QWRAP ANNUAL PROGRESS REPORT 2021

Councils currently participating in QWRAP:



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The Queensland Regional Water Alliances Program (QWRAP)

QWRAP is an industry-led initiative to investigate regional collaboration on water and sewerage services in regional Queensland. The program is a collaboration among the LGAQ, ***qldwater***, the Queensland Government (through the Department of Regional Development Manufacturing and Water) with nearly 60 councils engaged across several regions. During 2020/21 participating regions consisted of the five existing prior to the current QWRAP round, namely the:

- Far North Queensland Regional Organisation of Councils (FNQROC),
- Remote Area Planning and Development Water & Sewage Alliance (RAPADWSA),
- Wide Bay Burnett Urban Water Alliance (WBBUWA),
- Downs and Surat Basin (DASB) and
- Whitsundays, Isaac and Mackay (WIM) Water Alliance

along with the recently joined:

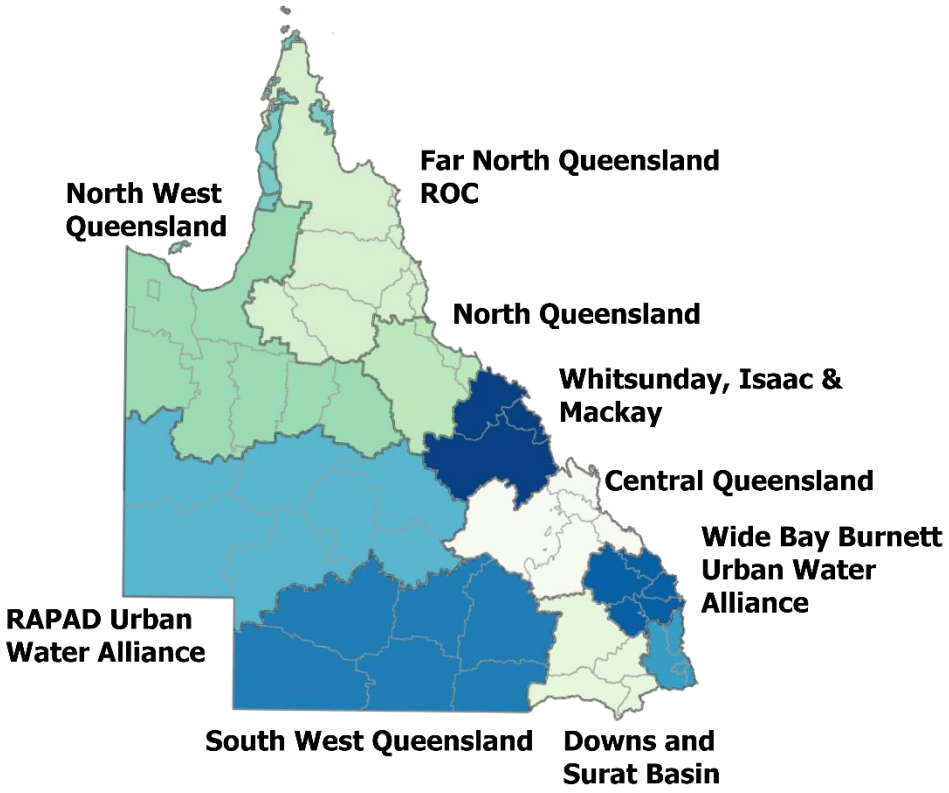
- Southwest Queensland Water and Sewerage Alliance (SWQWSA).

Two additional regions are considering participation and currently receive seed funding for trial projects, namely the:

- North Queensland ROC (NQROC) and
- Northwest Queensland ROC (NWQROC).

QWRAP has been funded by the Department (formerly Natural Resources, Mines and Energy) since 2011 with significant leverage of cash and in-kind contributions from other partners. QWRAP works to strengthen urban water and sewerage (W&S) services in Queensland's regional communities through collaboration. The aim is to ensure safe, secure and sustainable services for the more than 300 water schemes outside of South East Queensland, which include 25 councils that own and manage some of the smallest water schemes in Australia. Eight regions currently collaborate thanks to QWRAP either as a Water Alliance (RAPADWSA, WIMWA, WBBUWA, SWQWSA), technical group (FNQROC and DASB) or with funded trial projects (NQROC and NWQROC). In May, the Central Queensland ROC (CQROC) met to decide on their future participation in the program. This expands coverage of QWRAP to all of Queensland council areas outside of the Cape York first nations councils and South East Queensland.

QWRAP provides a formal opportunity for councils to consider and test collaboration and alternative regional arrangements for managing essential W&S services. Regions involved in the program have matured in the degree of collaboration over the course of the Program and further development is encouraged through competitive funding for projects that build future collaboration. The Program has evolved over time and includes information sharing, joint projects and common planning and strategic activities.



Why regionalisation?

QWRAP encourages regionalisation of W&S services because this approach has been proven repeatedly to be a sustainable model to support all communities through addressing service priorities and building collective capacity and capability. Multiple national reviews have urged regionalisation of Queensland utilities to strengthen economies of scale, improve strategic planning and investment and encourage competition by comparison. Most recently, in February 2021, the National Productivity Commission recommended development of new "agreed principles for governance of regional and remote water services where councils retain ownership of utilities".

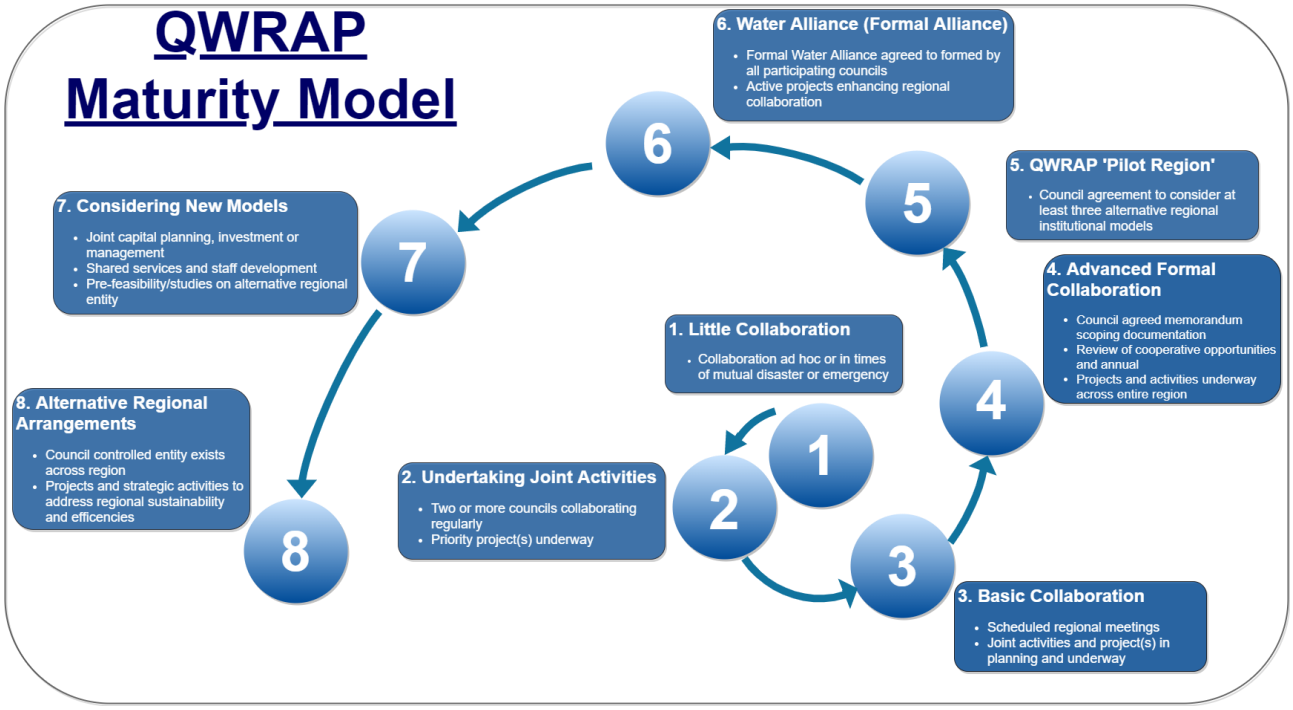
Although regional councils often cooperate on common issues, W&S collaboration at a regional scale was rare prior to QWRAP commencing in 2011. Thanks to the program, seven regions including over 250 communities are working on joint regional projects, five have considered alternative institutional models and three have developed formal Water Alliances. While funding has been focused on the five initial QWRAP regions, 'emerging regions' have received support to commence negotiations about collaboration and develop trial regional projects. Regional maturity has grown with the support of State investment in QWRAP which has leveraged significant further contributions, encouraging collaboration even when it entails developing additional regional trust and time-consuming cooperation.

Regionalisation of water and sewerage services has proven to be a controversial issue in many jurisdictions across Australia and overseas. Councils can be wary of any form of amalgamation and communities are protective of water supplies and are often concerned about possible privatisation of essential services. The Queensland Government has entrusted W&S services to councils and provides support through QWRAP and direct funding for indigenous councils for Water and Sewerage through other departmental programs.

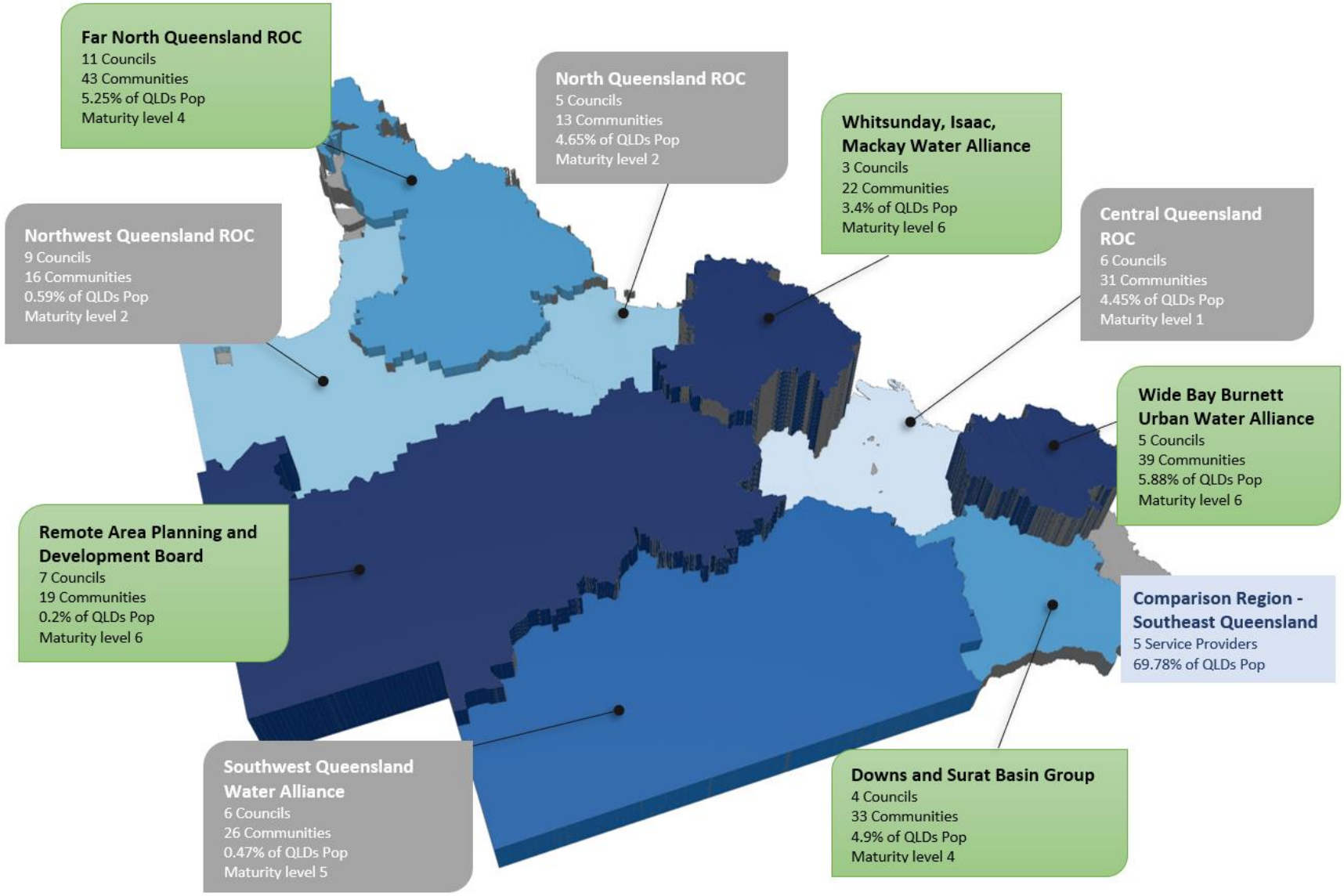
There are also multiple grant programs that are sometimes accessed for building water and sewerage infrastructure. Uncoordinated support coupled with strained capacity and capability of many councils means that collaboration and regionalisation can be difficult but equally, are an essential for a sustainable W&S sector. This collaboration is possible only through a strongly supported program, like QWRAP, which involves State and Councils and centralised support from LGAQ and ***qldwater***.

Regional Progress

QWRAP is a voluntary program with two requirements for participation – that groups of councils must consider alternative institutional models and seek collaboration opportunities that promote ongoing regionalisation. Acknowledging the necessity of a staged approach, the QWRAP 'Maturity Model' outlines typical stages in the development of regional models and directs funding to projects that demonstrate progression through the stages. QWRAP has shown that collaboration at all stages of regional maturity successfully yields financial and other community benefits, but maximum savings and eventual sustainability require high levels of maturity dealing that deal with the greatest cost-drivers for W & S services. Such projects also require the greatest levels of regional trust, strategic planning and risk management.



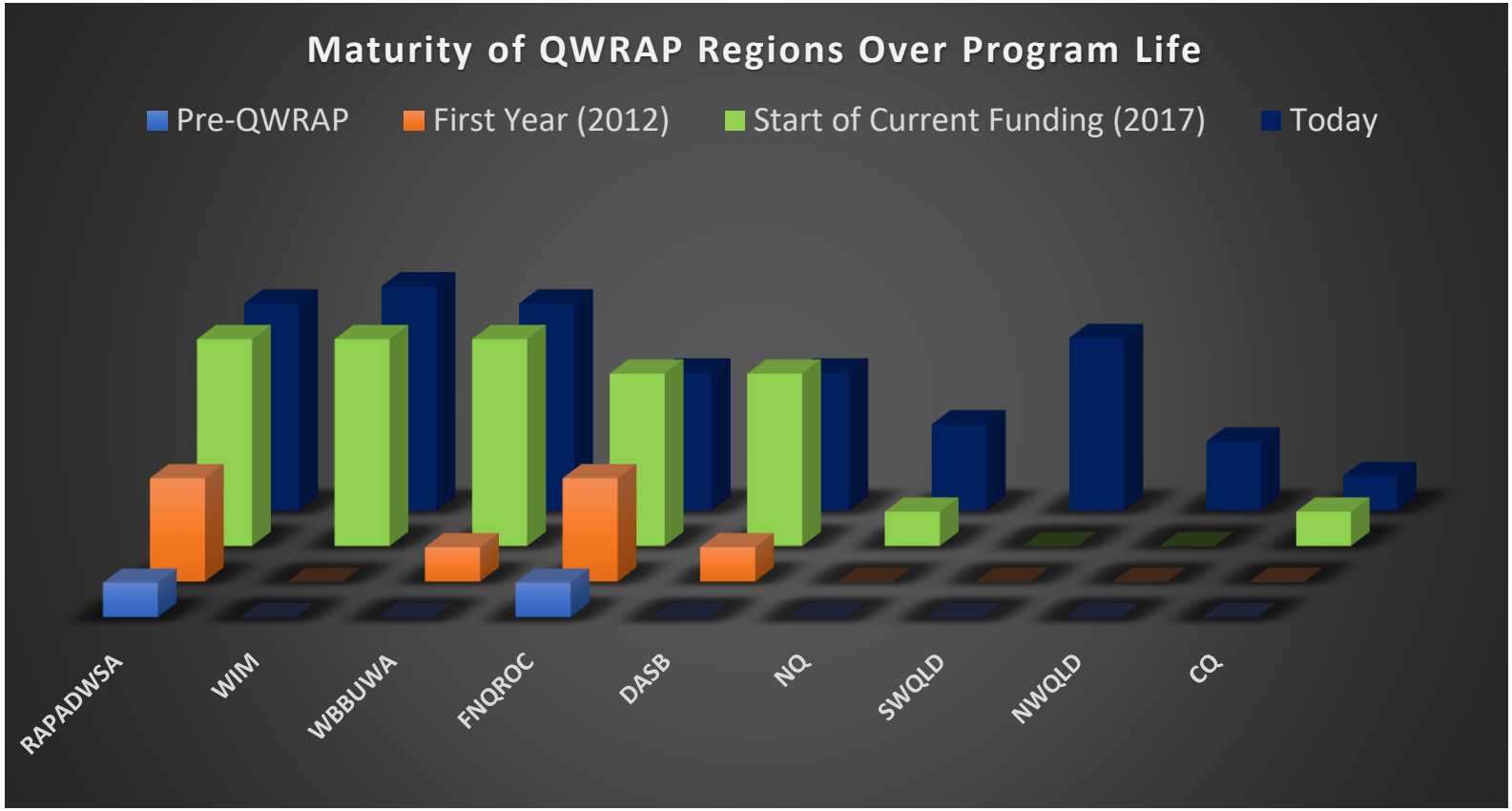
In most Queensland regions, collaboration on urban W & S has been rare with the notable exception of provision of assistance during natural disasters. QWRAP has allowed regional collaboration to be developed at a range of levels through targeted projects and activities identified by participating councils. In all regions, collaboration in decision making and planning on operational or process-related work addressing common W & S challenges helps build trust and understanding of shared interests. The returns from joint activities increase as risks are shared, driving greater financial and community benefit as more complex and strategic issues are explored. Progression to higher levels of maturity have been enhanced in the past three years with the increased support from RDMW since the 2018 funding round.


Far North Queensland ROC
11 Councils
43 Communities
5.25% of QLDs Pop
Maturity level 4
North Queensland ROC
5 Councils
13 Communities
4.65% of QLDs Pop
Maturity level 2
Whitsunday, Isaac, Mackay Water Alliance
3 Councils
22 Communities
3.4% of QLDs Pop
Maturity level 6
Central Queensland ROC
6 Councils
31 Communities
4.45% of QLDs Pop
Maturity level 1
Northwest Queensland ROC
9 Councils
16 Communities
0.59% of QLDs Pop
Maturity level 2
Wide Bay Burnett Urban Water Alliance
5 Councils
39 Communities
5.88% of QLDs Pop
Maturity level 6
Remote Area Planning and Development Board
7 Councils
19 Communities
0.2% of QLDs Pop
Maturity level 6
Comparison Region - Southeast Queensland
5 Service Providers
69.78% of QLDs Pop
Southwest Queensland Water Alliance
6 Councils
26 Communities
0.47% of QLDs Pop
Maturity level 5
Downs and Surat Basin Group
4 Councils
33 Communities
4.9% of QLDs Pop
Maturity level 4

Regional Water and Sewerage Collaboration Maturity in Queensland

QWRAP funding averaged $300,000 p.a. between 2011 and 2016 establishing three pilot regions. Funding doubled in 2016-2018 adding two regions and initiating 'emerging regions' with initial technical collaboration. In 2018, funding increased to $800,000 p.a. promoting mature projects and expansion to more regions. North Queensland and South-West Queensland were invited to become the sixth and seventh QWRAP regions.

Increased maturity results in larger projects, shared resources and investment and development of expertise. Skills development builds capacity and is common to many regions along with projects building operational efficiencies and standardisation. High-maturity regions explore joint infrastructure planning to support regional growth for years to come. These benefits would not be possible in most regions without QWRAP.



QWRAP Leads to Strategic Outcomes

All funded QWRAP regions undertake projects, but before a region can access significant funds, councils are required to review and consider at least three alternative institutional models for regionalisation. While joint projects establish the benefits of cooperation, the review of models stimulates discussion at political and technical levels about pathways for voluntary change. These discussions would not occur without the Program and the seed funding and support to overcome initial barriers to collaboration. Increasing voluntary collaboration maturity is inherently slow because it requires sustained cooperation, effort, political support and trust across multiple councils. Incentivisation through modest QWRAP funding is a proven method for accelerating progress through the maturity model and achieving strategic objectives at a regional scale.

All QWRAP projects to date have yielded financial benefits. Immediate benefits arise from economies of scale and savings from joint procurement and the strategic planning and contract oversight that comes with a regional approach. Many projects are technical or operational in nature seeking to improve the safety, security and sustainability of services supplied to communities. Some of these projects may have occurred without QWRAP but would be unlikely to extend beyond individual councils. Many projects would not have been possible without collaboration; either because of the additional scope generated or the greater focus on essential services generated by the Program.

A handful of projects have also driven strategic sustainability outcomes and led to enhanced future collaboration within a region or across multiple regions. These projects have increased in the current funding round with the increasing maturity of some regions, strong regional champions, and the additional focus that has been placed on strategic planning and benefits capture. The activities of QWRAP regions result in benefits for communities and essential services and contribute to broader strategic objectives at local, regional and state scales. However, they can also contribute to achieving other state-wide outcomes. Key examples include:

- extending successful, tested initiatives across multiple regions,
- developing systems and approaches that are adopted by other Queensland councils,
- driving momentum and interest in improvement and collaboration,
- bringing together experts from different fields including academia to deliver practical and technology-focused solutions to complex problems, and
- prioritising innovation to address complex challenges common to regional Queensland
- promoting research to better understand new and emerging challenges.

The program also provides benefits to other Regulators and agencies by streamlining communication and by encouraging competition by comparison within and among regions. QWRAP communication channels and rapid deployment of information, expertise and trusted advice have proven beneficial for policy and regulatory change, environmental stewardship and protection of the Great Barrier Reef. Established collaboration on emergent issues through the previous years of the Program also resulted in effective joint response to drought, flooding and COVID-19. These examples demonstrate how the QWRAP framework, acting both within and across regions, helps de-risk challenges faced by the urban W & S sector, supporting productivity and progress towards strategic goals in the face of constant change.

Year-in-review

The following table summarises the QWRAP regions work and lists initiatives underway or commenced during the year 2020-21. Projects with QWRAP funding are shaded blue.

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
FNQROC	Alignment of audits for Drinking Water Quality Management Plans	• Alignment of mandatory audit requirements for 12 FNQ councils • Improvement of DWQMPs and regulatory compliance for water quality • Increased safe supplies throughout a region with challenging water sources • Improved customer confidence in water quality and levels of service • Easing of council administrative and financial burden through single project manager • Joint learning from audit findings and common improvement programs with input from other regions prior to tendering	2019-21	Complete
	Training hub approach for operators from FNQROC and small satellite councils (Q5-58)	• Upskilling local operators through scale economies using a hub-training approach • Provision of training services that would not otherwise be accessible due to high cost/ remote location • Job security and regional skills development • Development of existing and new operators • Improved capacity/capability for maintaining health and water quality in Reef catchments • Greater networking collaboration among operators	2020-21	Complete
	Joint sewer rehabilitation in tropical Queensland (Q5-54)	• Joint relining of 33 km of sewers using integrated regional processes • Substantial financial and economic savings through joint procurement as well as reduced management and mobilisation costs • Improved quality of services provided because of single project manager, agreed process and greater market coverage • Labor cost saving estimated $160,000 and reduced burden for five councils • Reduced risk in uncontrolled releases of raw sewage to the environment	2019-21	Complete

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
RAPAD Water & Sewerage Alliance	Digital regional utility (planning and conceptual development - Phase 3 of previous Q5-45)	• Concept of standardised operations/operations centre for regional joint SCADA and Telemetry (CONOPS) • Cost savings on contracting and future systems development • Improved management of schemes including safety and security of supply • Risk reduction through maturity of collaboration • Improved regional and local capacity/self-sufficiency for seven participating councils • Regional framework for procurement for future SCADA systems	2019-22	Phase 2 Complete, Phase 3 Underway
	Sewage Treatment Plant regulatory requirements review and performance optimisation (Q5-48)	• Explore treatment technologies applicable to small remote sewerage schemes • Platform for discussions with Environmental Regulator to streamline Environmental Approvals (EAs) and ensure schemes provide appropriate environmental outcomes • Identify any future improvement needs for STPs to improve environmental stewardship and meet expectations of the community and regulators • Enhanced self-sufficiency in parts of the region and local capacity identified elsewhere	2019-22	Phase 2 Complete Phase 3 Underway
	Joint sewer relining	• Joint procurement savings and through deferring extensive renewals through planned relining and targeted replacement • Mitigation of risks from leaks, infiltration and overflows • Collaboration on an issue that threatens regional self-sufficiency • Enhances regional maturity in undertaking joint works • High quality works from management of a single contractor for whole region	2020-21	Completed
	Next generation of water quality improvement program (ongoing program of scouring, pigging, reservoir cleaning)	• Continuing program of air scouring and pigging, reservoir cleaning • Increased quality of water supplies through air scouring, reservoir maintenance and disinfection optimisation • Improvement of DWQMP response and planning to ensure water quality and regulatory compliance • Improved regional conditional data to inform replacement programs.	2020-23	Rotating Annual works
	Review of regional assets - Infrastructure Cliff project (first phase)	• First of its kind regional approach to assessment management • Identification of likelihood (condition) and consequence (criticality) of RAPAD water and sewerage assets • Resolution of gaps and inconsistencies in existing asset registers, useful lives • Identification of past failure mechanisms to project useful lives more accurately than age-based assessment • Knowledge transfer to asset management outside of council's utilities management including roads, footpaths, gardens, stormwater drainage and fleet	2019-22	Underway

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
WBBUWA	Strategic Plan to identify, and prioritise collaboration opportunities including shared services, resources and assets (Q5-41)	• Strategic collaboration for resilience, service standards and business continuity • Identify efficiencies for financial, reputational, skills development and productivity • Develop strategic road map for future regional QWRAP institutional arrangements • Maintain alignment of political and technical groups and regional strategic direction	2019-21	Near Completion
	Water Industry Worker training adopting approach from expanding the WIM Alliance program (Q5-53)	• Building on the success of the WIM Alliance program to build skills and career pathways for local field and network staff who can be (incorrectly) viewed as unskilled • Common training and skill pool for participating (mostly larger) WBBROC councils • Provides a pathway for smaller WBBROC councils to adopt best practice WIW training	2020-21	Near Completion
	Ongoing regional sewer relining rounds following on from successful QWRAP Stage I program	• Largest joint sewer-relining contract in Queensland • Ongoing cooperation of councils capitalising on initial QWRAP project • Material savings and improved service delivery through central oversight • Template for sewer relining programs in other QWRAP regions • Reduced long-term costs of pipe failure & repair	2017-22	Ongoing regional cooperation
	Common approach for DWQMP development.	• Following on from a study by Hunter H2O on potential alignment of DWQMPs across the region. • Joint specifications for review and updating DWQMPs. • Streamline approach for councils and Regulator.	2020-22	Deferred
	Industry placement program review of CCTV footage (Q5-50)	• Cooperation with local University (CQU) to attract youth expertise to the local workforce. • Improved techniques for condition assessment of ageing linear assets (alternative approach to AI program trial by the WIM Alliance). • Coordination of asset condition assessment across the region and standardisation of methods and metrics. • Increased ability to manage joint relining contract to ensure quality and target assets based on assessment of risk.	2020-21	Complete
	A training framework for 'Water Industry Workers' (Original WIM project Q5-43 expanded as WBBROC project Q5-53 and now extended for new intake as WIM project Q5-62 – see below)	• Creation of career pathways and job certainty for water industry workers (field and network staff) who can otherwise be under-recognised. • Improved consistency of training for quality and common skill pool ($100,000-$1 M value expected over next 5 years). • Leading regional Queensland in this area linking regions including WIM Alliance, WBBUWA and councils in the CQ, NQ and FNQ regions. • Development and implementation of a framework for the coordination and delivery of agreed and consistent training across multiple regions.	2018-22	Near completion.(Extension to June 2022 as a WIM project)

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
WIM Water Alliance	Resource and staff sharing arrangements among WIM councils introduced through QWRAP sub-groups	• Mirani township on-call arrangements (estimated benefits >$10k last FY) • Resilience through cross-council sharing of staff and joint trouble-shooting • Increased capacity for shared critical spares and equipment • Planning underway for the Proserpine Airport (WRC) and Midge Point (MRC) to be supplied potable water via a pipeline from WRC • Joint research and investigation into AI, SCADA and digital technologies	2019-22	Ongoing
	Ongoing joint projects and cooperation incorporated into BAU (with indicated projected for next five years)	• Service Level Agreements for common equipment (up to $100k savings), shared procurement documentation (>$100k), joint chemical procurement (>$10k), sewer and manhole restoration (>100k), register of documents (up to $10k), AI CCTV development (up to $100k), SCADA standardisation program (up to $100k)	2018-21	Ongoing
	WIM SEQ Study Collaboration Tour (Q5-56)	• Upskilling of local managers and shared knowledge with SEQ experts. • Joint networking between councils and SEQ Utilities. • Investigation of best practice approaches being used in SEQ. • Roundtable discussion for senior WIM Alliance Managers with SEQ experts to build technical knowledge and networks on best practice for water businesses on asset management, AI technology, contracts and plant operations.	2020-21	Complete
	WIM Nitrogen Field Sensor (Q5-51)	• Joint research including WIM Alliance councils and the local University (CQU) • Focused on nitrogen, the most harmful pollutant for the GBR and the primary metric for urban discharge regulation • Innovative technology for automatic and instantaneous detection and measurement, which has not been reliably achieved elsewhere, using a biochemical 'dip-stick' approach • A progressive industry collaboration, combining council technical knowledge with cutting edge university research on real-time measurement of ambient nitrogen.	2020-22	Underway
	Extension of the Regional Water industry Worker program (Q5-62)	• Extension of the successful WIW training scheme initiated by WIMWA • Creation of career pathways and job certainty for water industry workers (field and network staff) who can otherwise be under-recognised. • Cross regional collaboration between councils including WIM Alliance, WBBUWA and councils in the CQ, NQ and FNQ regions. • Development and implementation of a framework for the coordination and delivery of agreed and consistent training across multiple regions.	2021-22	Underway
	Sewer Condition Assessment and Relining	• Continuation of initial joint contract development • Short-term savings projected at $20,000 p.a. by streamlining tendering documents • Joint procurement of sewer condition assessments expected $700,000 p.a. savings • Benefits include risk management, council capacity building and regional self-sufficiency • First step in creating an ongoing joint sewer relining program to generate further savings • Build on learnings and documentation from successful WBBROC joint relining project	2019-21	Underway (COVID delay)

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
DASB	Water Supply Security Template Trial (Q5-57)	• Comprehensive assessment of risks and solutions for a small community supply (Killarney). • Leveraging local knowledge to improved local water security in Southern Downs RC. • Opportunity to trial the Department's draft Water Supply Security Template for small communities (e.g. provision of recommendations to develop usability). • Demonstration project for other SDRC, DASB and Queensland small communities.	2020-21	Nearing completion
	Cyber security audit & risk assessment (Q5-60)	• Review to assess and improve regional security against cyber-attacks • Identification and prioritisation of risks and optimal solutions. • Development of measures to meet and exceed regulatory requirements for cybersecurity. • Regional approach to streamline and align responses to emerging threats. • Joint approach to for financial procurement savings and streamline/improve contract management.	2021-22	Commenced
	Regional Operator Forum and Field Day	• Follow-on from prior successful forums (DASB 2020 and WIM) • Previous DASB forum attracted over 30 staff from across DASB councils • Network formation and shared knowledge from case study presentations • Improve future one-one-one conversations and build resilience among the region's operational staff.	2021	Ongoing
	Alignment of DWQMP Audits	• Single contract for auditing DWQMPs across the region • Improved safety and compliance with DWQMPs • Joint procurement savings on specialist consulting services augmented by regional coordinator contract oversight • Opportunity for collaboration on common improvement processes and requirements • Councils from the newly formed SWQROC offered opportunity to participate in the process.	2020-21	Commenced

Region	Initiative	Benefits (monetary, tangible and intangible)	Period	Status in 2020-21
SWQLD ROC	Institutional review of alternative regional models.	• Mandatory review comparing three alternative institutional models for collaboration on water and sewerage management. • Streamlined approach leveraging the recent review of the DASB group (two councils of which transferred to the SWQROC) • Survey process undertaken by regional coordinator taking advantage of DASB experience.	2020-22	Commenced
	Skills needs assessment for regional operators	• Assessing needs and gaps for the highest priority identified by the region at technical and political levels. • Leveraging off similar projects in other regions and building on work undertaken by the Queensland Skills Partnership. • Facilitated by regional coordinator building on experience in DASB and other roles.	2020-22	Commenced
NWQROC	SCADA assessment and reviews (Q5-61)	• Audit and analysis of SCADA systems of four participating councils in the NW region. • Comparison and benchmarking among the councils along with assessment of needs based on modern service provision and industry knowledge. • Identification of improvement needs and options for joint delivery of common issues. • First collaborative project on water and sewerage management among the NW councils.	2020-21	Near Completion
NQROC	Research Partnership on Treatment Options for biosolids in north Queensland (Q5-59)	• Partnership among five councils and James Cook University. • First ever, regional characterisation of biosolids to identify specific issues and needs for biosolids in tropical Queensland. • Identification and quantification of contaminants of emerging concern and potential treatment options. • In future tears the project will assess feasibility of short-listed treatment options for the biosolids from N Qld councils.	2020-21	Commenced

Annual Highlights

Detailed project reports are available for all funded work undertaken in QWRAP regions in addition to regional annual reports with acquittals. The activities undertaken in the past year are summarised in the above table and selected case studies are provided below.

COVID-19 Impacts to regional collaboration

The ongoing COVID-19 pandemic had significant impacts across all regions, mainly associated with:

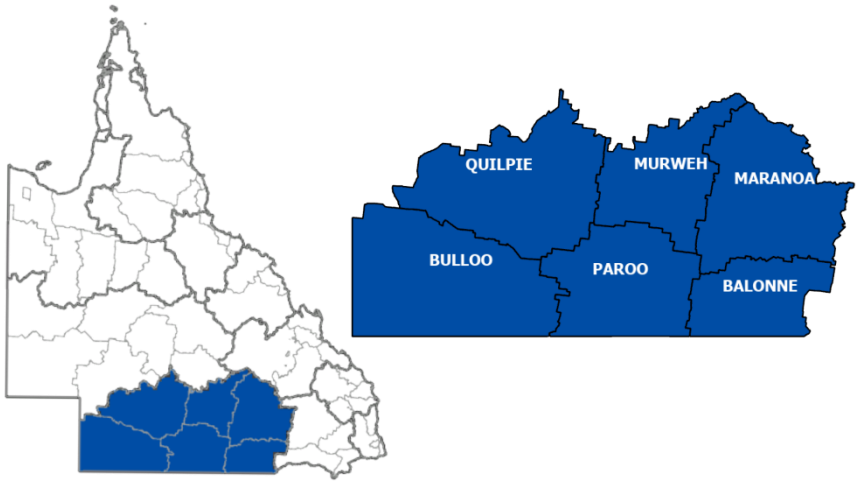
- difficulty in securing interstate contractors to undertake joint projects,
- council policies restricting travel to regional meetings,
- council budget constraints slowing participation in joint projects.

These factors led to project delays and a hesitancy to initiate new projects for all regions.

However, there have also been positive outcomes, for instance, the initial COVID-19 lockdown highlighted the need for many councils to upskill and multi-skill existing workforces to improve their resilience in the face of restrictions and potential lock-downs. There are also reports from some councils of wholesale changes in work practices brought about by the need to reduce physical contact that have resulted in improved efficiencies. Changed work practices have not always resulted in increased productivity but they have enhanced the readiness for employers and employees to embrace new work methods and communication approaches. QWRAP groups play an important role in information and resource sharing during the height of the pandemic and a practical local safety net in the face of developing 'hot spots'. The shared documents and resources, joint operator forums, technical networks and common standards that form the basis of many regional groups provided additional resilience for small councils that may lack capacity to develop resources rapidly on their own.

South West Queensland Water and Sewerage Alliance

The Queensland Water Regional Alliance Program (QWRAP) has welcomed the sixth Queensland region to form a QWRAP group to investigate collaboration on water and sewerage management. The South West Queensland Regional Organisation of Councils (SWQROC), Queensland's newest ROC, is comprised of Bulloo, Murweh, Paroo and Quilpie Shire Councils as well as Balonne Shire and Maranoa Regional Council which were



SWQROC region services 27 often small and remote communities covering an area of 320,000 km^2 with a population of 23,985.

formerly part of the DASB group. From its beginnings, SWQROC indicated its intention to form a water and sewerage group, and its interest in participating in QWRAP because of the many shared challenges in provision of water and sewerage services.

Simone Talbot, Executive officer for the SWQROC said "The Mayors and CEOs of the SWQROC are collaborating on a range of priority issues and acknowledging there are opportunities for beneficial cooperation on water and sewerage".

The six councils in the SWQROC provide water services to twenty seven communities, some of which also have non-potable networks. The majority of supplies are sourced from groundwater with many accessing the high-temperature but extremely pure water of the Great Artesian Basin. Fifteen of the communities are on sewer networks with differing sewage treatment processes while the remainder have septic systems.

"There is strong recognition that these urban services underpin the sustainability and future development of towns across the region and a desire to take a leading role in providing safe, secure and sustainable services in the face of common regional challenges."

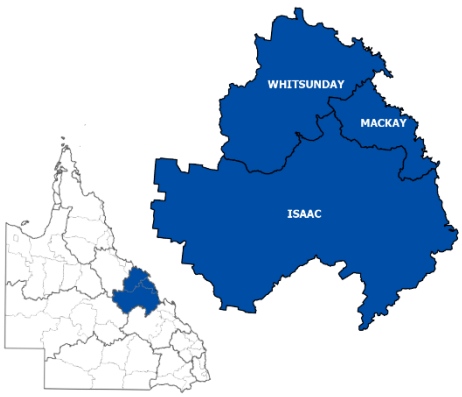
These six councils have progressed more rapidly to a Water Alliance than any other regional group in Queensland. Learning from the institutional reviews in other regions, the SWQROC has streamlined their review of available collaboration options and elected to move directly to form an Alliance.

Overseen by the ROC, a technical group Chaired by Mr Peter See (Quilpie Shire Council) is initially focusing on skills and training needs for the region and opportunities for joint procurement.

The new group received funding from QWRAP for a part-time coordinator (Mr Alan Kleinschmidt) in 2021 to develop and expand collaborative opportunities in the future.

WIM Water Alliance

The region is overseen by a steering group chaired by Mr Troy Pettiford (Whitsunday RC). The group reports to the Greater Whitsunday Region Council of Mayors which recently identified the Alliance program as one of their priority activities to help deliver benefits to the Region and its communities, and to enhance organisational capacity of their Councils. The regional coordinator (Mr Barry Holcroft) has continued in the role.



WIM Water Alliance includes Whitsunday, Isaac and Mackay Councils servicing over 173,000 people in 22 communities.

The projects undertaken in the region in previous years have included initiatives impacting strongly on ongoing capital, operational investment and training by participating councils. These projects demonstrate a high level of maturity because of the degree of collaboration and trust entailed, the potential for further future regionalisation and the financial savings generated. All projects have been aligned to the high-level objectives in the Alliance Terms of Reference which were developed with reference to the council's Strategic Plans. Projects in the region have been promoted through presentations at industry forums and conferences and through council social media. Overall, the region is at a level 6 maturity level with some projects representing level 7.

Objectives of the WIM Water Alliance

- **Build the businesses collective capabilities** through development of stronger networks, greater 'cross border' cooperation and alignment of systems and processes.
- **Demonstrate leadership** in development of the water industry within regional Queensland.
- Develop an agreed position on common issues in **consultation with stakeholders** (e.g. the state, regulators, the business owners, key customers).
- **Strive for further opportunities for reform** of the businesses to improve the efficiency of the W&S businesses across the region.

Highlighted Initiative: SEQ Collaboration Study Tour (Q5-56)

Description: A delegation of WIM Alliance team representatives from each council visited several sites and business offices across SEQ. The group visited sites across the SEQ providers: Unitywater, Seqwater, Logan City Council, City of Gold Coast, Urban Utilities and Redland City Council.

The primary focus of the delegation was to review the SEQ water businesses' approaches, and methodologies employed in operational management including SCADA and asset management. Learnings will be used by the WIM Alliance to improve practices, lift productivity and keep annual water and wastewater rate rises to a minimum. Deferring capital expenditure is being pursued by WIM councils and SEQ water utilities and council water businesses have succeeded in freezing or minimising their annual water and sewerage price rises over the last 5 years.

Strategic Alignment: The SEQ water utilities and councils have benefits of size and scale efficiencies and attract larger market interest in all their activities and work programs. This opportunity is an essential part of some WIM joint initiatives in the current work plan. The councils also seek to benchmark their operations regionally and are learning from other benchmarking partners in QWRAP regions and elsewhere including SEQ.

Outcomes: The study tour took place in May 2021. Sites visited included the Mount Crosby Water Treatment plant, the Morayfield Depot and laboratory, Cedar Grove Environment Centre, Loganholme STP, and Merrimac STP. A key outcome from the study tour was a summary of "three key messages" from each of the participants to report to their individual Council water and sewerage teams.

A common theme of these messages was the importance understanding existing assets well – asset registers are the basis for planning capital, finance, operations, and maintenance. Understanding their existing assets has permitted SEQ operators to shift the focus away from the construction of new assets to better use of existing assets, with concomitant reductions in costs that can ultimately be passed on to the customer. Asset Management and optimisation of capital investment has been a prime target for the utilities with a strong emphasis on asset criticality, predicting failure and the asset life cycle. Best practice learnings were shared and will guide WIM's strategic planning.

Benefits: The study tour provided opportunities for six professional leaders to visit statutory water utility authorities and larger Councils in SEQ exposing these staff to new technologies, innovative ideas and different regional standards/approaches. The also tour constitutes a collaborative regional training exercise allowing these staff to develop cross utility/council networks for better cross-regional communication and information-sharing.

There is an expectation that greater information sharing can occur with the SEQ entities to help improve and benchmark the performance of WIM Alliance councils. There is much to learn from these organisations about the strategies to minimise rising operational costs like energy, chemicals and employee costs. Regional planning strategies and initiatives have also focused on the corporate direction to reduce costs.

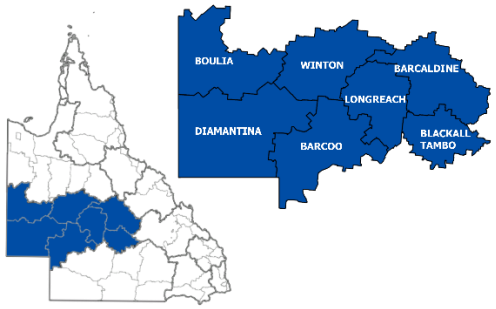
Customer service and improvement of customer experience has also been targeted in both regions with a strong focus on customer touch points. A key element has been implementing customised training & development programs like the water industry worker to improve field staff skills, zero harm approaches and staff well-being programs with best practice results. The study tour allowed WIM managers to compare and contrast their successful implementation of the program that originated in SEQ.

Maturity: The WIM Alliance has been operating for over 5 years with a high level of regional collaboration and excellent communication and networking across the Whitsunday region. This collaboration study tour is another example of the collegial behaviour and networking across the region. This project would be assessed at level 7 of the maturity model.

RAPAD Water and Sewerage Alliance

The RAPAD Water and Sewerage Alliance (RAPADWSA) saw significant governance change in the prior reporting year with the Chair of the Technical Group changing from Ms Sally O'Neill (Barcoo) to Mr Harin Karra (Boulia). The Chair of the Strategic group changed from long-standing Chair Cr Ed Warren (Mayor of Longreach) to Cr Andrew Martin (Mayor of Blackall-Tambo). Over the year, the group recovered from these changes and continues to undertake collaborative projects and joint activities. The group is assessed to remain at level 6 in the maturity model with some projects representative of level 7.

The Group developed their *5-year Strategic Plan* in 2017 and a *Strategic Implementation Action Plan* in 2018. These documents continue to provide direction and guidance for the region's projects.



The Regional Area Planning and Development Water and Sewerage Alliance (RAPADWSA) includes seven council servicing 10,300 people in 20 communities across an area half the size of NSW.

Objectives of the RAPAD Water and Sewerage Alliance

- Build on collaborative regional opportunities;
- Provide safe, reliable and fit-for-purpose W & S facilities;
- Enhance sustainability through efficient water use and security of supplies;
- Facilitate responsible and sustainable development;
- Develop the strengths of the region; and
- Provide affordable, fit-for-purpose services that are environmentally sustainable.

RAPADWSA highlighted initiative: SCADA CONOPS Workshop (Q4-55)

Description: The Councils that make up the Remote Area Planning and Development Water and Sewerage Alliance have telemetry and SCADA systems that have evolved independently over time, leading to a variety of solutions and infrastructure deployed in different areas. Unfortunately, a majority of councils within the RAPADWSA have experienced issues with their ageing systems and some are no longer in full working order. In late 2019, the group took delivery of a completed project and report that examined the program of works that would be required to regionally align SCADA, telemetry and instrumentation with a view to assessing the potential for centralised operations. That project received funding from QWRAP in 2018 (Q5-45). Following project delivery, the group commenced a follow-on project for the provision of a Concept of Operations (CONOPS) for the RAPAD Shires and Councils. This project documents what is required to achieve the RAPAD CONOPS vision and objectives for future SCADA, telemetry, instrumentation and centralised operations. The next step in the project was to conduct a CONOPS Workshop to elucidate:

- the existing operational environment,
- current issues and weaknesses with existing water sewerage services, and
- a vision of a future service delivery.

The workshop was held in July 2020, and the outcomes report was delivered in September 2020. Following the workshop the contractor undertook further investigation of the existing instrumentation in Barcaldine, Barcoo, Longreach, and Winton where some additional issues were identified.

Strategic Alignment: The Councils that make up the RAPAD Water & Sewerage Alliance identified SCADA as an area for focus in their 2018 Strategic Implementation Action Plan. It was identified that a more unified operational methodology and supporting infrastructure, if implemented, would provide reduced capital expenditure and operating costs as well as improved maintenance support and improved systems performance. The joint SCADA project allows councils to work collaboratively and progress the SCADA maturity throughout the region. The CONOPS workshop enabled development of a collective operational vision for the provision of safe and effective Water and Sewerage Services for the region.

Outcomes: The CONOPS workshop and resulting report has provided a common mission for investment, operations, infrastructure, and maintenance, and defines a pathway for the alignment of infrastructure changes that will support that mission. The project also informs the Requirements Specification Documents and scope of the RAPADWSA SCADA, Telemetry, Controls, Instrumentation and Centralised Operations Program of Works by identifying the capabilities needed to satisfy the business needs and mission.

Benefits: Delivering this project through the RAPADWSA has provided member Councils with recommendations on how to upgrade their Telemetry & SCADA systems. The RAPADWSA's intention is, depending on the outcomes of the recommendation report, to align the systems which in turn would result in further joint procurement opportunities for purchasing materials and the maintenance of their system, leading to the following regional outcomes.

- Uniformity and alignment for future cost reduction.
- Staff skills and redundancy coverage.
- Council reputation improvements.
- Improved regulatory compliance and capital sustainability.
- Asset management and optimisation of capital investment.

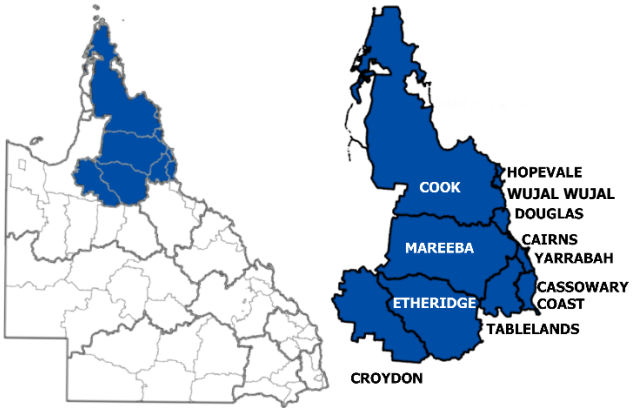
The development of working relationships among Councils led to improved levels of services by collaboratively going through the transition process. Participation in the CONOPS workshop helped to build relationships between member Councils and improved employee interactions and skills during the project. There is also the opportunity for other surrounding Councils or QWRAP regions to replicate this jointly designed and procured project. A majority of remote Councils use similar Telemetry & SCADA systems who have faced similar issues to that of the RAPADWSA. Surrounding Councils/water alliances can undertake a review and potentially utilise the CONOPS framework like the RAPADWSA to better understand their systems and the updates required. Some of the intangible benefits are listed below.

- Councils exposed to new technology and standards.
- Transferability to other regions with information shared with other QWRAP groups.
- Participation promotes self-determination by councils.
- Improved regional benchmarking and performance reporting.
- Region better placed to leverage further investment.
- Leadership and experience translated to other areas of Queensland that lack local capacity
- consideration innovative solutions to capacity and workforce issues (i.e. common room)

Maturity: This project demonstrates a high level of regional maturity, with the involvement of all seven RAPADWSA members in the workshop. The broad involvement of RAPADWSA members, the strategic nature, and joint operational vision of this project demonstrates maturity level 7.

FNQROC

In 2019 Far North Queensland Regional Organisation of Councils (FNQROC) elected to change their participation in QWRAP in line with the priorities of the FNQROC Board and forego funding for a regional coordinator but continue to work on technical W&S projects as they arise. The FNQROC Board continues to be informed of opportunities and issues and maintain an ongoing relationship with QWRAP and retain access to funding with all projects assessed based on their specific contribution to regional maturity. This reflects an overall level 4 collaboration maturity. Several projects were undertaken in the past year, with a focus on joint procurement including a regional sewer relining project, common auditing processes for regulatory audits and a new regional training program.



The FNQROC region includes 11 councils, servicing 50 communities, including some of the smallest council areas in regional Queensland. The region has a population of 260,000 spread across an area equal in size to the UK.

Highlighted Initiative: Training hub approach for operators from FNQROC councils (Q5-58)

Description: Four FNQROC councils collaborated on delivery of accredited training for water and wastewater treatment operators. A key requirement was for training to be provided within the region via face-to-face workshops. These workshops maximise learning outcomes and provide an opportunity for networking and learning among operators from neighbouring councils. Holding training within the region allows the training to be tailored better to the region's 'needs'. Joint delivery provides cost savings by meeting the RTO's minimum training numbers and making the tender appealing to RTO providers.

Strategic Alignment: Delivery of common units of competency across councils helps boost regional capacity and provides opportunities for future movement of staff between councils both for temporary support (annual leave, emergencies) and career growth. The opportunity to meet and train with operators from neighbouring councils also helps to build technical support and mentoring networks within a region.

The Certificate III in Water Industry Operations is generally accepted as the minimum standard of training for water or wastewater treatment plant operators. Completion of this accredited training improves operational capacity and reduces the risk of public health or environmental incidents for councils. There are increased opportunities for sharing staff and other resources making the region more resilient, particularly in times of natural disaster.

Outcomes: The group invited tenders from three RTOs to deliver the Certificate III in Water Industry Operations and awarded the tender to Simmonds and Bristow. Training was delivered via five workshops of between 3 to 5 days each, with each workshop block hosted by a different council. The program saw nine operators trained by Simmonds and Bristow in the Certificate III in

Water Industry Operations (Treatment) during late 2020 and early 2021. The trainees came from Cairns, Cassowary, Mareeba and Tablelands councils.

"This experience has opened me up to what is possible and how I can better work with FNQROC to get opportunities off the ground for other industry training we are currently struggling to get delivered".
- Erin Burns, Team Leader HR Services from Cairns Regional Council

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Benefits: By jointly meeting the RTO's minimum cohort numbers, councils receive a cost saving by not being charged additional out-of-pocket expenses and all learners qualify for user choice funding that covers the full cost of their training delivery (excluding the student contribution fee).

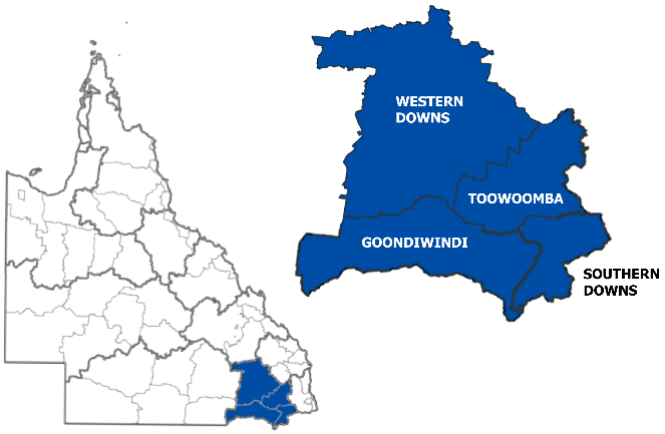
Joint delivery strengthens regional resilience by improving the transferability of skills and knowledge of operators across various treatment plants. This increased capability provides greater surety of levels of service and management of risks for regional communities across the FNQ region. Environmental regulations require appropriately trained staff and this Certificate III program is a nationally accredited mechanism to demonstrate regulatory compliance important to protecting local waterways and the Great Barrier Reef.

"We have built on the award-winning training for the Water Industry Worker program in north Queensland and the hub-training model championed by the Queensland Water Skills Partnership."
Carlie Sargent, Water Skills Partnership

Maturity: The FNQROC region incorporates a diversity of Councils. This project required strong collaboration and support among four of those councils, demonstrating a level 4 degree of collaboration maturity.

DASB Region

Two developments during 2020-21 will have a significant impact on the future of the Downs and Surat Basin (DASB) Technical Group. The first is the formation of the South West Queensland Regional Organisation of Councils (SWQROC). SWQROC comprises, Bulloo, Murweh, Paroo and Quilpie Shire Councils as well as Balonne Shire and Maranoa Regional Council which were formerly part of the DASB group. Balonne and Maranoa Councils have resolved to withdraw from the DASB Water Group on completion of the current projects.



The Downs and Surat Basin (DASB) region is in the process of reducing to four members (Goondiwindi, Southern Downs, Toowoomba and Western Downs Councils) but are considering water security regional issues with several neighbouring councils. The four members service 250,000 people.

The second development is the establishment of the Southern Queensland Inland and New South Wales Border Regional Water Alliance (SQINB-RWA). The participating councils are Toowoomba Regional Council, Western Downs Regional Council, Southern Downs Regional Council, Goondiwindi Regional Council, Lockyer Valley Regional Council and Tenterfield Shire Council (NSW). This regional water alliance has a largely non-urban water focus and the future of collaboration on urban water issues is still being considered at a political level. However, interest has been expressed in continuing collaboration at a technical level.

Despite these challenges, the DASB Water Group was able to progress the Cyber Security Audit, Risk Assessment and Risk Mitigation project which was planned for commencement in late 2019-20 but was delayed by the COVID-19 pandemic and response actions. The contract was awarded to RIoT Solutions in December 2020, with work commencing in late January 2021. To date, the Balonne Shire Council audit and report has been completed, with the remaining audits to commence during May and June. The project will be completed by 31 July 2021, enabling the findings to be incorporated into the DASB Councils' DWQMP reviews which are due for completion by 1 October 2021 and addressing the requirement to address cyber security in future DWQMPs.

In addition, the region is aligning their audits for DWQMPs. Four-yearly external audits of Councils' DWQMPs are required to be completed by 1 October 2021. A contract for joint audits has now been awarded and is underway, with all audits to be completed by mid-August 2021, allowing the opportunity for the findings to be incorporated into the DASB Councils' DWQMP reviews which are also due for completion by 1 October 2021.

Objectives of the DASB Water and Sewerage Group

- Facilitate the effective and efficient functioning of the DASB Water Group by effective administration, communication and member support.
- Secure ongoing support for the DASB Water Group by engaging elected representatives and senior management.
- Identify and adopt an appropriate regional collaboration model that optimises benefits for the DASB Water Group member councils and communities.
- Demonstrate the benefits of collaboration to DASB member councils' communities and Queensland Government and other stakeholders by identifying and progressing immediate collaboration opportunities.
- Communicate the successes, emphasising the cumulative benefits over and above the sum of individual project benefits and the alignment of collaboration with each council's responsibilities towards its community.

Highlighted Initiative: Water Security Statement Field Trial (Q5-57)

Description:
In early 2020 the DASB Water Technical Group proposed a project to identify the water schemes requiring water security assessments, document the data needs to undertake robust water security assessments for those schemes, conduct a gap analysis of the available data against the identified data needs, and quantify the costs to address the identified data gaps. The Water Security Assessment – Needs Analysis and Data Gap Assessment project is under consideration for future implementation.

In April 2020 the then Department of Natural Resources, Mines and Energy's (DNRME) Regional Urban Water Supply Planning group developed a draft Water Security Statement (WSS) template and guidance document, intended for in-house use by Councils. The Department invited QWRAP regions to participate in the pilot program for the WSS template and DASB Water Group Councils expressed their interest in participating. Southern Downs Regional Council agreed to a trial based on the Killarney drinking water scheme. At the time, the Southern Downs region was experiencing a protracted drought, and the Queensland Government was funding water carting operations to supply the town of Stanthorpe with water from the neighboring town of Warwick. The Killarney drinking water scheme services approximately 850 residents and has 498 connected properties, of which 415 are residential. Raw water is sourced from Spring Creek weir with an off-stream storage providing a back-up supply.

The project followed a staged approach, with reporting back and consultation with the Department and the Project Steering group incorporated into each stage. The project structure incorporates the Department's stated aims for the pilot template and expected outcomes. The two stages are: Stage 1 – Data identification and collection; and Stage 2 – Water security assessment.

Strategic Alignment: The six Councils comprising the Downs and Surat Basin (DASB) Water Group collectively operate 60 water schemes, most of which are severely impacted by recurring drought conditions and will be increasingly vulnerable to climatic influences. A number of schemes are currently reliant on trucking water to maintain supplies and that number will grow if drought conditions continue. Some Councils have been forced to identify and urgently implement alternative water sources, including expensive bore projects. The impacted water schemes utilise both groundwater and surface water sources.

The DASB Water Group Councils are committed to ensuring long term water security for all of their communities. Water security assessments are an important first step in addressing short-term water security and planning for future water needs. The Queensland Government, through its Regional Water Supply Security Assessment (RWSSA) program, has completed or is currently undertaking water security assessments for Chinchilla, Goondiwindi, Stanthorpe and Warwick within the region. However, the RWSSA program does not extend to the small community water supplies which constitute a large proportion of the DASB water schemes.

The Queensland Government has recognised an opportunity to support improved water service provision by developing a template and guideline for self-assessment of small communities. The template targets water security assessment and planning needs for communities with less than 2,000 resident population (the threshold that generally applies for eligibility for inclusion in the RWSSA program).

In accordance with its commitment to using pilot projects to improve the uptake and on-ground application by service providers of its water and sewerage service enhancement programs, the Department sought expressions of interest from QWRAP regions to participate in a project to pilot the WSS template. The aim of the pilot project was to determine the practical application of the template by water service providers.

Outcomes: The project has resulted in the development of a comprehensive report that details the Discovery and Application phases of the project. The outcomes can be summarised as below:

- Data sources – Identified existing data sources and articulated the availability and paucity of data for some key inputs to the WSS. It also identified external data sources that may be relevant to other small councils undertaking such a project, for example growth projections and climatic estimates for regional areas.
- Data completeness — Identification and alignment of data sources for a complete dataset for the desired 10-year timeframe for the Template (which proved challenging for some data as many gaps became apparent in the trial area).
- Data template – Recommendations for revisions and expansion of the template to assist future users both within and beyond the DASB region.

At the time of writing of the WSSS Assessment for Killarney Water Supply scheme is underway, with final outcomes to be delivered shortly.

Benefits: By participating in the pilot, the DASB Water Group has been able to test the suitability of the template for in-house use by Council personnel and assess the availability of data to undertake the assessment. The participants have provided detailed feedback to the Department and make recommendations for refining and improving the practical usability of the WSSS template.

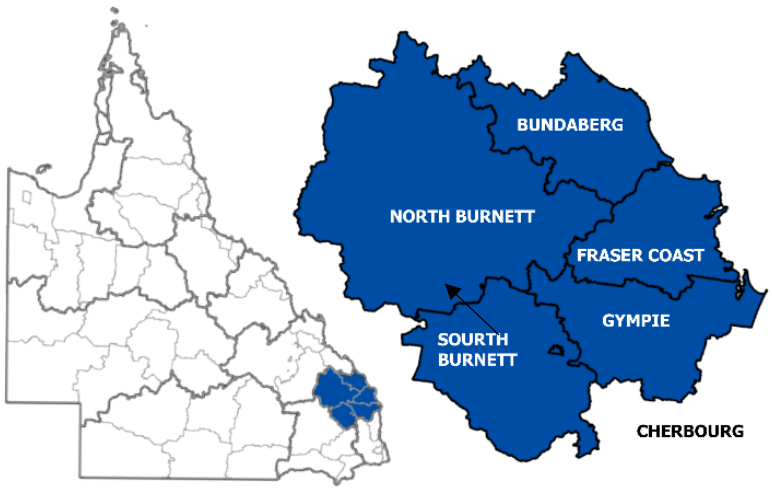
DASB's involvement in the pilot program will help to ensure that the final Guidelines and Template are user-friendly for use by councils' water and sewerage service staff in understanding and assessing water supply security for their small schemes, including understanding potential timelines in completing an assessment in accordance with the guideline.

The pilot testing of the WSSS template by a QWRAP group has the potential to provide benefits for other QWRAP regions and any other councils that are experiencing water security concerns. It will also assist the Queensland Government to refine the Template to facilitate robust cost-effective WSS assessments for the smaller water supply schemes in Queensland.

Maturity: Whilst this project is focused on the Killarney drinking water scheme, which is within the Southern Downs Regional Council, the Project Steering Committee includes representation from five of the six DASB Water Group Councils, and all six members provided cash contributions to the project, in addition to approving in-kind contribution in the form of Regional Coordinator's time. This project demonstrates collaboration at a level 6 of regional maturity.

WBB Urban Water Alliance

In 2020, the Wide Bay Burnett Regional Organisation of Councils (WBBROC)experienced a shift in focus with the withdrawal of Bundaberg Regional Council from the formal Regional Organisation of Councils. Despite this significant transition, the region's QWRAP Water Alliance has continued to move forward with collaborative projects under the direction of the Chair Narelle D'Amico (Bundaberg RC), who took over the chair of the group following the departure of Mr Stephen Jewell (Gympie).



The Wide Bay and Burnett Water Alliance comprises six councils servicing over 292,000 people live in over 35 communities in an area covering 49,000 km².

The group is now operating as the Wide Bay Burnett Urban Water Alliance (WBBUWA), with direct reporting to each council though regular updates to the CEOs.

Prior to the withdrawal of Bundaberg from the ROC, the CEO of WBBROC Mr Joe Veraa was acting as regional coordinator as an interim measure until the strategic direction of the ROC was decided by, a process delayed by COVID-19. With the changes that have now taken place, the WBBUWA was left without a regional coordinator, ***qldwater*** has stepped in to fulfil the function.

The region has been operating for some time at a level 6 regional maturity and projects slowed over the past year due to the transition. The formation of the WBBUWA has continued at this level, with participants now planning high level joint projects across the region aligned with the Strategic Planning the group began in 2019. Furthermore, the Alliance has actively sought joint training initiatives with councils to the north as an extension of the WIMWA Water Industry Worker Training program.

Highlighted Initiative: Engagement of engineering undergraduates to support sewer relining and data analysis (Q5-50)

Description: In 2020, three undergraduates from Central Queensland University joined a QWRAP project to undertake a desktop review of asset condition assessments including CCTV analysis for the current sewer-relining program. This work is essential to the delivery of a regional program in which CCTV footage is reviewed, categorised and logged for pre and post rectification defects. Over 6000 km of network pipe assets need to be reviewed at three stages during the contract to enable the regional sewer-relining project to be delivered against specification. One of the key constraints in performing this review is to ensure consistency in the execution of the individual work packages. The previous WBB relining program highlighted the benefit of consistency of methodologies in project management which is best achieved by resourcing key functions collectively.

Strategic Alignment: Like many other regions across Australia, WBB Councils can struggle to attract and retain highly skilled professionals at all levels within the sector. As a result, the WBB councils resolved to adopt the Water Industry Skills and Training Initiative to meet the challenges of recruiting and retaining key skills and competencies. This includes ongoing operator training to nationally accredited standards, internships and undergraduate placement programs. The objective of this years' program is to expose engineering undergraduates to career opportunities within the regions' urban water and sewerage sector.

Outcomes: The project saw the assessment of 179 relined pipes at SBRC, 24 (NBRC), 303 (Fraser Coast, 47 (Bundaberg) for identification of defects from work done by the relining contractors. A further 694 pipes were inspected at South Burnett to be included in the relining program. The student's induction to the project included training on failure modes with samples of different types of defects. The student's efficiency to the task meant that the total time taken for the assessment was less than if the work had been outsourced. The students' attention to detail was noted by the supervisor who attributed their careful nature and ability to pick up even small defects to their interest in the project and current attitude to learning.

The CCTV assessments were provided to council decision makers and allowed efficient planning of where pipes needed immediate attention versus being left for a future round of rehabilitation. One strength of the analysis was in identifying junctions that needed repair prior to relining. If not for this initial step, the relining process would have been interrupted when junction defects were detected creating higher costs. Assessment of CCTV footage following relining allowed for identification of any defects in the work and provided a significant part of the contract management process.

Benefits: The model for the development and attraction of engineering graduates to the region may be transferable to other regions in Queensland. The program will raise the profiles of the urban water sector and regional utilities as attractive options for careers for engineering graduates in a range of disciplines. Other identified benefits of the project are:

- Significant savings arising from engagement and supervision of undergraduates by the Alliance rather than individual participating councils under a flexible deployment model.
- Reduced demand on collaboration partners in supervision and resourcing the regional sewer relining program thereby encouraging wider adoption across councils.
- Enabled a higher level of probity/diligence in verifying the deliverables provided under the collective procurement model.
- Raised profile of water sector in engineering faculties and encourages regional career choices.
- Beneficial experience for the students two of whom accepted industry placements during the project with the third soon to complete their study program and requesting further involvement in the project.

The direct financial benefit to WBBROC councils was estimated at $60,000.

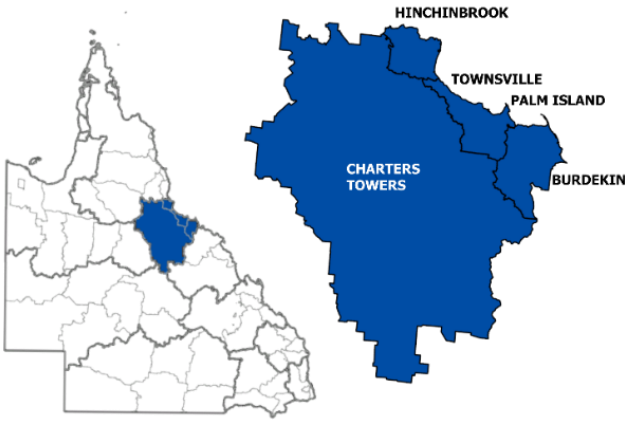
Maturity: This project has involved a high level of cooperation and coordination from the participating councils, and supervision/oversight by Fraser Coast Regional Council placing it into level 6 category of regional maturity.

Other Regions: Increasing Collaboration

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

North Queensland ROC

This group includes Hinchinbrook, Charters Towers, Palm Island, Townsville and Burdekin and has a technical group that has been meeting since 2019 to share information and resources with some small bilateral projects. Some of the councils participate WIW training program driven by the WIM and WBBB Alliances. The ROC that oversees this group has agreed to consider forming a QWRAP Pilot Region, agreement on formation is still pending. The region services a population of 234,000.



North Queensland ROC: Biosolids Technology Innovation (Q5-59)

This project represents the first formal collaboration on water and sewerage issues managed by NQROC councils and links the region to existing QWRAP regions (WIMWA and FNQROC). The project is being spearheaded by Townsville RC in partnership with James Cook University (JCU), along with Burdekin, Mackay, Isaac, Whitsunday and Cairns councils. It demonstrates the benefits of collaboration both within and beyond a single region and provides a pilot project for the NQ region. The project has also received funding from Advance Queensland Industry Research Fellowships, which is funding the principal researcher, Dr Elsa Antunes.

Anna Whelan from Townsville Water and Waste said the program was the first of its kind examining biosolids from sites across northern Queensland to better understand what contaminants might be in them and how they can be treated.

"Lots of things ranging from personal care products, microplastics, PFAS and pharmaceuticals can get washed down the sewer from everyday activities including clothes washing and food preparation. They end up at our sewage treatment plants and can get concentrated in biosolids – the fertiliser-like soil that results when sewage has been safely treated," she said.

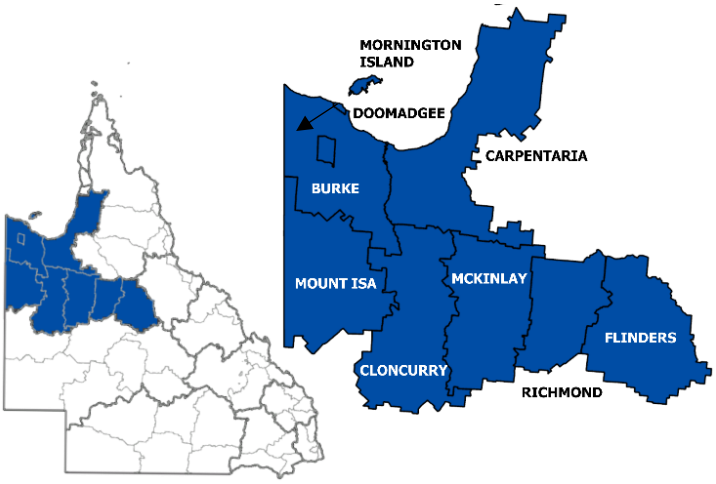
Addressing contaminants in sewage is becoming an increasingly expensive process. Many chemicals that are being used more commonly around the home wind up in sewers and can be more difficult to treat than the nutrients and pathogens that are safely removed in modern sewage treatment plants.

While the risks of contaminants in sewage remains unknown, the beneficial reuse of biosolids or even their disposal to landfill will be questioned. This not only prevents routine recycling of biosolids as soil enhancers but has potential to create a new waste product that cannot be accepted at most landfills. The project will provide the first joint characterisation of biosolids from tropical councils and the first investigation of treatment options to address public health and environmental risks in tropical Queensland.

The project is therefore critical to council and state government strategies for recycling, waste management and reduction, efficient treatment of wastewater and protection of the Great Barrier Reef. It provides a case study for future collaboration and generates outputs that will be of use to all tropical councils in Queensland. The collaboration increases the capacity of the participating regions to understand and address similar risks in future and demonstrates a valuable collaborative research model with the local University.

North West Queensland ROC

The NWQROC includes Doomadgee, Burke, Carpentaria, Mornington Island, Mt Isa, Cloncurry, McKinlay, Richmond and Flinders councils and has had ongoing discussion about collaboration on water and sewerage issues. Four of the councils (Burke, Carpentaria, McKinlay, and Cloncurry) are undertaking joint discussions to provide a proof of concept for the remaining councils in the region. The region services a population of 29,000.



NWQROC: Pilot SCADA investigation and alignment (Q5-61)

Four Northwest Queensland ROC (NWQROC) councils have received QWRAP funding to undertake a pilot project to review current SCADA systems, capabilities and gaps. Each of the councils are at different stages with SCADA systems and may have legacy hardware and software that cannot be readily changed. The object of the investigation is to explore commonalities and opportunities for alignment across infrastructure, processes and human resources, and ultimately the potential for joint procurement, shared spares and human resources and strategic development.

SCADA installation/support and operating capability continues to be a challenge for small and remote councils. Developing a better understanding of each council's system will increase the potential for regional collaboration and self-sufficiency by building regional capacity and capability. This review can identify areas for improvement or upgrades (including for cybersecurity), opportunities for cooperation but also yield recommendations for enabling a more consistent approach to SCADA with a view to promoting this approach across the broader region.

Efficient and effective remote control and monitoring of water and sewage treatment plants and their respective networks is a key contributor to maintaining high quality, reliable and compliant water and sewerage services. Well-designed and fit for purpose SCADA systems assist in addressing these priorities by implementing and maintaining efficient and effective remote control and monitoring while ensuring reliability and safety in face of threats (including cybersecurity threats).

This project will build regional collaboration among the three participating councils and demonstrate benefits for other councils in the region where there has been little collaboration on water and sewerage issues to date.

Central Queensland ROC

The Central Queensland ROC (CQROC) Technical Group includes representatives from Central Highlands, Woorabinda, Rockhampton, Livingstone, Banana and Gladstone councils and has been meeting since 2019 to share information and compare council management. The CQROC invited presentations and information on QWRAP participation in June 2021 and were considering QWRAP participation at the time of writing. The region services a population of 226,000.

What's coming in 2021-2022?

Some new projects have been planned in each of the regions although initiation has been slowed by COVID-19 repercussions and more new projects are expected towards the end of the calendar year. Some of the new initiatives are summarised below.

RAPAD Water Alliance

- New: Strategic plan update – the Regional Strategic Plan and Strategic Implementation Action Plan created in 2017 will be updated to reflect the emerging needs of the region.
- New: Phase B of the ongoing STP investigation to improve regional environmental stewardship.
- New: Water Meter Replacement/Installation – currently being scoped.
- Ongoing (delayed): Joint procurement for replacement of water mains (building on successful sewer relining projects and addressing water security and infrastructure renewals).
- Ongoing: Digital utility program to cooperatively remedy telemetry and SCADA issues identified in the analysis undertaken in 2018-19.
- Ongoing (delayed): Joint procurement of services to ensure drinking water quality (including mains cleaning, reservoir cleaning, air scouring/pigging, inspection and repair).
- Ongoing: Review and regional development of Asset Management processes to inform strategic infrastructure investment.

WBB Urban Water Alliance

- New: Prioritise regional strategic projects over a 5-year timeframe using recommendations from the recent Strategic Planning review and the strategic objectives of individual councils.
- New: Establish a new WBB node for the successful WIW program being extended by the WIM Alliance.
- New: Cooperation on research on THM analysis.
- New: Alignment of DWQMP processes (following recommendations of the review undertaken for the region two years ago).
- New: Desktop audit of Circular Economy principles enacted by Alliance members and creation of a stewardship map and prospective recommendations.
- New: Investigate options for appointing interns beyond a single council.
- Ongoing: Continue successful joint sewer rehabilitation program, over $2.5 million planned to date with two councils engaged.
- Ongoing: Re-assessment of current SCADA systems and comparison with analysis undertaken five years ago to monitor progress.

WIM Water Alliance

- New: Control room business philosophy (cross-regional project) to share resources including skills.
- New: Regional benchmarking approach – comparison of key metrics across and outside of the region.
- New: Investigation of salary packaging reviewing best practice in other areas.
- New: Review technology transfer options including MiWater and the Isaac Integrated Management System.
- Ongoing: Regional alignment of SCADA systems.
- Ongoing: Collaborative research with CQU to develop a nitrogen sensor for use in receiving waters to reduce sampling and laboratory costs and provide early warning of nitrogen discharges in GBR Waters.
- Ongoing: Recently extended WIW program in partnership with the WBB Urban Water Alliance.

DASB Region

- Ongoing: Regional operators forum bringing together operators and water industry workers from across the region to share knowledge and build regional networks.
- Ongoing: Consideration of joint Cyber security review and needs analysis for regulatory reporting.
- Ongoing: Finalisation of Water Security Statement for Killarney Scheme.

FNQROC Region

- New: Proposed new sewer relining program following on from current successful partnership.
- New: Establishment of new training hub for Water Operators built on the success of last years program.

SWQROC Region

Ongoing: Completion and consideration of recommendations from institutional review.

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.

New: Establish a new partnership with City of Gold Coast.

NWROC Region

Ongoing: Completion of SCADA review.

New: Skills needs analysis for regional operators and sharing HR across councils.

New: Review of opportunities for Automated Meter Reading technologies in NW councils.

Other (emerging) Regions

QWRAP continues to build engagement with emerging regions including ongoing trial projects with NWROC councils and discussions with the NQ and CQ ROC.

QWRAP Research

The 2020/21 research program was delayed but two projects will be delivered before the end of 2020.

- Asset criticality – a tool has been recently developed by three regional councils and *qldwater* to assist in assessing criticality of network and treatment assets. Criticality assessments represent a twin need, along with condition assessments, to determine asset risk, and prioritise maintenance, repair and renewal. QWRAP research is testing the applicability of the tool to small regional councils and communicating the importance of criticality assessment.
- Benefits capture realisation – a Benefits Capture Framework developed by RDMW is currently being trialed across the five high-maturity QWRAP regions. Research commenced in June 2021 applying the framework to a range of historical QWRAP projects to create an independent, consistent assessment of benefits as well as providing recommendations for improvement of the Framework.