering the governance review that is a prerequisite for accessing QWRAP funding. Three of the five councils have agreed in-principle to proceed with recommendations from the review to date. Parts of the region are currently facing significant challenges from drought conditions and other councils and state government have sought to assist through QWRAP initiatives and joint investment in public 'water conservation' communications.

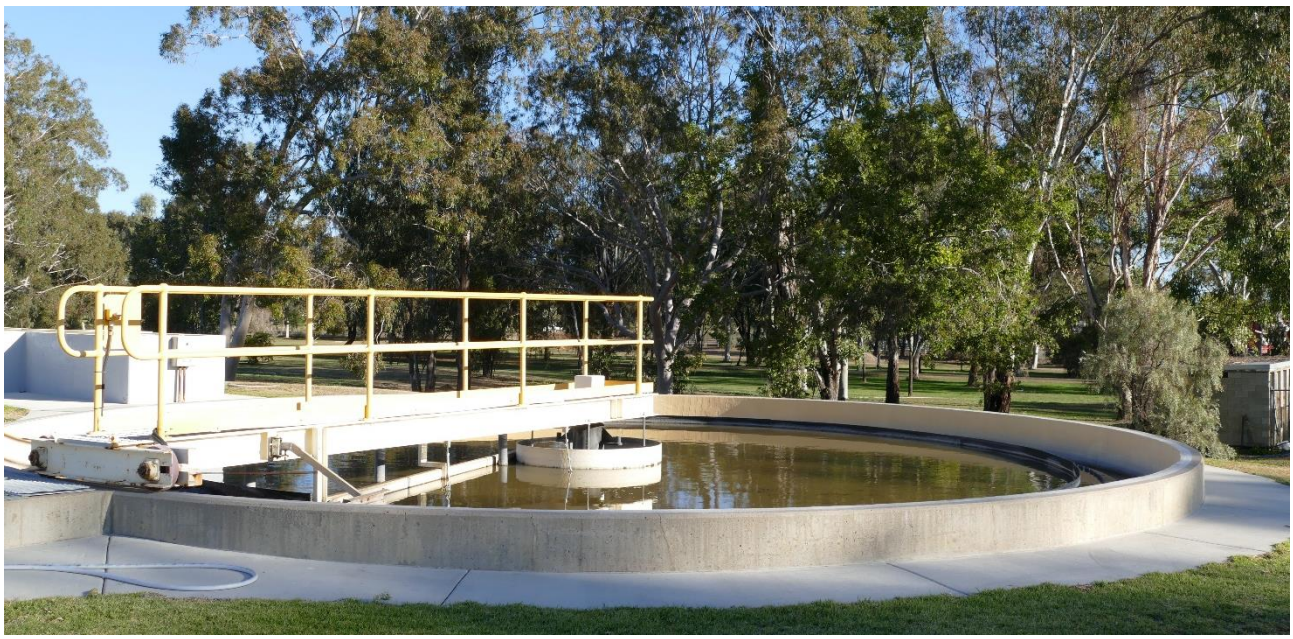
DASB Region: Completed governance review

Description: One of the key requirements of becoming a QWRAP pilot region (level 5) and accessing priority funding is to undertake a review of at least three alternative institutional arrangements for management of water and sewerage services across the region. As the most recent addition to QWRAP DASB undertook its assessment in 2018/19.

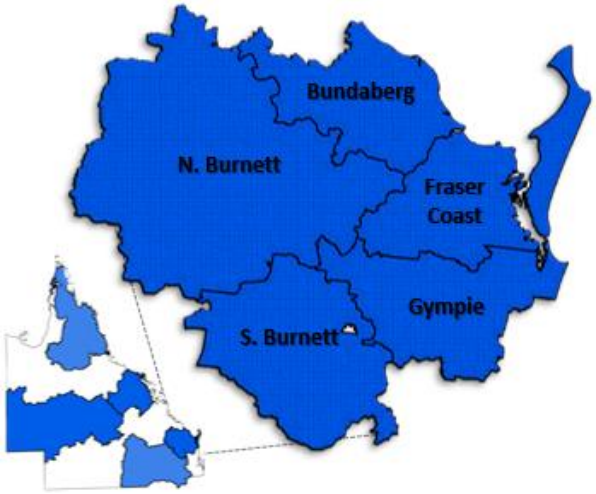
Importance: QWRAP seeks to lead councils beyond cooperation on operational and joint procurement activities to build new regional arrangements that will make their services more sustainable. Significant funding is only available to groups that agree to move to level 5 and undertake such a review.

Outcomes: The governance reviews are a detailed analysis managed by the councils themselves with costs and benefits examined for each of the options considered. The governance review for DASB recommended formation of a Water Alliance which has been endorsed by four of the six councils. It is still under consideration by two of the DASB councils.

Maturity: Undertaking the review of alternative institutional arrangements defines level 5.



WBBROC Water Alliance



The Wide Bay and Burnett Regional Organisation of Councils Water Alliance comprises six members; North Burnett, Bundaberg, Gympie, South Burnett and Fraser Coast and Cherbourg Aboriginal Councils. Smallest in terms of area but largest in terms of population, the WBBROC region serves 292,000 people. The region has a history of championing new collaborative opportunities and was one of the original three QWRAP regions that reviewed institutional arrangements in 2013. The region has strong growth and a demonstrated interest in strategic development particularly focusing on efficiencies and water supply security to underpin regional development.

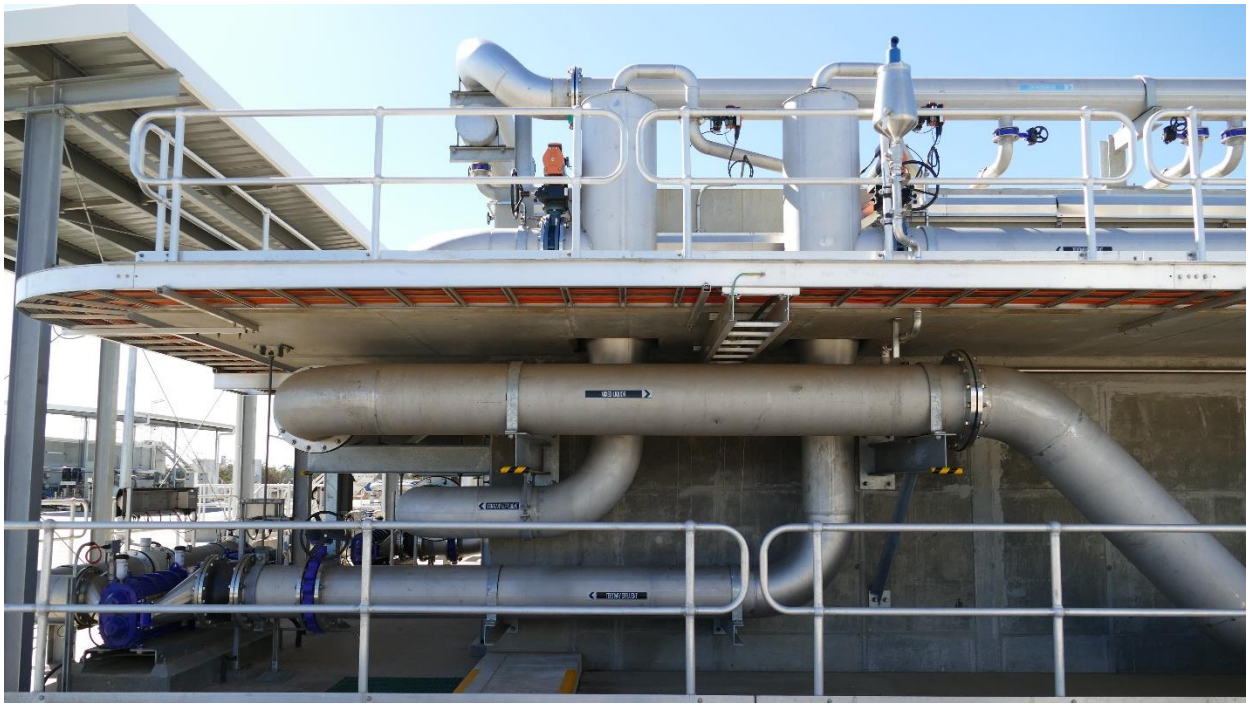
WBBROC Water Alliance: Strategic Planning Project

Description: Development of a strategic plan to identify and prioritise options for collaboration between the region's councils.

Importance: Only one other region (RAPADSWA) has developed a strategic plan to provide overarching direction for ongoing collaboration. The activity is conceptually and logistically difficult to complete requiring endorsement from all participating councils.

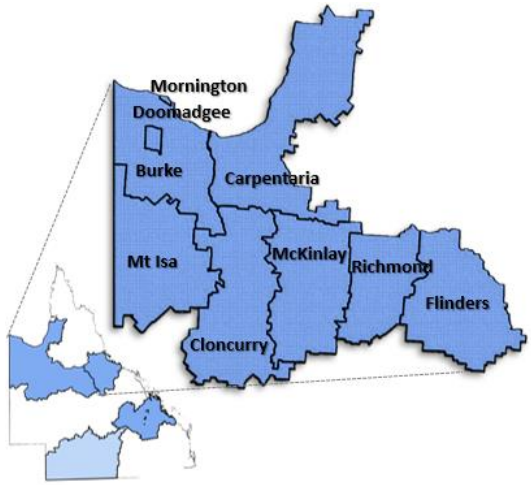
Outcomes: A series of workshops were conducted to identify regional efficiencies and productivity improvements and develop strategic road map for future regional QWRAP institutional arrangements. The group were able to scope and develop a regional strategic plan for water and sewerage services resulting in a high-level road map for endorsement by councils. This document is now being developed into a regional plan to enable regional resilience, alignment of service standards and identify strategic threats to business continuity.

Maturity: Strategic planning for an existing Water Alliance demonstrates maturity level 6.



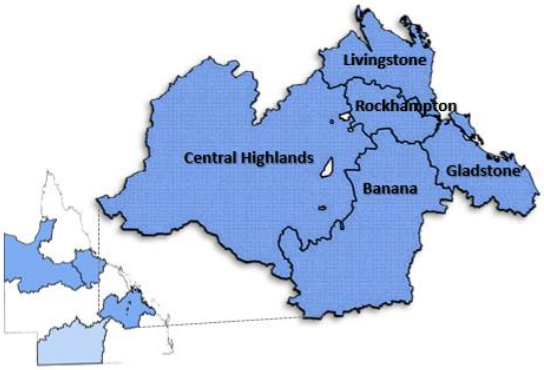
Emerging Regions: Increasing Collaboration

Council collectives outside of the five funded QWRAP regions have been discussing regional collaboration on water and sewerage. Some have elected to undertake cooperative projects.



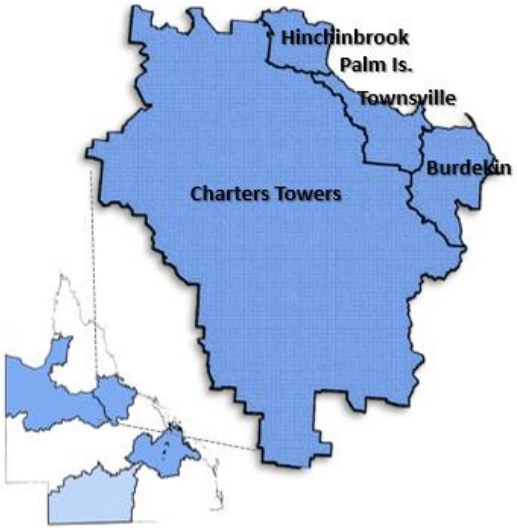
North West Queensland ROC

The councils of the NWQROC (Doomadgee, Burke, Carpentaria, Mt Isa, Cloncurry, McKinlay, Richmond and Flinders councils) had their first discussions about potential water and sewerage collaboration at the ***qldwater*** regional conference in Cloncurry in 2018. Since that time the ROC has been briefed on QWRAP and a regional technical group has discussed potential regional projects. Initial interest centered on building regional skills, access to resources to assist remote communities, sharing skills where they are complementary, joint procurement and use of technology such as automatic meter reading. Progress was halted by flooding and elections but will be revisited in the coming year.



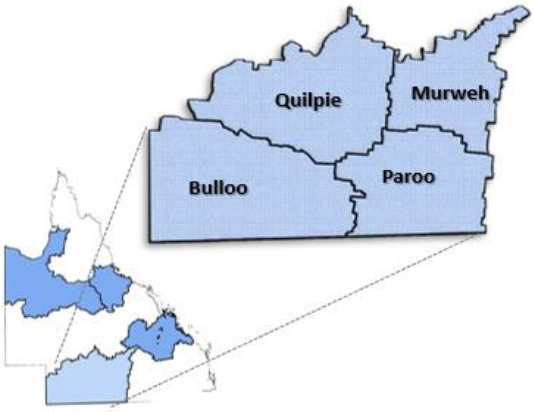
Central Queensland

The Central Queensland Water and Sewerage Technical Group has held a number of meetings since first forming in 2017. The group includes representatives from Central Highlands, Rockhampton, Livingstone, Banana and Gladstone councils. The group has also included Woorabinda Regional Council in some meetings. No projects have been commenced by the group to date, with activity primarily focused on information sharing.



North Queensland ROC

This group includes Hinchinbrook, Charters Towers, Palm Island, Townsville and Burdekin. To date the group has primarily engaged in sharing information and joint meetings with regulators but has also discussed opportunities for collaborative projects including sewer relining, water security and environmental management. Joint projects on operator training (Townsville and Burdekin) and sewer rehabilitation (Burdekin and Hinchinbrook) are underway and are providing savings for participating councils. Full regional collaboration was been hampered this year through diversion of resources to severe drought and flooding. This region's collaborative maturity is assessed as level 3. The region has been invited to form a QWRAP Pilot Region (level 4) to take advantage of the Regional Coordinator Funding relinquished by the FNQROC group.



South West Regional Economic Development

The South West Regional Economic Development group is comprised of four non-QWRAP councils (Quilpie, Murweh, Paroo, Bulloo) as well as Maranoa and Balonne which participate in the DASB region. The group represents some of the smallest remote water service providers. A QWRAP briefing was given to the CEO and Mayors' quarterly meeting in 2019 after the region started to discuss collaboration during the ***qldwater*** technical tour. No projects have been commenced as yet but a follow-up program is planned by DNRME and ***qldwater*** in 2019 (see 'What's coming').

QWRAP Research

The research budget for QWRAP in the 2018/19 period was directed to two new projects. The first undertook an extensive survey of Queensland councils to better understand asset management practices across water and sewerage infrastructure. The survey was conducted by experts in the field of asset management and was supported by the LGAQ. The survey received a strong response from a majority of regional councils, resulting in a high participation rate. The analysis of the results will be finalised by the end of 2019.

The second research project seeks to better understand the value of water and sewerage services to regional economies through engagement with an economic specialist in the sector. This research, which will examine both the tangible and intangible value of the services to the community is expected to be completed in 2020.

This year also saw the finalisation of the research on the ageing of network assets. QWRAP Research Report 5.2, which modelled the tradeoffs in timing funding for repair and replacement of water and sewer pipes. This report attracted significant attention within the industry and from industry stakeholders. Feedback from key stakeholders has led to a revision of the report involving significant restructuring and rationalisation, with the revised report being re-issued in August 2019 along with flyers to promote the key messages.

What's coming in 2019-2020?

The four continuing regions have agreed annual workplans for the 2019-2020. These include ongoing and new activities as shown below.

RAPAD Water Alliance

- New: Joint procurement for replacement of water mains (building on successful sewer relining projects and addressing water security and infrastructure renewals).
- New: Project to cooperatively remedy telemetry and SCADA issues identified in the analysis undertaken in 2018-19.
- Ongoing: Joint procurement of services to ensure drinking water quality (including mains cleaning, reservoir inspection and repair).
- New: Review and regional development of Asset Management processes to inform strategic infrastructure investment.

WBBROC Water Alliance

- New: Commence regional strategic benchmarking to set targets for key metrics to align with regional water strategy and measure regional performance over a 5-year timeframe.
- New: Develop a WBBROC node for the successful Water Industry Worker program being rolled out by the WIM Alliance.
- New: Develop a program to encourage graduate engineers to the Wide Bay Region through internships, cadetships and undergraduate work placements.

WIM Water Alliance

- New: Support collaborative research by CQU into development of a nitrogen sensor for use in receiving waters to reduce sampling and laboratory costs and provide early warning of nitrogen discharges.
- New: Develop a risk/cost priority framework for condition assessment and a template for capturing data to review asset useful lives across the three entities through the same lens of condition assessment, asset criticality and risk.
- New: Establish a common WIM Register of Documents including technical catalogues, technical specifications and contract documentation.

DASB Region

- New: Establishment of regional sewer relining project following successful completion of joint procurement and contracting documentation.
- New: Regional operators forum bringing together operators and water industry workers from across the region to share knowledge and build regional networks.
- New: Skills gap analysis and coordinated regional specialised training focusing on identified modules/process needs, possibly leading to the establishment of a regional resource pool.

Non-QWRAP or Emerging Regions

QWRAP also has a focus on building capacity in emerging or non-QWRAP regions. Work in other regions will include ongoing technical meetings in the CQ and NWQ regions, and the establishment of a new QWRAP pilot region with the NQROC.

Non-QWRAP region focus has included four SWRED Councils. These councils have expressed interest in collaboration on water and sewerage services but are yet to develop a process to enable such cooperation. This region has a strong regional drive for development and self-sustainability. Work in the region will include convening a technical forum, further briefings of the SWRED Board and roll out of a water treatment technology trial seeking to treat hot and aggressive bore water common to the region and many western councils.

State-wide Activities: Benefits Realisation

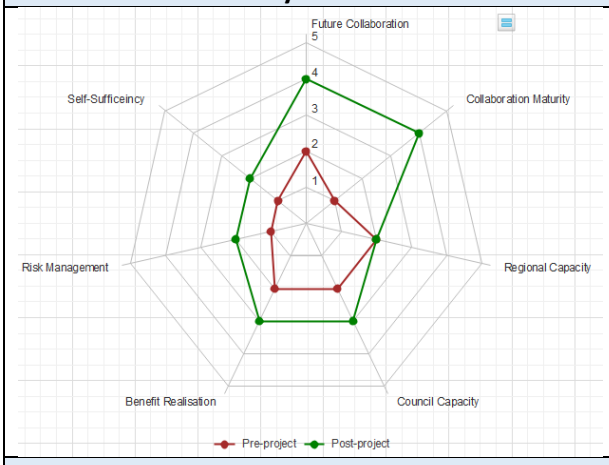
QWRAP is also a mechanism for the State to drive change in the industry to support sustainable service delivery. Through its involvement with QWRAP, the State can better understand how to ensure that statewide activities have relevance, support fit for place solutions, and are implementable. This is an important contribution to Queensland water and sewerage State policy.

A review of QWRAP benefits is underway that will look to quantify the benefits of QWRAP project outcomes and determine the overall advantages of collaboration on water and sewerage services to the individual Council and region. Using a Benefits Realisation approach, this review will help identify improvements and enhancements necessary to strengthen the program and influence the strategic direction of QWRAP to deliver continued change for a sustainable water industry. The Department of Natural Resources, Mines and Energy (DNRME) is undertaking this work.

Part of this benefits realisation activity is to develop methods for summarising the benefits arising from QWRAP projects and activities. ***qldwater*** is working with DNRME to assess project benefits. An example of a possible Project Profile in a report card format is shown below using the RAPAD SCADA review project as a case study.

Project Benefit Profile: RAPAD SCADA Review (Example)

Before-and-after analysis



What are the intangible benefits of collaboration on this specific issue and how have they changed the region?

Value analysis

What is the order-of-magnitude value of all recognised benefits?

[Valuation presentation methodology to be completed- see Attachment 1].

Benefits Achieved or highly likely to be achieved (see Attachment 1)	Category
• Direct cost savings from joint procurement of consultant as well as greater access to contractor pool allowing more certain contracting arrangements (managed by regional coordinator). • Strategic focus on SCADA (at regional scale) provided insights into the CAPEX needs of all councils for the next 20 years allowing less reactive replacement in future. • Gap analysis of significant local deficits and recommendations for remediation resulting in further works with potential joint procurement savings.	**Operational benefits**
• Customer and environmental safety improvements because SCADA is an essential control for water and sewerage schemes and services including safety and security. • Identification of urgent telemetry and SCADA system issues and possible solutions/upgrades needed in time to be remedied. • Council in-kind contributions reflect significant value perceived by participating councils. • Cybersecurity risks considered as part of review increasing customer safety and security. • Fewer break-downs and time-out will result in fewer customer complaints.	**Ongoing community benefits**
• Encouraging regional independence and ability to be reactive to customer needs, safety and water security. • More flexible and reactive environmental control and monitoring to ensure sustainability. • Greater certainty for water quality and water security and moves towards best practice. • The joint approach reflects regional maturity and a more sustainable approach to ongoing management of critical systems.	**Water and sewerage services sustainability**
• Interaction with contractors resulting in increased capacity and understanding within the region. • Environmental monitoring and control increasingly automated to avoid spills and reportable incidents. • Relationship developed with respected private sector expertise.	**Social and Environment (TOMS)**

Other Intangible Benefits

- Councils exposed to new technology and standards.
- Management and eventual replacement of ageing infrastructure considered in light of limited rates base.
- Information shared with other QWRAP groups, particularly the DASB group which is undertaking a strategic SCADA review.
- Participation provides a way to ensure self-determination by RAPAD local governments.
- Cooperative approach gives councils to build on regional strengths and capacity of regional coordinator.
- Improved information and focus on regional benchmarking and performance reporting.
- Project may allow the region to better leverage further investment into fit-for-purpose technologies.
- The leadership and experience built through the project can influence and be translated to other areas of Queensland that lack local capacity.

Attachment 1: Benefit Assessment Methodology

Assessment of QWRAP projects requires estimation of tangible and intangible benefits that can be realised immediately, in the future or on an ongoing basis. To provide information on these different elements QWRAP assessment is divided into two components.

Component 1: Material benefits
Analysis of outputs and outcomes of a project across four Benefit Categories. The categories reflect needs of stakeholders and the sector identified from multiple sources and are summarised as:

1. **Operational benefits**: savings and cost reduction arising from the project,
2. **Community benefits**: outcomes for customers and communities,
3. **Benefits supporting water sector sustainability**: outcomes that strengthen the Queensland sector,
4. **Social and Environmental benefits**: community outcomes summarised in the UK TOMS framework.

Categories	Types of Benefits	References/measures
1 **Operational benefits**	• cost saving (OPEX, CAPEX or procurement), • improved 3rd party service delivery, • contractual streamlining and strengthening (e.g. specifications) • uniformity and alignment for future cost reduction	DNRME Draft Benefits Realisation document
2 **Ongoing community benefits**	• Customer service or affordability improvements • Improved safety or security • Staff skills, wellbeing, health and safety • Council reputation improved or protected	Council and Utility objectives
3 **Benefits to support water and sewerage service sustainability**	• Regional resilience and sustainability • Improved regulatory compliance • Asset Management and optimisation of capital investment • Enhanced regional planning	QG priorities, areas of concern in national reviews
4 **Social and Environmental benefits (TOMS)**	• Local employment including youth and disadvantaged, • Regional economic growth, • Healthier, safer and more resilient communities • Environmental benefits	UK National 'Themes, Outcomes and Measures' (TOMS) framework

Component 1a: Likelihood
Each benefit is scored in terms of how likely it is to be realised (Box 1).

Box 1. Scoring schema for likelihood of material benefits.

1. **Possible but unlikely** future outcome/benefit (or will be realised in more than 10 years).
2. A **possible** outcome/benefit in the next 5 – 10 years.
3. Outcome/benefit is **highly likely** to be accrued in the next 5 years.
4. Outcome/benefit is **certain** but has not yet been accrued.
5. Benefit has **already accrued**.

Component 1b: Financial Value

Where possible the value of savings derived from a project or activity is recorded or estimated, this can be difficult for less tangible outcomes. To facilitate comparison a transparent methodology is used to estimate approximate (order-of-magnitude) value across each category of material benefit (e.g. ongoing community benefits). The method is further illustrated in Box 2 below. This method will be trialed using input from PSC partners as well as QWRAP regions.

Box 2. Suggested estimation approach for valuing material benefits**

Only benefits with a likelihood score of 3-5 in each category are to be included. Three assessors (e.g. from the regions/ QWRAP/ LGAQ/ DNRME/ qldwater) are required to independently score each category. The individual assessments will be provided for transparency with the aggregated n average score for each category will be reported in project profile. The value estimated for each successive category of Material Benefit must exclude any values estimated in prior categories using the following schema.

A. Up to $10,000.
B. > $10,000 - $100,000.
C. > $100,000 – $1,000,000.
D. > $1 million - $10 million.
E. > $10 million.

Example of estimation approach for one benefit category.

	Estimated Value			
Assessor	LGAQ	Region	DNRME	Average
Score	C	B	D	C
E ->$10mill				
D -$1-$10mill			$$	
C -$100k -$1mill	$$		$$	$$
B -$10k-$100k	$$	$$	$$	$$
A -$1-$10k	$$	$$	$$	$$

** this analysis has not been trialled to date and will be tested in the coming year.

Component 2: Comparative and Intangible Benefits

As well as immediate benefits, QWRAP projects and activities can enable further future opportunities that may not have otherwise been possible. For example, a SCADA review project can identify ways to increase regional uniformity in telemetry, thereby enabling future collaborative projects using these technologies. QWRAP projects can make contributions to risk management, regional capacity, improved services through collaboration, individual council capacity, and/or regional self-sufficiency.

These benefits might not be financially quantifiable, yet are important for long term improvement. A scoring system is presented below that can be used to analyse comparative and intangible benefits with respect to a specific issue(s) addressed by a project or initiative:

- **Risk Management:** level of risk management in place for the issue(s)
- **Benefit Realisation:** likelihood that benefits will be realised
- **Future collaboration:** likelihood of future collaboration on the issue (s)
- **Maturity of Collaboration:** maturity level of collaboration on the issue before and after the work
- **Regional Capacity:** capacity/likelihood for the region to address the issue(s)
- **Council Capacity:** capacity/likelihood for individual councils to address the issue(s)
- **Self-sufficiency:** regional ability and resilience in addressing similar issues.

Each element can be scored using the schema shown in Box 3.

Box 3. Scoring schema for comparative and intangible benefits

Each benefit is scored with respect to the project/activity being assessed on a five-point scale with a rating of '3' indicating a 'sufficient' or average level of achievement.

	1	2	3	4	5
Risk Management	Unknown but potential risk	Known risk but not well managed	Ongoing risk management	Risks reduced through project activities	Risk entirely removed or avoided
Benefit Realisation	No benefits would be realised	Some benefits might be achieved	Partial benefit realisation	Significant benefit realisation.	Benefits fully achieved
Future Collaboration	Unlikely to collaborate in this area (w/out QWRAP)	Possible but rare or unlikely (w/out QWRAP)	Moderate likelihood of future collaboration	High likelihood of collaboration	Collaboration already commenced
Maturity of Collaboration	Little or no collaboration in project area (level 1)	Initial planning or joint activities (level 2-3)	Collaboration occurring (level 4)	High degree of cooperation (level 5-6)	Very high collaboration maturity (level 7-8)
Regional Capacity	Little capacity in project area	Capacity lower than other regions	Capacity similar to that of other regions	Above average capacity in project area	Region seen as leader in project area
Capacity of individual councils	Little capacity/ unlikely for most councils	Some councils could achieve benefits alone	Most councils positioned to achieve future benefits.	Most councils achieving ongoing benefits.	Each council has full capacity to achieve ongoing benefit
Regional self-sufficiency	Self-sufficiency is threatened because of the issue	Self-sufficiency possible in parts of the region	Region is self-sufficient with respect to the issue	Resilience is greater than other regions.	The region is a leader on this issue.

A project profile or report card for projects can be expressed through undertaking an assessment using the Material Benefits, Intangible and Comparative components (detailed previously). The following is an example of the analysis of one of the 2018/19 projects with a preliminary 'report card' summary provided in the annual report.

Project: RAPAD SCADA Review

	Benefits	L*	Estimated Financial Benefit
1. Operational	Direct cost savings from joint procurement of consultant as well as greater access to contractor pool allowing more certain contracting arrangements (managed by regional coordinator).	**5**	*Total value of all 'Operational Benefits' with a likelihood score > 2 (see Box 2**).*
	Strategic focus on SCADA (at regional scale) provided insights into the CAPEX needs of all councils for the next 20 years allowing less reactive replacement in future.	**3**	
	Gap analysis of significant local deficits and recommendations for remediation resulting in further works with potential joint procurement savings.	**5**	
	Joint SCADA design to promote common systems, spares and skills in future installations and facilitate local employment.	**2**	

2. Community	**Customer and environmental safety improvements because SCADA is an essential control for water and sewerage schemes and services including safety and security.**	3	***Total value of all 'Community Benefits' with a likelihood score > 2. Only the value additional to that estimated above to be included (see Box 2**).***
	Identification of urgent telemetry and SCADA system issues and possible solutions/upgrades needed in time to be remedied.	**5**	
	Council in-kind contributions reflect significant value perceived by participating councils.	**5**	
	Cybersecurity risks considered as part of review increasing customer safety and security.	**5**	
	Fewer break-downs and time-out will result in fewer customer complaints.	**3**	
3. Sector	Encouraging regional independence and ability to be reactive to customer needs, safety and water security.	**3**	*Total value of all 'Sector Benefits' with a likelihood score > 2. Only the value additional to that estimated above to be included (see Box 2**).*
	More flexible and reactive environmental control and monitoring to ensure sustainability.	**3**	
	Towards better control reducing the risk of regulatory intervention or reputational damage.	**2**	
	Regional planning facilitated through common systems, procedures and infrastructure classes.	**2**	
	Greater certainty for water quality and water security and moves towards best practice.	**3**	
	The joint approach reflects regional maturity and a more sustainable approach to ongoing management of critical systems.	**4**	
4. TOMS	Interaction with contractors resulting in increased capacity and understanding within the region.	**5**	*Total value of all 'TOMS Benefits' with a likelihood score > 2. Only the value additional to that estimated above to be included (see Box 2**).*
	Environmental monitoring and control increasingly automated to avoid spills and reportable incidents.	**3**	
	Relationship developed with respected private sector expertise.	**5**	
	Regional approach contributes to the perception of safe, secure, and sustainable services, which is more likely to attract economic development and greater investment to the area.	**2**	

*L **1.** Possible but unlikely (>10 yr) **2.** Possible or 5 – 10 yr **3.** highly likely within 5 yr **4.** certain **5.** already accruing

** this analysis has not been trialled to date and will be tested in the coming year.

Scoring of comparative benefits (before and after the RAPAD SCADA review project) with respect to the specific issue(s) addressed in the work:

	Pre	Post
Risk Management	1	2
Benefit Realisation	2	3
Future collaboration	2	4
Maturity of collaboration	1	4
Regional capacity	2	2
Council capacity	2	3
Self-sufficiency	1	2