

# Queensland bulk water opportunities statement

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Part B: 2022 Program update

CS10466 12/22

### **Acknowledgement of Country**

The Department of Regional Development, Manufacturing and Water acknowledges and pays respect to Aboriginal peoples and Torres Strait Islander peoples as Traditional Owners and the original custodians of Queensland's land and waters.

Front cover image: Teemburra Dam. Image courtesy of Sunwater

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Irrigated avocado production



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# 1. Introduction

The Queensland bulk water opportunities statement (QBWOS) outlines the Queensland Government's framework for sustainable regional economic development through better use of existing bulk water infrastructure and prudent investment in new infrastructure. Five years on since its initial release, the QBWOS continues to facilitate discussion with the community and the water sector about water security in Queensland – including optimising efficient, beneficial use of existing supplies and planning for future bulk water infrastructure investments which could support growth and economic development in regional communities. QBWOS is presented in two parts with supporting digital products.

**Part A: Strategic Framework** articulates the Queensland Government's framework for sustainable regional economic development through better use of existing bulk water infrastructure, and effective investment in new infrastructure. Part A provides:

- the Queensland Government's objectives for bulk water supply
- the strategic principles that guide Queensland Government investment in proposed new bulk water supply infrastructure
- critical context and background including:
  - the policy environment, planning complexities, risks and general considerations
  - a description of bulk water entities and their infrastructure
  - the roles and responsibilities of various entities.

**Part B: Annual Program Update** (this document) presents an annual update on:

- key infrastructure projects, policy initiatives and opportunities to support achievement of the state's bulk water objectives
- where water is located in the state, including current volumes and types of water entitlements, unallocated water reserves and the volumes of water taken by customers from bulk water infrastructure.

The QBWOS story map is an online visualisation platform that provides access to the material presented in QBWOS including current project activity across Queensland against a backdrop of bulk water supply infrastructure. It also provides details of water entitlements, availability and recent usage. The bulk water infrastructure layer in the Queensland Globe provides key information for Queensland bulk water supply infrastructure against a graphical display background.

The Department of Regional Development, Manufacturing and Water (DRDMW) has current responsibility for water planning, policy and programs, including the QBWOS.



Rookwood Weir

## Queensland bulk water supply objectives

1. Safety and reliability of dams and urban water supplies
2. Use existing water resources more efficiently
3. Support infrastructure development that provides a commercial return to bulk water providers
4. Consider projects that will provide regional economic benefits



Increasing priority

## Strategic principles for Queensland Government investment in proposed bulk water supply infrastructure

1. Queensland Government investment should only address a market failure that cannot be addressed by proponents, local governments or other stakeholders. If projects are economically beneficial but not commercially viable, Queensland Government investment should be considered on a case-by-case basis. These investment decisions will be consistent with the state's budget constraints and other government priorities.
2. Proposed investments should provide the highest net benefit of all options considered according to best practice assessment of proposals, including options analysis, demand assessment, transparent cost sharing and cost-benefit analysis.
3. Economic assessments that underpin potential investment in new water infrastructure should:
  - a. consider environmental and social implications using the best available information
  - b. consider the potential wider benefits to the Queensland community
  - c. systematically address risks, including the risk of overestimation of benefits such as forecast revenues and wider benefits to the community.
4. For proposals with a significant urban supply component, there should be a local government financial contribution as a default.
5. For proposals with a significant industrial or agricultural component, there should be strong private sector support with financial contributions if appropriate.
6. Projects should align with the National Water Initiative principles, including appropriate cost recovery. If full cost recovery is not deemed feasible (including capital), any federal, state or local government subsidies should be transparent to the community.
7. If the Queensland Government makes the majority investment in infrastructure, it should own and manage the assets either directly or through its statutory authorities or government-owned corporations.

## 2. The year in review

In 2022, much has happened that shapes how we make decisions to manage the state's water resources. As we started to emerge from the COVID-19 threat and commence our economic recovery, we were confronted with the very real impacts of climate change.

During the summer of 2021–22, Queensland experienced devastating floods across many communities, particularly in the southern part of the state where the townships of Maryborough and Gympie suffered major inundation, followed by Brisbane in late February. The damage was widespread and impacted families, businesses, not-for-profit organisations and primary producers across 39 local government areas. Against this backdrop, we had more than 40 per cent of the state drought-declared for all of 2022.

In 2022, the State Government launched the start of the formal Path to Treaty. In commencing the journey on the path to treaty readiness, the State Government accepted in-principle that First Nations peoples have continuing responsibility for their lands, seas, waters and air. This extends the acknowledgement of the rich cultural connection that Aboriginal and Torres Strait Islander communities have to their waterways and seas.

In part, as a response to shifting and emerging priorities, the Department of Regional Development, Manufacturing and Water (DRDMW) realigned its business functions and team structures to give elevated significance to how we respond to the effects of climate change on our water resources, how we protect the security of water supplies for our urban communities, and how we engage with First Nations peoples in decision making for our water resources, particularly the protection of cultural values and the provision of water for cultural uses.

Looking forward, 2022 saw planning commence for the first review of the *Queensland Bulk Water Opportunities Statement Part A: Strategic Framework*. Work on the review will accelerate in 2023, with the intention to publish a refreshed and broadened strategy in late 2023. The refreshed strategy will position our water sector to address the challenges of the next 5 years and enable us to take advantage of opportunities to maximise the beneficial use of our water resources.

Table 1 provides highlights of the year's achievements. Details of all major bulk water initiatives follow throughout this Part B document, including updates on key infrastructure projects, policy and data initiatives that are being progressed.



Paradise Dam

**Table 1:** Highlights of 2022 bulk water projects, policy initiatives and opportunities

Bulk Water Objective	Project, policy initiative or opportunity
Safety and reliability of dams and urban water supplies	<ul style="list-style-type: none"> <li>• A number of dam safety improvements were completed including the essential safety works for Paradise Dam.</li> <li>• Construction of the Rookwood Weir progressed with the project on-track for completion in 2023.</li> <li>• Funding has been committed by the Queensland and Australian Governments for the Mt Morgan Water Pipeline project, and the Cairns Water Security Project Stage 1.</li> <li>• The Queensland Government committed to increased funding to \$2 million per year, on an ongoing basis, for the Queensland Regional Water Alliance Program (QWRAP).</li> <li>• 45 council projects focussed on town water supply and sewerage systems (outside South East Queensland) were announced as successful recipients of the \$70 million, Building our Regions (Round 6) funding.</li> <li>• Work has progressed on collaborative urban water security assessments for the communities of Banana, Baralaba, Biloela, Cardwell, Dalby, Goondiwindi, Innisfail, Moura, Nyleta, Theodore and Tully.</li> <li>• DRDMW published a template, guide and worksheets to assist water service providers to undertake their own water security assessments and develop water security statements.</li> </ul>
Use existing water resources more efficiently	<ul style="list-style-type: none"> <li>• On-ground works, planning and investigations have progressed for a range of water supply efficiency projects.</li> <li>• DRDMW continues to facilitate funding arrangements between the Queensland and Australian Governments and project proponents, to support delivery of projects to use our water resources more efficiently.</li> <li>• Funding has been committed by the Queensland and Australian Governments to the Lower Burdekin Rising Groundwater Mitigation Project.</li> <li>• A strengthened non-urban water measurement policy was announced by the State, to drive more accurate and timely measurement, recording and reporting of water take information.</li> <li>• A field trial was completed in the Queensland Murray-Darling Basin to test the cost, effectiveness and accuracy of different telemetry devices and options to support automated transmission of water data.</li> <li>• Implementation of the Queensland Water Market Optimisation action plan has continued with Seqwater, Sunwater and DRDMW all now publishing up-to-date information on temporary water trades (seasonal water assignments).</li> <li>• Sunwater has released a water trading board to help connect water buyers and sellers, developed with financial support from DRDMW.</li> <li>• DRDMW made more than 110,000 megalitres per annum of unallocated water reserves available to the community. Further releases are in progress in the Flinders River catchment, the Gulf, the Western Great Artesian Basin and the Logan River catchment. Unallocated water has also been made available to First Nations peoples to support cultural values and uses.</li> <li>• DRDMW has estimated there is up to 788,000 megalitres per annum of underutilised supplemented water in the state's supply schemes, supported by dams and weirs.</li> <li>• A suite of techniques has been developed and tested to estimate volumes of underutilised unsupplemented water in management areas across the state. Consultation and method refinement is ongoing.</li> </ul>
Support infrastructure development that provides a commercial return	<ul style="list-style-type: none"> <li>• Sunwater is continuing to develop its strategic outlook for future infrastructure and initiative investments with its Regional Blueprint and Master Plan.</li> </ul>
Consider projects that will provide regional economic benefits	<ul style="list-style-type: none"> <li>• The State allocated \$5.5 million over 4 years to develop a Strategic Water Infrastructure Plan and pipeline of projects.</li> <li>• The Queensland Government released its response to the Report of the Bradfield Regional Assessment and Development Panel and accepted or accepted in-principle all recommendations.</li> <li>• Regional Water Assessments for the Southern and Darling Downs, Tablelands, and Bundaberg and Burnett regions are all well progressed.</li> <li>• DRDMW continues to facilitate funding arrangements between the Queensland and Australian Governments and project proponents, to support delivery of water supply projects for economic development.</li> </ul>

## 3. Safety and reliability of dams and urban water supplies

The Queensland Government's priority objective for bulk water supply is the safety and reliability of dams and urban water supplies. All referable dams in Queensland are subject to regulation to achieve and maintain ongoing good practice in dam safety management over their entire life. As a dam owner, the Queensland Government has an obligation to keep its own dams safe, consistent with national standards and regulated requirements including those described in the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act). The Water Supply Act also protects community interests by establishing obligations for water service providers to deliver safe water and ensure continuity of supply. This section summarises key initiatives related to dam safety (Section 3.1) and urban water security (Section 3.2).

### 3.1 Keeping our dams safe

There have been significant changes in circumstances, technology and risk assessment methods since some of our older dams were built. These changes include increased populations downstream of dams, revised forecasts of extreme rainfall events and advances in dam design and construction techniques. As a result, significant capital investment may be needed to ensure some of the dams owned by the state's bulk water entities, continue to meet modern safety standards. The Department of Regional Development, Manufacturing and Water (DRDMW) acts as the Dam Safety Regulator for referable dams in the state. DRDMW aims to continuously improve how it collects and uses information from dam owners to manage risks to dam safety. Since 2021, the department has implemented all the improvements identified by the Queensland Audit Office.

The Queensland *Guidelines on Safety Assessments for Referable Dams (2021)* describe the evaluation of dam safety risks at referable dams, whether those risks are acceptable, and remediation of any identified deficiencies including recommended timelines for spillway upgrades and circumstances requiring a reduction of full supply level at a dam. The guidelines were previously titled *Guidelines on Acceptable Flood Capacity for Water Dams*. The new guidelines broaden consideration to the overall dam failure risk, rather than focus solely on spillway capacity. The new guidelines allow dam owners to consider a staged approach to dam safety upgrades, prioritised according to risk. All owners of dams, to which the guidelines apply, are required to complete upgrade works in a justifiable, timely manner that is documented in an upgrade report submitted to the regulator annually.

Table 2 provides progress updates for key dam safety projects for dams owned by the state's bulk water entities. Projects that have not entered the investigation phase are yet to be listed, but will be at an appropriate time, consistent with the dam's risk profile and aligned with the relevant guidelines. Independent of the program of safety upgrades, all referable dams in the state are monitored, inspected and reviewed regularly to ensure compliance with required asset condition schedules, guidelines and standards. All financial commitments are subject to the usual approval processes including during the investigation and planning phases.

**Table 2: Key dam safety projects**

Project name	Proponent	Purpose	Status
<b>Projects recently completed</b>			
Paradise Dam – Essential Works	Sunwater	Short-term risk reduction works to improve safety while longer-term remediation plans are confirmed. Includes activities to lower the dam spillway and strengthen the structure.	Key dam safety works are complete including, lowering the primary spillway, installing passive anchors to strengthen the dam wall, construction of a new crest, apron extension works to provide interim protection against scour, and construction of a new downstream fishway entrance. Final testing and commissioning of the new fishway entrance is ongoing. Further works will follow as part of the Paradise Dam Improvement Project.
Fred Haigh Dam Flood Repairs – Stage 2	Sunwater	Development and implementation of a long-term strategy for flood remediation of the dam spillway, following from the Stage 1 works that were completed in 2020.	A risk assessment of the downstream channel was completed in December 2021. Following the CRA completion in 2022, the risk rating for Fred Haigh Dam is above the limit of tolerability. Sunwater has reviewed the recommendations and is now progressing development of a PBC.
Awoonga Dam Spillway Apron Slab Repair	Gladstone Area Water Board	The project will protect the spillway toe from erosion and cavitation damage.	Detailed design and construction scope of works was completed in 2021. The construction works were completed in December 2021.
Awoonga Dam 20 Year Dam Safety Review	Gladstone Area Water Board	The Safety Review ensures compliance with guidelines and safety conditions.	The dam safety review works are completed. The final report was submitted to the Dam Safety Regulator in September 2022.
<b>Projects with ongoing investigations and planning</b>			
Awoonga Dam Spillway Capacity Upgrade – Stages 2 and 3	Gladstone Area Water Board	Upgrade to the spillway to address identified dam safety risks.	The concept phase is completed. This project is in the preliminary design phase. The project is planned to be completed by mid-2025.
Lake MacDonald (Six Mile Creek) – Dam Upgrade	Seqwater	Dam safety upgrade to embankment and spillway.	Detailed design was completed in 2019. In 2020, during the procurement stage, it emerged that project costs would be significantly higher than the approved \$127 million budget. The investment decision is currently being reassessed to ensure prudence while also meeting dam safety, water security, environmental and community objectives. The options re-assessment is expected to be completed in late 2022. The upgrade remains a high priority project under Seqwater's Dam Improvement Program.
North Pine Dam – Safety Upgrade Project	Seqwater	Flood capacity upgrade and strengthening of dam structure.	A reduced full supply level was enacted in December 2019, equivalent to about 68 per cent capacity. Seqwater is now progressing an options analysis and investigations to identify preferred upgrade and risk mitigation options.
Somerset Dam Improvement Project	Seqwater	Dam safety upgrade to dam and spillway.	A reduced full supply level was enacted in late 2020, equivalent to 80 per cent capacity and the full supply level of Wivenhoe Dam was also lowered, equivalent to 90 per cent capacity, until completion of dam safety works at Somerset Dam. A DBC is underway, with supporting investigations continuing through 2022.

Project name	Proponent	Purpose	Status
<b>Projects with ongoing investigations and planning</b>			
Wivenhoe Dam – Safety Upgrade Project	Seqwater	Dam safety upgrade to dam and spillway, also considering enhanced flood mitigation capability.	Planning for the project is in the early stages pending completion of the Somerset Dam DBC.
Burdekin Falls Dam Improvement Project	Sunwater	Improvements to ensure the dam is brought in line with modern engineering standards and to increase the dam’s resilience to extreme weather events.	In late 2021, a DBC was completed which considered dam safety upgrades as well as options to raise the dam wall and increase storage capacity. Sunwater is now progressing an EIS which will be considered along with the DBC before a final investment decision is made on a future dam upgrade.
Callide Dam Improvement Project	Sunwater	The project will determine if there is a need for dam safety upgrades to ensure safety standards continue to be met.	Following the CRA completion in 2022, the risk rating for Callide Dam is above the limit of tolerability. Sunwater has reviewed the recommendations and is now progressing development of a PBC.
Coolmunda Dam Improvement Project	Sunwater	The project will determine if there is a need for any dam improvement works to ensure safety standards continue to be met.	The CRA was completed in July 2022. Sunwater is currently reviewing the recommendations, with further investigation and action to be taken when possible.
Fairbairn Dam	Sunwater	The project will determine if there is a need for any dam improvement works to ensure safety standards continue to be met.	Following the CRA completed in 2022, a project was initiated to undertake further investigations to better assess the safety risk of the dam and determine the need for upgrades. Investigation work is also underway to assess artesian water pressures in the dam spillway foundations.
Kroombit Dam Improvement Project	Sunwater	The project will determine if there is a need for any dam improvement works to ensure safety standards continue to be met.	Following the CRA completed in 2022, a project was initiated to further investigate the key issues that contributed to the variation in life safety risk and determine the need for upgrades. Sunwater will undertake concrete sampling and analysis of the spillway section. Investigation works are planned to be completed in 2023 at which time the CRA will be updated.
Paradise Dam Improvement Project	Sunwater	The project will ensure the dam meets safety standards and water security objectives. Activities will include further stabilisation and strengthening of the primary and secondary spillways including mass concrete buttressing and extended protection of the downstream riverbed. The dam will be returned to its original height.	Since 2020, the following works have been completed — a preliminary options assessment, investigations to inform long-term remediation works, an assessment of future water demand and broader economic benefits, and an options evaluation. Sunwater is now progressing planning and approval activities in preparation for enabling works to commence in 2023, with major dam construction activity expected to commence in 2024.
Teemburra Dam Improvement Project	Sunwater	The project will determine if there is a need for any dam improvement works to ensure safety standards continue to be met.	In 2021, geotechnical investigations around Saddle Dam 2 were completed. The CRA was completed in June 2022. Sunwater has reviewed the recommendations and is now progressing development of a PBC.

CRA – Comprehensive Risk Assessment; DBC – Detailed Business Case; PBC – Preliminary Business Case; EIS – Environmental Impact Statement

## 3.2 Supporting safe and reliable urban water supplies

Responsibility for ensuring communities have access to safe, secure and affordable town water supplies generally sits with local governments. The Queensland Government recognises the benefits of supporting the capability and capacity of local governments to deliver secure urban water supplies by understanding and mitigating water-related risks, enhancing resilience and better managing the impacts of floods and droughts on urban communities. The State provides a range of supports to local governments to meet their water security obligations including technical support for water security assessments, technical and financial support to plan and implement solutions to manage water security risks (infrastructure and non-infrastructure), financial support for disaster preparation and recovery, and financial incentives to support employment in water-related service provision roles.

### Queensland Water Regional Alliance Program

The Queensland Water Regional Alliance Program (QWRAP) is an industry-led initiative to support collaboration on water and sewerage service delivery in regional Queensland. The program seeks benefits of collaboration by supporting regional level economies of scale and scope to be created that would otherwise not be available to individual local governments. The program is a partnership between the Local Government Association of Queensland, Queensland Water Directorate (*qldwater*), the Queensland Government (through DRDMW) and local government councils. Four new regions (the latter 4 on the below list) joined the program in 2022, bringing the total number of participating councils to 57 across 9 regions:

- Far North Queensland Regional Organisation of Councils
- Remote Area Planning and Development Water and Sewerage Alliance
- Wide Bay Burnett Urban Water Alliance
- Downs Urban Water Technical Group
- Whitsundays, Isaac, Mackay Water Alliance
- Southwest Queensland Water and Sewerage Alliance

- North Queensland Regional Organisation of Councils
- North West Queensland Regional Organisation of Councils
- Central Queensland Regional Organisation of Councils

In late 2021, the Queensland Government committed to funding QWRAP on an ongoing basis, after the current 4-year program (2018–22) ended in June 2022. Program funding was also increased from \$1.05 million per annum to \$2 million per annum from 1 July 2022 onwards. Funding is provided through a bid pool that participating councils can access to support high priority collaboration opportunities. Access to the bid pool requires matching funding from local governments, but to date the State's contributions have been far exceeded by the contributions from local governments. Funding has been used to address gaps in workforce capacity and capability, operational processes, data and systems; and providing opportunities for greater purchasing power, cost savings and sharing of staff and resources. The 2021–22 funded projects ranged in scope from expansion of water industry training programs to joint asset management and research into biosolids management. QWRAP has further demonstrated its value during the COVID-19 crisis period by providing ready access to trusted networks to share information and experiences; and providing mutual aid such as sharing staff, supplies and equipment.

### Urban water security assessments, planning and innovation

Urban water supply planning should be timely, cost-effective and appropriate for a community's needs. In South East Queensland (SEQ), Seqwater is responsible for long-term water security planning for the region and works within the framework established by the State to achieve this. Outside SEQ, the responsibility for urban water supply planning generally lies with local governments. DRDMW has published a suite of [guidelines](#) that describe what it considers is the minimum standard for water security planning for urban communities outside of SEQ for asset management, water supply planning, level of service objectives and drought response.

DRDMW partners with local governments to undertake urban water security assessments and support planning so that urban water needs and security risks are better understood and managed. Building on the local knowledge of service providers, these assessments provide a shared understanding of risks to current and future water supply security in towns and cities across the state to inform decision-making and planning for the future. No collaborative Urban Water Security Assessments were published in 2022. Work is currently progressing on assessments for the communities of Banana, Baralaba, Biloela, Cardwell, Dalby, Goondiwindi, Innisfail, Moura, Nyleta, Theodore and Tully. Work has also commenced on a review of the Hervey Bay Regional Water Supply Security Assessment, which was published in 2015. A full list of the published collaborative assessments is available on the [Business Queensland website](#).

In late 2021, DRDMW published a template, guide and worksheets to assist water service providers to undertake their own water security assessments and develop water security statements that they can share with their communities. DRDMW continues to provide [demand management advice](#) and assistance to water service providers. Through the [Waterwise](#) program, there is a range of resources available to help raise water-awareness and promote efficient use of water in homes, gardens, schools and in the general community.

## Funding for urban water security

The State Government's [Grants to Local Government Model](#) provides a simplified and coordinated approach to make it easier for local governments to apply for grants. Funding programs that were current during the 2021–22 financial year and were available to support local governments to provide safe, reliable and secure urban water supplies include the following (listed by regions where they apply):

- All of Queensland:
  - Local Government Grants and Subsidies Program (LGGSP) — a competitive grant program available to all Queensland local governments with the primary aim to deliver priority infrastructure and essential services that meet the identified needs of their communities.
  - Queensland Resilience and Risk Reduction Fund (QRRRF) — a competitive funding program that aims to reduce, mitigate and manage risks of disasters and to improve community resilience through infrastructure and non-infrastructure projects. This fund is administered by the Queensland Reconstruction Authority.
  - Get Ready Queensland — a competitive program aimed at engaging communities to understand disaster risk and increase resilience by better preparing for severe weather and disasters. This fund is administered by the Queensland Reconstruction Authority.



- Regional Queensland (excluding SEQ and Toowoomba):
  - Building our Regions (Round 6) — a competitive program aimed at delivering enduring economic benefits for regional communities by supporting eligible local governments to invest in job-creating infrastructure projects.
  - Works for Queensland program (W4Q) — a non-competitive program that supports local governments to undertake job-creating maintenance and minor infrastructure projects.
- South East Queensland communities:
  - South East Queensland Community Stimulus Program — a mixed program with base and competitive funding aimed at fast-tracking investment in new infrastructure and community assets that create jobs and deliver economic stimulus to local communities.
  - Unite and Recover Community Stimulus Package (SEQCSP) — a mixed package with base and competitive funding aimed at assisting communities to respond to and recover from the COVID-19 pandemic by supporting local governments to invest in new infrastructure and community assets that create jobs and deliver economic stimulus to local communities.
- Indigenous communities:
  - Indigenous Economic Development Grant (IEDG) — a non-competitive program that contributes funding towards service positions within eligible local governments to support permanent jobs that deliver local government services.
  - State Government Financial Aid — a non-competitive program provided to Indigenous Councils, in lieu of rates, to assist in the delivery of essential local government services.
  - Indigenous Councils Critical Infrastructure Program (ICCIP) — a program that provides financial support to deliver infrastructure projects relating to critical water, wastewater and solid waste assets that were identified from asset condition reviews conducted in 2016.

Building our Regions (Round 6) is particularly relevant to delivering safe and reliable urban water supplies. Building our Regions (Round 6) is a competitive funding program aimed at supporting local governments outside of SEQ to deliver infrastructure projects that improve town water supply and sewerage systems. It is providing \$70 million over 3 years — broken into 3 categories based on local government size (very small/small, medium and large). While primarily targeting construction projects, the Round 6 program also provides funding to support project planning for local governments in the very small to small category. In mid-2022, successful applicants were notified for 35 planning projects; and in late 2022, successful applicants were notified for 55 construction projects.



Burdekin Falls Dam

## Urban water security infrastructure

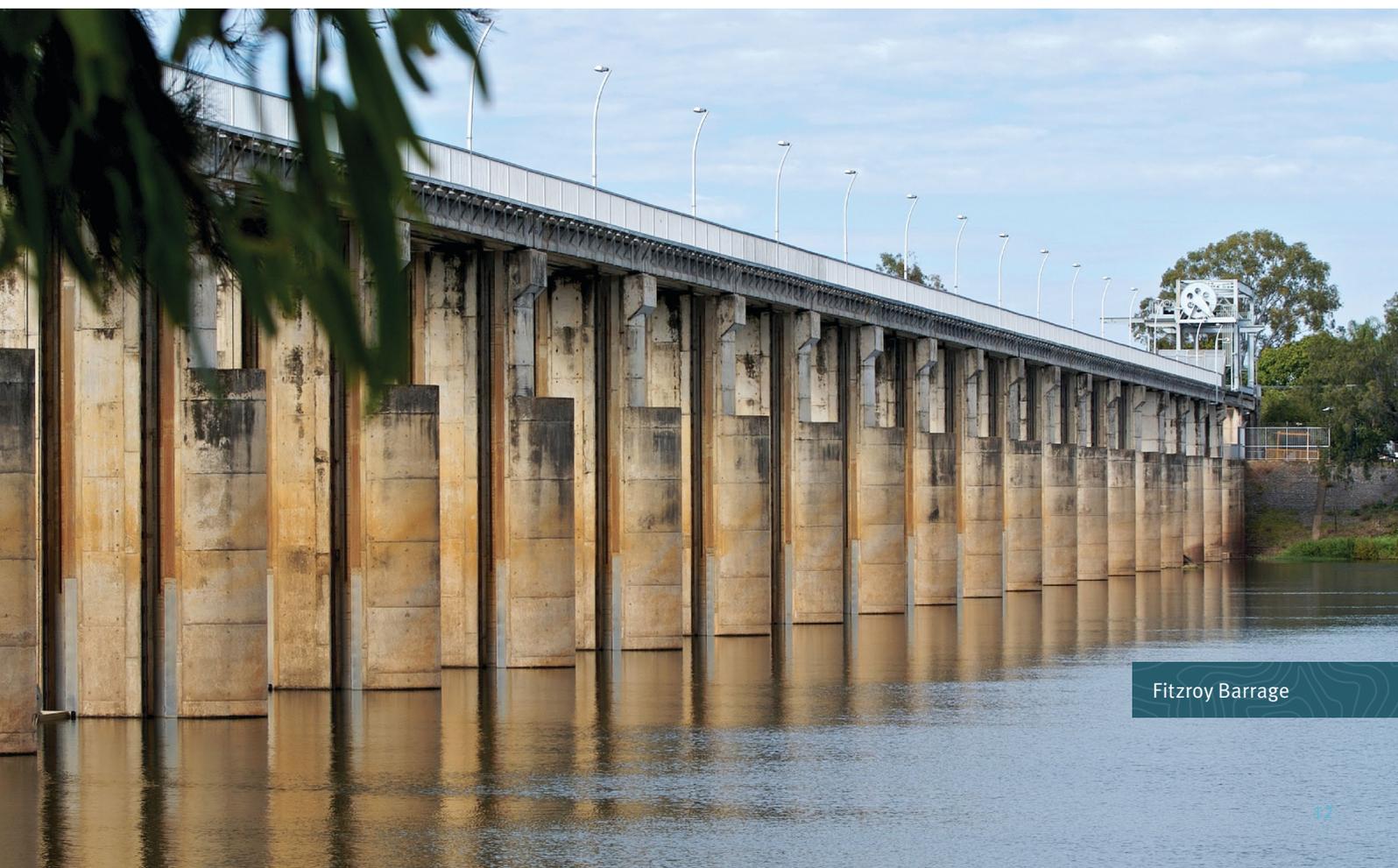
Table 3 summarises the status of major urban water security infrastructure projects occurring in the state. All financial commitments are subject to the usual approval processes including during the investigation and planning phases.

**Table 3:** Major urban water security infrastructure projects

Project name	Proponent	Purpose	Status
<b>Projects in construction</b>			
Rookwood Weir	Sunwater	A new weir located on the Fitzroy River above the existing Eden Bann Weir to provide water to service agriculture, industry and urban customers in the Rockhampton, Gladstone and Capricorn Coast areas.	\$367.2 million has been committed to construction by the Queensland and Australian Governments (\$183.6 million each). In 2021, several road upgrades and the new Riverslea Bridge were completed, in-river construction of the weir commenced, and amendments were finalised to the Fitzroy Basin Water Plan and Fitzroy Basin Water Management Protocol, to support the project. In 2022, planning and construction of supporting projects was progressed, and work has continued on the operational instruments for the Rookwood Weir Water Supply Scheme. The project is on-track for completion in 2023.
Hughton Pipeline Project	Townsville City Council	Duplicates the Hughton Pipeline that connects the Burdekin River to the Ross River Dam. The project will enhance Townsville's water security by providing greater capacity to augment supplies in Ross River Dam during periods of very low rainfall. Stage 1 is a 36.5km pipeline and Stage 2 is a 33km pipeline and pump station. Both stages are required to access and convey water from the Burdekin River to the Ross River Dam.	\$420 million has been committed by the Queensland Government comprising \$215 million for Stage 1, \$195 million for Stage 2 and \$10 million for demand management programs. Stage 1 was completed in 2021. Stage 2 is currently in the design and approvals phase. Installation of the Stage 2 pipeline is likely to commence mid-2023, with commissioning expected in 2025.
<b>Projects with ongoing investigations and planning</b>			
Cairns Water Security Project – Stage 1	Cairns Regional Council	An integrated project to access strategic water reserves in the Mulgrave River at Gordonvale with associated intake, treatment and distribution infrastructure. The Project will secure water supplies for the growing Cairns community.	\$214 million has been committed by the Queensland and Australian Governments (\$107.5 million each) to Stage 1 works. The Cairns Regional Council has committed \$27.6 million to pre-construction works. A strategic assessment, options analysis and procurement strategy are complete. DRDMW is progressing amendments to the water management arrangements to support the project. A DBC is in preparation. Construction is currently planned to occur over 2 years, with completion in mid-2026.
Fitzroy to Gladstone Pipeline	Gladstone Area Water Board	A 117km pipeline to transfer water from the lower Fitzroy River to Gladstone, with a treatment plant and pump stations. The project will provide an alternative source of water for Gladstone for drought contingency and address a long-term water security issue for the region. It will also meet the early-stage water demands of emerging hydrogen and decarbonisation-related industries in the area.	A detailed assessment of a unidirectional pipeline was completed in December 2021. Pre-construction activities on the pipeline are currently progressing. Additional studies on a bi-directional pipeline and additional water supply sources to support new and emerging industries are expected to be completed in late 2022.

Project name	Proponent	Purpose	Status
<b>Projects with ongoing investigations and planning</b>			
Mt Morgan Water Pipeline Project	Rockhampton Regional Council	Construction of a potable water pipeline connecting the Gracemere and Mt Morgan water supply networks. This will provide a secure water supply for the Mt Morgan community.	\$40.4 million has been committed by the Queensland Government and \$3.5 million has been committed by the Australian Government. A business case was completed in mid-2022. Detailed design and approvals are underway. Construction is planned to be complete by late 2024.
Toowoomba to Warwick Pipeline	Seqwater	A pipeline extending the existing Wivenhoe to Cressbrook pipeline through to the Southern Downs region. The project will provide drought contingency supply for residents in the Southern Downs Regional Council and a permanent water supply to Toowoomba Regional Council communities of Cambooya, Nobby, Greenmount and Clifton.	\$300 million in funding was confirmed by the Queensland Government in 2022 for construction of the pipeline.  As part of the Southern Downs Drought Resilience Package, detailed design was completed (including public consultation) and pre-construction activities were progressed. The current proposed completion date is mid-2026, subject to consultation with Toowoomba and Southern Downs Regional Councils.

DBC – Detailed Business Case



Fitzroy Barrage

## 4. Using existing water resources more efficiently

The Queensland Government's second priority objective for bulk water supply is to use existing water resources more efficiently. Significant volumes of uncommitted, underutilised and unallocated water are currently available in Queensland that could be used for economic development without the need to construct new bulk water supply infrastructure. Governments at every level are experiencing fiscal constraints, and a prudent response is to make fuller and better use of the substantial volumes of available water resources and existing bulk water supply infrastructure, before investing in new infrastructure. This section provides updates to major efficiency projects that aim to maximise access to our existing bulk water resources (Section 4.1) and summarises key initiatives in progress to provide better access to water information, entitlements and unallocated reserves (Section 4.2).

### 4.1 Water supply efficiency projects

Table 4 provides updates to major water efficiency projects that were recently completed, in construction, have ongoing investigations and planning, or are awaiting triggers to progress. These projects aim to modernise, enhance and expand existing water supply infrastructure to maximise access to our existing water resources. Most of the projects have received funding under Queensland Government programs and/or Australian Government programs such as the National Water Infrastructure Development Fund (NWIDF) and the National Water Grid Fund (NWGF). Department of Regional Development, Manufacturing and Water (DRDMW) will continue to facilitate funding arrangements to support delivery of project activities. All financial commitments are subject to the usual approval processes including during the investigation and planning phases.



Lake Moogerah Dam

**Table 4: Major water supply efficiency projects**

Project name	Proponent	Purpose	Status
<b>Projects recently completed</b>			
Mareeba-Dimbulah Water Supply Efficiency Improvement Project	Sunwater	The project focus is on balancing storages, regulating gates and a pressurised pipeline to improve operating efficiency and reduce water losses by about 8,300ML/a.	Works commenced in 2019 and all sub-projects are now complete. Activity to monitor and verify the water savings is ongoing. Total project cost was \$32.5 million, of which Sunwater invested \$20.9 million to supplement \$11.6 million of NWIDF funding.
<b>Projects in construction</b>			
Warwick Recycled Water for Agriculture	Southern Downs Regional Council	Expansion of the existing Warwick recycled water supply, including upgrading of treatment capability. The project will deliver recycled water to agricultural and industrial areas.	Stage 1 works, funded by Queensland Government Building our Regions Fund are expected to be complete by late 2022. Stage 2, co-funded by the council and the Australian Government through the NWIDF, was completed in early 2021. Stage 3 works commenced in early 2022 and are expected to be complete in mid-2023. Stage 3 has received \$480,979 of capital funding through the Australian Government NWGF.
<b>Projects with ongoing investigations and planning</b>			
Bundaberg Water Supply Scheme Capacity Constraints	Sunwater	To alleviate network constraints so that distribution of water can keep pace with demand.	An initial investigation has been conducted to identify and prioritise works required to alleviate capacity constraints. Sunwater will develop a business case for further action.
Burdekin Haughton Water Supply Scheme Modernisation	Sunwater	This project will upgrade aging infrastructure and technology to improve operational visibility, increase efficiency and reduce operating risks. Losses saved will be converted to saleable allocations.	Work has commenced on development of a DBC, which is expected to be completed by mid-2023. The DBC has received a funding commitment of \$1.907 million from the Australian Government's NWGF.
Lower Burdekin Rising Groundwater Mitigation Project	Sunwater	The project will use a range of measures to mitigate and counter the threat of rising groundwater levels and high salinity in the Burdekin Haughton Water Supply Scheme.	The project is being funded by \$12.5 million from the Queensland Government and matched funding from the Australian Government. The project is expected to be delivered over 4 years. Investigation activities are underway with construction planned to commence by late-2023.
<b>Completed investigations with projects awaiting triggers</b>			
South East Queensland Treated Effluent for Agriculture — NUWater	Queensland Farmers' Federation	The project considered how to make recycled water available to the Lockyer Valley and Darling Downs agricultural areas, including consideration of water from the Western Corridor Recycled Water Scheme.	The PBC is complete. The costs outweigh the benefits, at this time.

DBC – Detailed Business Case, PBC – Preliminary Business Case; NWIDF – National Water Infrastructure Development Fund (Australian Government), NWGF – National Water Grid Fund (Australian Government)

## 4.2 Better access to water information, entitlements and reserves

Under the Rural Water Futures program, the Queensland Government is continuing to deliver a comprehensive and integrated program of work that provides better access to high quality water data, more visible and consistent decisions about water management and improved customer experience. The Rural Water Futures program is managed by DRDMW with financial contributions from the Australian Government through the Murray-Darling Basin Authority and the Murray-Darling Basin Communities Investment Package.

### Strengthened water measurement

Knowing how much water is being extracted each year is essential for effective water resource management. It is critical that the take of water is accurately measured so that sustainable diversions are made from water resources and to ensure all water users receive their fair share in accordance with entitlement conditions and legislative requirements. A key deliverable under Rural Water Futures in 2022 was the completion of a strengthened Queensland **non-urban water measurement policy**. It was developed over 3 years following extensive stakeholder consultation and states how the Government intends to improve the way non-urban water take is metered, measured and reported across Queensland. The policy will drive more accurate and timely measurement, recording and reporting of water take information. This will provide greater transparency and assurance that water is being managed sustainably for the benefit of all Queenslanders. The policy will be implemented using a risk-based approach, and will account for government commitments and water plan requirements. New measurement requirements will be implemented in areas where the water resource is at the highest risk first, such as where water resources are fully, or near-fully allocated, including in the Queensland Murray-Darling Basin. Legislative changes will be required to support implementation of some policy elements. These are being progressed in stages, with the first stage of amendments introduced in October 2022, and the second stage planned for 2023. The **implementation plan** has been published and progress will be reported annually. Further information is available on the [DRDMW website](#).

### Innovative measurement approaches

Innovative approaches to measurement are also being explored to allow us to understand the most effective ways to gather water information, and how we can best share that information between government and water users. In 2022, a telemetry field trial was completed in the Queensland Murray-Darling Basin. Over 10 months, 47 telemetry devices were installed on water meters at 11 sites, to test the cost effectiveness and accuracy of different telemetry devices and transmission options. Telemetry allows rapid, automated transmission of water data and is an effective way of improving the accuracy and frequency of meter read data. The trial confirmed that telemetry data can be successfully captured, transmitted, stored and used by DRDMW to support water resource management. Work is now underway to build on the telemetry trial results, with the findings used to inform the development of telemetry standards and an implementation approach that will allow irrigators to further develop the systems they already have installed on farm or implement new systems. Funding of \$3.7 million from the Australian Government-funded Telemetry Subsidy Program will be used to support water entitlement holders to install compliant telemetry devices in the Queensland Murray-Darling Basin. In 2022, expressions of interest were being taken from unsupplemented surface water entitlement holders, in high-risk water management areas within the Queensland Murray-Darling Basin. The program will be delivered by April 2024. Other related projects currently progressing include:

- a pilot of a water balance calculator that can be used by water users to more easily calculate the volume of overland flow water taken under overland flow licences to support **more accurate measurement of overland flow** take in the Queensland Murray-Darling Basin.
- investigations into the application of **remote sensing technology** to measure water flow and storage in the Northern Murray-Darling Basin and improve public confidence in the sustainable use of our cross-border water resources.

## System and technology enhancements

Complimentary to the policy work progressing, there are technology and digital solutions also being developed to ensure that customers and the community have better access to accurate and timely water information and services. In 2022, DRDMW appointed a technology partner to support delivery of the Water Information Queensland (WaterIQ) program of cloud-based tools which include a customer portal and mobile app. These projects will harness existing data from a range of sources and make it easier for water customers to provide information about their usage. Rural water users will be able to input water meter readings via an application, streamlining the current process and saving time. Entitlement holders will be able to access the details of their entitlements more easily now and in the future. Water market information may be available through these same applications. Improvements are also being progressively made to tools and processes within DRDMW to improve efficiency, reduce red-tape and support more effective compliance management.

## Optimised water markets

Approximately 71 per cent of the water entitlements in Queensland are issued as tradeable water allocations. Permanent trading of water allocations involves the transfer of a water allocation title, similar to the sale of a land title. These dealings must be registered in the Water Allocations Register and may need to be approved by DRDMW.

Seasonal water assignments are temporary trades of water that occur within a water year, allowing some or all of an entitlement to be assigned to another person or place. Both supplemented and unsupplemented water can be seasonally assigned but different processes and rules apply in each management area. Temporary trades are approved by the holder of the Resource Operations Licence (ROL) for a supplemented scheme and by DRDMW for unsupplemented water.

The Queensland government recognises that optimised water markets are essential to Queensland's regional economic development. Efficient water markets will help maximise the opportunities available from our water resources and water supply infrastructure now and into the future. The [Queensland Water Market Optimisation \(QWMO\)](#) action plan, published in 2021, aims to encourage increased trade of unused water, help investors find water for development or expansion, improve visibility of market activity information, provide live and interactive mapping of water trading opportunities and help water users (buyers and sellers) to connect. In 2022, work continued on delivering against the initiatives described in the QWMO action plan. Recent activities include:

- Seqwater, Sunwater and DRDMW now publish up-to-date information on temporary trading (seasonal water assignments).
- DRDMW publish information monthly on permanent water trades that occurred in the state for both supplemented and unsupplemented water entitlements.
- DRDMW continues to support the Water Investor Hotline with advice and assistance to help business and investors access water in Queensland.
- Seqwater and Sunwater each provide access to a free online water trading bulletin board that will allow buyers and sellers to connect more easily, to facilitate temporary and permanent water trading. DRDMW provided financial support to the Sunwater project.
- DRDMW is progressing plans to deliver a bulletin board product to support trading of unsupplemented water in water management areas throughout the state. This work is planned to be complete during 2023.
- DRDMW has completed market research to better understand the types of information that existing and potential water users and investors want access to. The findings are informing development of a spatially based platform that will improve access to information and enhance the effectiveness of water markets in Queensland.

## Unallocated, underutilised and uncommitted water

In Queensland, water plans are developed under the [Water Act 2000](#) to sustainably manage and allocate water resources including rivers, lakes, springs, underground water and overland flow (rainfall runoff and floodwaters). The water plans aim to balance the needs of water users, First Nations peoples and the environment.

### **Unallocated water reserves**

Not all of the water identified in the water plans has been allocated yet – some is held in reserve for future use without compromising the security of existing users, the environmental or cultural values within the catchment. Table 10 provides a summary of the unallocated water reserves currently held by the State. Not all of the water plan reserves are available to all water customers and not all are suitable to support the development of future bulk water supply systems (dams, weirs and distribution channels), but where appropriate this water is being made available to meet demand.

In 2019, following amendments to the [Water Act 2000](#), DRDMW released 90,000 megalitres of water to allow temporary access (for up to 3 years) for unallocated water held as strategic water infrastructure reserve in the Dawson River catchment. Water licences were granted for 69,500 megalitres per annum, with these licences expiring on the 30 September 2022.

In August 2022, following a review of the temporary release and in consultation with water licence holders and other key stakeholders, DRDMW announced a further release for temporary access to 90,000 megalitres per annum of water from the strategic water infrastructure reserve in the Dawson River catchment for up to a further 3-year period.

In the past year, 110,000 megalitres per annum of unallocated water was made available within the Flinders River catchment, 2,900 megalitres per annum was granted from the general reserve in Baffle Creek and 250 megalitres per annum was granted from the Great Artesian Basin in the Lockyer Valley.

Further releases are in progress in the Flinders River catchment, in the Gulf (Gilbert, Norman, Leichhardt and Nicholson Rivers), the Western Great Artesian Basin and the Logan River catchment. Water has also been made available from the reserves to First Nations peoples to support cultural values and economic uses.

More information on unallocated water releases can be found at [Unallocated water, Business Queensland](#)

### **Uncommitted water**

Sometimes, supplemented water from dams and weirs that has been allocated for use in water supply schemes is not available to customers. For example there may be allocations set aside for losses through evaporation or seepage in distribution channels. In a small number of schemes, not all the available water has been committed to customers (assigned, sold, leased or contracted). If there is no demand, allocations may be held by the bulk water provider until customers need it.

In 2022 there was approximately 16,000ML per annum\* of uncommitted supplemented water. This represents about 0.5 per cent of the supplemented water that was available to customers. (Refer to Table 7 for more details).

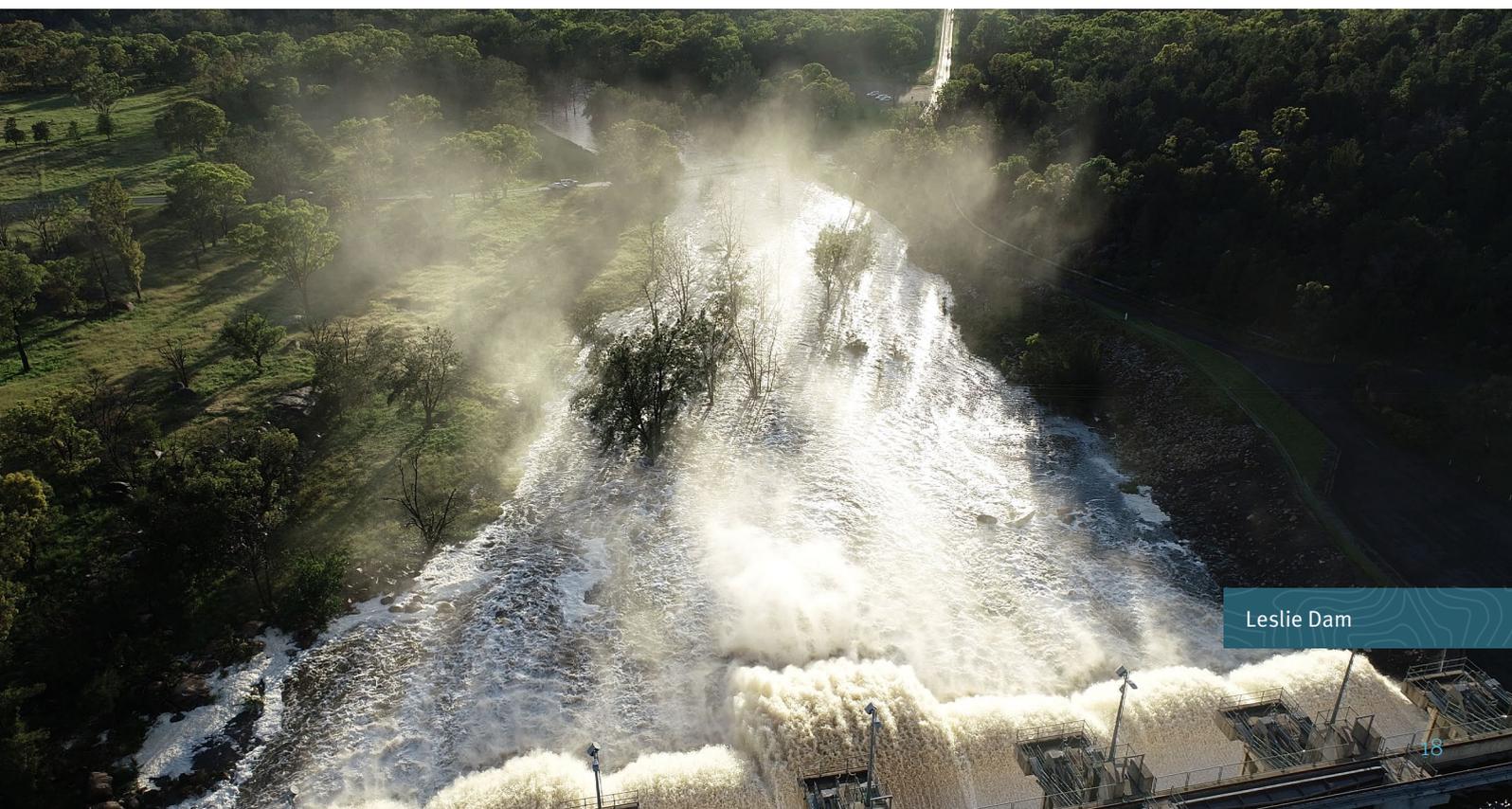
\* When Paradise Dam was lowered in 2019, approximately 100,000 megalitres per annum of uncommitted supplemented water was quarantined from commitment to water customers. When the dam is returned to its original height, these entitlements will again be available for purchase from the Bundaberg WSS.

### ***Underutilised water***

After an entitlement to take water is committed or granted to a customer through an allocation or licence, it is the customer's decision how much water they take. Not all entitlement holders use their full allowance every year, even when water is available. There are a lot of reasons for this including weather impacts on growing conditions, local and global commodity markets, access to labour, the ability to trade water entitlements, water market activity, access to alternative water supplies and risk management practices such as holding extra entitlements as insurance for periods of low water availability. Water is considered to be underutilised if it has not been used when it was committed to customers, it was allowed to be traded (permanently or seasonally), and it has had good availability for multiple past years (for example announced allocations above 90 per cent). Estimating volumes of underutilised water is complicated by the extent of water management arrangements in the state and access to historical data of suitable quality.

For **supplemented** water, there is a well-developed method for estimating underutilised water. In 2022, using the latest data available, it is estimated that there is up to 788,000 megalitres per annum of underutilised supplemented water in the state. This represents up to 25 per cent of all committed supplemented water allocations in the state. It is important to note that in areas where schemes supply urban communities, the values may be overestimated due to forced restrictions in response to drought. Some of the schemes with high estimates of underutilised water are – Bundaberg, Burdekin Haughton, Eton, Mareeba-Dimbulah, Mary Valley, Nogo Mackenzie, Pioneer River, Proserpine River and Upper Burnett. [Appendix A](#) contains further details on the estimated volumes of underutilised water in each water supply scheme.

For **unsupplemented** water, a suite of techniques has been developed and tested to estimate volumes of underutilised water in management areas across the state. We are currently focussed on identifying appropriate quality input data to support our analyses, as well as ongoing method refinement in consultation with our stakeholders. We plan to present findings from this work in the near future.



## 5. Supporting water infrastructure development

### 5.1 Supporting water infrastructure that provides a commercial return

The Queensland Government's third priority objective for bulk water supply is to support infrastructure development that provides a commercial return to bulk water providers. The Queensland Government supports commercially viable infrastructure development that does not place further burden on the State's budget. This section summarises how the costs and benefits of infrastructure proposals are assessed and how Sunwater is supporting development of commercially viable projects.

#### Best practice infrastructure assessment

Water infrastructure projects typically involve long-life assets that are complex and expensive to build, own and operate. They can have significant upfront costs that need to be balanced against broad economic, regional and community benefits extending over many decades. Queensland has a well-established project assessment framework to qualify and progress infrastructure development projects including those that target a commercial return.

The [Infrastructure Proposal Development Policy \(IPDP\)](#) sets out the arrangements for planning and assessing major infrastructure in Queensland. It supports and complements the guidance provided in the [Project Assessment Framework \(PAF\)](#), which applies to all statutory authorities. The [Business Case Development Framework \(BCDF\)](#) ensures a consistent and rigorous approach to proposal development, enabling decision-makers to compare investment opportunities. The Infrastructure Proposal Assurance Framework is also applied to proposals with an estimated capital cost of \$100 million or more. Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) provides advice to agencies regarding the application of the IPDP.

Government owned corporations such as Sunwater are also bound by a regulatory framework that includes state and federal legislation. Ministerial oversight arrangements also require that government owned businesses obtain approval for projects over certain thresholds before they can proceed.

An important step in progressing commercially viable projects is to ensure there is sufficient, stable and sustainable demand to justify proposed new infrastructure. DRDMW has developed a guidance document, [Assessing demand for water - Guidance for project proponents](#) to support evaluation and prioritisation of new bulk water infrastructure proposals for government consideration consistent with the PAF and BCDF. Further information on infrastructure planning and assessment is available from the [Department of State Development, Infrastructure, Local Government and Planning](#).

#### Sunwater Regional Blueprint and Master Plan

[Sunwater](#) is continuing to develop its strategic outlook for future infrastructure and initiative investments with its Regional Blueprint and Master Plan. By integrating insights from future water demand scenarios into its adaptive planning analysis, investment priorities are established with emerging drivers and trends, and future state objectives are identified to guide investment pathways. With investment roadmaps for the next 20–30 years, Sunwater is positioning its asset growth with pre-prepared information for business case delivery. The outcomes of this work inform Sunwater's strategic planning and support timely and well-founded decision making.

Since 2020, Sunwater has progressed demand and infrastructure assessments for the Lower Mary, Burdekin and Fitzroy regions. To align economic opportunities with stakeholder service needs, Sunwater has worked with customers, community groups, councils, industry groups and both State and Federal Governments to understand the water needs, opportunities and challenges facing the North, Central, Burnett, Lower Mary and South regions. Both the Sunwater Blueprint and the Master Plan are serving as valuable inputs into the State's Regional Water Assessments (refer Section 5.2) and assessments of projects that offer regional economic benefits. The Master Plan aligns with and supports Regional Water Assessments by determining the most suitable water supply options to maximise the benefit of existing water resources and infrastructure to meet growing demands. The delivery schedule for activities ensures the Master Plan process benefits from the Regional Water Assessments without duplication.

## 5.2 Projects that provide regional economic benefits

The Queensland Government's fourth priority objective for bulk water supply is to consider projects that will provide regional economic benefits. These projects are identified on a case-by-case basis through a standardised best practice assessment process. To be considered, they must provide significant economic benefits to the state over the long-term.

The **National Water Initiative** outlines that for new bulk water infrastructure, beneficiaries should pay the full cost of providing the infrastructure, including the costs of construction and a return on the investment. However, identifying beneficiaries can be complex and governments can have a role in facilitating and supporting projects that have broad economic and social benefits regionally or statewide. The key challenge for the State is ensuring that financial support is provided transparently, to the right projects and in the right circumstances; and that any State funding leverages other contributions to the extent possible. It is also important that delivered projects are reviewed once they are operational, to evaluate the benefits gained for the broader community and identify lessons to be applied to future projects. This section summarises how infrastructure proposals that are not commercially viable are assessed and prioritised, the new strategic water infrastructure plan and pipeline,

the regional water assessments program, and updates to major infrastructure projects that aim to provide regional economic benefits.

### The Strategic Water Infrastructure Plan and pipeline of projects

The Queensland Government understands the importance of water to communities and for driving regional economic growth, which is why it is progressing feasibility assessments for additional water supplies and investing in the construction of new bulk water supply infrastructure. Previously, the Bulk Water Prioritisation Project (BWPP) applied a robust, systematic framework to assess and prioritise water infrastructure to support regional economic development. In 2022, the State allocated \$5.5 million, over 4 years to develop a Strategic Water Infrastructure Plan and pipeline of projects (SWIPP). Some of the key concepts applied in the BWPP are now being expanded as part of developing the SWIPP.

In addition to existing planning initiatives already underway, the Strategic Water Infrastructure Plan (SWIP) and associated pipeline of projects will be able to guide the assessment and consideration of new bulk water projects and inform future bulk water infrastructure projects, particularly in regional Queensland. The intent of the SWIP is to inform investment decisions, guide project assessments, ensure Queensland's precious water resources are optimised and provide an overarching view of the bulk water capital portfolio. Consideration of important matters such as financial, economic, environmental, community and social outcomes will be part of this work. Another critical element of the SWIPP is to provide a programmatic view of the bulk water projects under consideration and assessment. SWIPP project planning and scoping is currently underway, and it is envisaged that the first iteration of the SWIP and pipeline would be ready for consideration by Government in 2023–24. The plan will link with existing frameworks and build on work already occurring, including: this Queensland Bulk Water Opportunities Statement, the Queensland Government's framework for best practice (refer Section 5.1), Sunwater planning activities (refer Section 5.1), regional water assessments (refer section following) and water security assessments for regional urban areas (refer Section 3.2).

## Regional water assessments

In late 2020, the Queensland Government committed \$9 million to deliver regional water assessments in 3 significant food bowls across the state. The **Regional Water Assessment (RWA) Program** will set a roadmap for economic development in each region, where water is a catalyst for growth. The regions are:

- Southern and Darling Downs including all of Southern Downs Regional Council, Goondiwindi Regional Council, Toowoomba Regional Council and parts of Western Downs Regional Council around Dalby
- Bundaberg and Burnett including all of Bundaberg Regional Council, South Burnett Regional Council, North Burnett Regional Council and Cherbourg Aboriginal Shire Council
- Tablelands including all of Tablelands Regional Council and eastern parts of Mareeba Shire Council.

Building on previous water supply investigations in each region, the program is taking a comprehensive view of local water needs and identifying gaps to be filled. Extensive stakeholder engagement has been a central feature of the process to date. Wider public consultation is planned to occur for draft assessment products in the first half of 2023. The Southern and Darling Downs assessment commenced in July 2021, and the Tablelands and the Bundaberg and Burnett assessments in late 2021. All assessments are now well progressed into the detailed options analysis stage. When complete, the regional water assessments will set out how existing infrastructure, new infrastructure and non-infrastructure solutions can be used to maximise water supply in each area and drive economic growth. Each assessment is scheduled to take up to 24 months to complete.

## Collaborative strategic planning

In October 2022, the Australian Government committed \$11.5 million of funding to support collaborative strategic planning between the Queensland and Australian governments on a set of priority projects. Early indications suggest that the focus will include: Burdekin infrastructure study, Central Queensland infrastructure study, priority water planning activities in the Burdekin Basin, and further consideration of the Granite Belt Irrigation Project (including Emu Swamp Dam).

## Water supply projects for economic development

Table 5 updates major water supply projects intended to support regional economic development that are recently completed, in construction, have ongoing investigations and planning, or are awaiting triggers to progress. Many of the projects have received funding under State programs and/or Australian Government programs such as the National Water Infrastructure Development Fund (NWIDF) and the National Water Grid Fund (NWGF). DRDMW will continue to facilitate funding arrangements to support delivery of project activities. All financial commitments are subject to the usual approval processes including during the investigation and planning phases.



Lake Proserpine

**Table 5: Major water supply projects for economic development**

Project name	Proponent	Purpose	Status
<b>Projects with ongoing investigations and planning</b>			
Big Rocks Weir	Charters Towers Regional Council	New weir on the Burdekin River approximately 26km north of Charters Towers to provide additional supplies to support agriculture and urban water security in the Charters Towers area.	DBC completed in 2020, supported by NWIDF funding. The EIS is progressing and is expected to be completed in 2023. Pre-construction activities are progressing. These will enable the project to be brought to a final investment decision, expected 2023.
Bowen Pipeline Project	Bowen Pipeline Company	A pipeline sourcing water from the existing Burdekin Haughton Water Supply Scheme providing up to 100,000ML/a for agricultural use in the Bowen and surrounding area.	\$5 million committed from the Australian Government's NWGF to support a detailed business case. Assessments are currently underway with completion expected by late 2023.
Granite Belt Irrigation Project (Emu Swamp Dam)	Granite Belt Water Pty Ltd	New dam on the Severn River and connecting pipework to supply agricultural water to the Granite Belt Area and provide an additional regional source that may be used as a contingency urban supply.	A DBC was completed in 2019, supported by NWIDF funding. An EIS Feasibility Study was completed in 2020. Preconstruction activities indicate a cost increase since the DBC. The Australian Government has deferred construction funding until a viable delivery pathway can be found. The proponent is progressing further investigations to find a suitable solution.
Hughenden Irrigation Project	Hughenden Irrigation Project Corporation	The capture and storage of water in the upper reaches of the Flinders River to support the establishment of agricultural development in the Hughenden area.	A PBC was completed in 2020, and a DBC was completed in mid-2022 supported by funding from the Australian Government. The Australian Government has deferred construction funding until a viable delivery pathway can be found. The Queensland Government is working with the proponent and the Australian Government to determine the next steps to advance the proposal's viability, without prejudicing the outcomes of the unallocated water release process in the Flinders River catchment.
Lakeland Irrigation Area	Tropical North Regional Development Australia	New bulk water supply infrastructure to provide additional supplies to agriculture in the Lakelands area.	Strategic business case was completed in April 2020, supported with NWIDF funding. The Australian Government has provided an additional \$10 million of NWIDF funding to develop a DBC. The DBC is expected to be completed late 2022.
Lansdown Enabling Infrastructure	Townsville City Council	The project includes a reservoir and 13km pipeline to connect the Eco-Industrial Precinct to the Haughton Pipeline.	The Queensland Government has committed \$26 million and the Australian Government has committed \$22 million to the project. Works are expected to occur over 3 years from 2022–23.
Lockyer Valley and Somerset Water Security Scheme	Lockyer Valley and Somerset Collaborative	Alternative water supplies and innovative water delivery mechanisms to support agricultural users in the Lockyer Valley.	The DBC has been completed. DRDMW is working with the Collaborative and Seqwater to better understand water availability, costs and alignment with SEQ water security plans. The Collaborative is seeking funding from the Australian Government to progress this project.
Urannah Dam	Bowen Collinsville Enterprise Incorporated with Bowen River Utilities	New water supply infrastructure in the Broken River to supply agriculture, industry and potentially supply urban communities.	NWIDF supported PBC completed June 2019 and DBC completed in June 2021. The EIS is being prepared (supported by NWIDF funding). The EIS and an updated DBC are scheduled to be completed in 2023.
Burdekin Falls Dam Raising Project	Sunwater	The project would provide additional water supplies for urban use, mining and regional agricultural development.	A feasibility assessment and PBC were completed in 2018. The DBC was combined with the business case to assess the Burdekin Falls Dam Improvement Project. Preparation of an EIS is progressing.

Project name	Proponent	Purpose	Status
<b>Projects with ongoing investigations and planning</b>			
Dawson Valley WSS Water Security Project	Sunwater	Investigation of infrastructure options in the Dawson River including Paranoi Weir, to increase water storage and access to new permanent entitlements in the scheme.	\$1.955 million was committed from the Australian Government's NWGF to support an Options Analysis, which is underway and expected to be complete by mid-2023. The preferred option will then form the basis of a DBC - further funding is yet to be confirmed.
Nogoa Mackenzie WSS Water Security Project	Sunwater	Investigation of infrastructure options in the scheme, including raising Bedford Weir, to increase long-term water reliability.	\$1.698 million was committed from the Australian Government's NWGF to support a PBC. Assessments are currently underway and expected to be complete by mid-2023. The preferred option will then form the basis of a DBC - further funding is yet to be confirmed.
Modern Bradfield Scheme	DRDMW	A scheme to capture water from North Queensland and divert it west across the Great Dividing Range to support irrigation and economic development.	In 2021, the independent Bradfield Regional Assessment and Development Panel reported to the Queensland Government on the feasibility of a modernised Bradfield or Bradfield-like scheme. In late 2022, the Queensland Government released its response to the Panel Report and accepted or accepted in-principle all recommendations.
<b>Completed investigations with projects awaiting triggers</b>			
Coalstoun Lakes Irrigation Pipeline Project	Coalstoun Lakes Water	Pipeline from Paradise Dam to Coalstoun Lakes for irrigation and an associated pumped hydro-electricity scheme.	\$1.5 million was committed by the Australian Government under the NWIDF. The study has progressed through demand and supply options considerations. The DBC has been finalised. Further funding will be required to continue activities that will advance further understanding of the project, while awaiting outcomes of other regional project investigations.
Cloncurry River Dam	Mount Isa to Townsville Economic Development Zone Inc.	New water supply storage for irrigation development in the Cloncurry region with potential to also augment urban water supply and water available for surrounding mines.	DBC was completed in June 2019, supported with NWIDF funding. Cave Hill Dam was identified as the most promising option; however, the assessment indicates that costs outweigh benefits at this time.
Gayndah Regional Irrigation Development Project	Isis Central Sugar Mill Company Limited	Water storage and supply options and irrigation development of up to 6800 hectares in the Gayndah region of the Burnett River catchment.	DBC was completed December 2018, supported with NWIDF funding. The project has a high capital cost that would require a significant contribution from the Australian and/or Queensland Governments and/or third parties.
Gilbert River Irrigation Project	Etheridge Shire Council	New dam, weir and channels on the Gilbert River to support expansion of irrigated agriculture.	A DBC was completed in April 2020, supported with Queensland Government funding. Council is in the process of developing a strategy to continue to progress this project.
Hells Gates Dam	Townsville Enterprise Limited	New water supply infrastructure in the upper reach of the Burdekin River to supply agriculture, industry and urban communities.	DBC and environmental assessments were completed in 2022, supported by \$24 million of funding from the NWIDF. The proposal costs exceed the benefits, there is a lack of demand in the short to medium term, and the Water Plan does not currently allow for the dam, which makes this a challenging investment proposition. After considering the DBC, the Australian Government has decided that it will not be providing further funding to support additional assessment, design or construction works for the project.
North and South Burnett Assessment	North Burnett Regional Council and South Burnett Regional Council	Assessment of options to improve water security and reliability in the North Burnett and South Burnett regions.	A PBC was completed in late 2020, supported by NWIDF funding. Potential water supply options identified have been considered in the Bundaberg and Burnett Regional Water Assessment options development process.

Project name	Proponent	Purpose	Status
<b>Completed investigations with projects awaiting triggers</b>			
Richmond Agriculture Project	Richmond Shire Council	Proposal to determine the technical feasibility of constructing a weir, channels and associated infrastructure to support sustainable agricultural development.	PBC completed April 2020, supported with \$1.2 million Queensland Government funding. Elements of a DBC are being prepared by Council. For the project to proceed, access to water would need to be secured in accordance with DRDMW processes, noting several proposals in the Flinders River catchment are competing for available water.
Connors River Dam and pipeline	Sunwater	New infrastructure primarily to supply coalmines near Moranbah (Bowen and Galilee basins) with some urban supply to associated communities.	State and federal environmental approvals were obtained but some have now lapsed. Land has been acquired and is being managed by DRDMW. Currently there is insufficient demand to be viable.
Nathan Dam and pipeline	Sunwater	Mining, industrial and urban supply to Dawson Valley and Surat Basin.	EIS was complete, but conditions have now lapsed. The ILUA has expired. Land has been acquired and is being managed by DRDMW. Currently there is insufficient demand to be viable.
Nullinga Dam	Sunwater	New dam to support expansion of irrigated production in the Mareeba – Dimbulah Irrigation Area – in the longer-term, potential to augment Cairns urban supplies.	A DBC was completed in June 2019, supported with NWIDF funding. The project has a high capital cost which outweighs the benefits at this time. Currently insufficient cost reflective demand to be viable. Mareeba Shire Council has amended its local planning scheme to protect the Nullinga Dam site against potential incompatible land uses. Sunwater considered alternative water supply options identified in the DBC and progressed the most beneficial options through the Mareeba-Dimbulah Water Supply Efficiency Improvement Project.
Tablelands Irrigation Project	Tablelands Regional Council	The project considers water supply and use options in the Upper Herbert River catchment to drive regional economic growth, achieve industry development and community benefit.	PBC completed in 2019, supported with NWIDF funding. Several potential water supply options have been identified. These have been considered in the options development process of the Tablelands Regional Water Assessment.

DBC – Detailed Business Case, EIS – Environmental Impact Statement, ILUA – Indigenous Land Use Agreement, PBC – Preliminary Business Case; NWIDF – National Water Infrastructure Development Fund (Australian Government), NWGF – National Water Grid Fund (Australian Government); DRDMW – Dept of Regional Development, Manufacturing and Water



Diamantina River

## 5.3 Continuous improvement and maintenance measures

Continuous improvement and maintenance measures are routinely undertaken by bulk water providers. Table 6 shows some of the major projects reported by the state's bulk water providers during 2022.

**Table 6:** Continuous improvement and maintenance measures

Bulk Water Authority	Major continuous improvement and maintenance projects
Gladstone Area Water Board (GAWB)	<p>GAWB completed full inspections of approximately 520 metres of concrete lined pipe suction conduit and 350 metres of concrete lined pipe discharge conduit. A project to address the required repairs identified during those inspections is now in planning phase.</p> <p>GAWB commenced a project to replace flowmeters across the network to enhance operations and improve accuracy in billing data.</p> <p>Construction of GAWB's new hatchery facility was completed during the year. It will be capable of producing up to 2 million fingerlings per year.</p> <p>Network connection to Gladstone Regional Council's Kirkwood Reservoir was completed during 2021-22. This included the construction of a new pump station and booster pumps required for the reservoir's high elevation.</p> <p>Planning has commenced to repair and remediate the Awoonga Dam pipeline. Works are planned to commence in Q2 2023 and be completed in Q4 2024.</p> <p>Planning has commenced to make repairs to Awoonga Dam shotcrete concrete. Works are due to commence in Q1 2023 and be completed in Q2 2024.</p> <p>As part of ongoing process improvement, GAWB is uplifting its project management framework to ensure continuous improvement in managing and controlling capital investments. A pilot project commenced in 2021-22 and to be completed in 2022-23.</p>
Mount Isa Water Board	<p>During 2021–22, the Mount Isa Water Board continued to enhance the efficiency and effectiveness of its maintenance practices by digitising maintenance data in the Computerised Maintenance Management System (CMMS). These improvements have resulted in greater transparency for maintenance activities, which has increased confidence in strategic asset planning and improved the accuracy of budget forecasting.</p> <p>Through continued investment in its operations and maintenance programs, the Mount Isa Water Board achieved 100 per cent compliance with contracted pressure for all major bulk water customers and achieved 99.2 per cent critical asset availability during 2021-22.</p>
Seqwater	<p>Seqwater continues to roll out a modernisation project in the Central Lockyer Valley Water Supply Scheme that will better inform future water resource plans. Components of the project include:</p> <ul style="list-style-type: none"> <li>• The upgrade of customer meters to magnetic flow meters. The upgrade of 264 meters was completed by 31 October 2022.</li> <li>• The installation of 67 bore monitoring sensors to accurately measure bore water levels and water quality. A trial was successfully completed and all bores will be commissioned by 30 April 2023.</li> <li>• Installing a telemetry system on all surface water and bore meters. This work will provide automated, near real-time collection of water use data from customers' meters and will be completed by 30 June 2023.</li> </ul> <p>The metering and bore improvements will support more efficient operation of the scheme, and the information collected will be used to develop a new groundwater model to better inform the reliability of the resource, feeding into a review of the Water Plan (Moreton) 2007 scheduled for 2026.</p>
Sunwater	<p>Sunwater has transitioned to a new finance and asset management system. The change has:</p> <ul style="list-style-type: none"> <li>• increased the visibility of asset data</li> <li>• enabled a focus towards data driven decision making and maintenance compliance</li> <li>• enabled increased preventative maintenance compliance and a greater visibility of the forward planned corrective maintenance requirements.</li> </ul> <p>In line with the new investment in technology, Sunwater has initiated an asset optimisation program to review key infrastructure for energy efficiency opportunities and automated asset condition data capture to provide near real-time data to monitor asset performance and better inform maintenance planning. Sunwater has an ongoing program of asset maintenance and renewal, for example, the Callie Dam Gates project which will investigate and remediate the spillway gates to address intermittent occurrences of vibration during their operation and ensure ongoing dam safety and long-term water security.</p>



Storm King Dam

## 6. Queensland's water supplies

### 6.1 Water resources summary

Under Queensland's *Water Act 2000*, water plans are developed to sustainably manage and allocate water resources, balancing the needs of the environment and water users. There are 23 water plan areas in the state. More than 99.7 per cent of the volumetric surface water entitlements in the state are authorised in plan areas and about 96.8 per cent of volumetric groundwater entitlements are authorised in plan areas. To protect and manage our water resources, the water plans have established 42 water supply schemes (where dams, weirs and other infrastructure support water access) and 77 management areas for surface and underground water. Some water is also reserved in the plan areas as unallocated water reserves, for future use. Water that is available to users is granted through licences and tradable water allocations. These entitlements can be conditioned to control aspects such as how, when or where the water is taken, or how it is used. More information on Queensland's water resource planning framework is available at [Business Queensland](#).

Figure 1 shows the eight regions used in the QBWOS to describe the state's water resources. The regions are based on major drainage basins and water plan areas, but also consider local government boundaries and other factors. It is important to note that the QBWOS regions do not fully align with any one of these. Figure 2 shows the total volume of water resources that have been identified for current and future use in Queensland, presented against each of the QBWOS regions and the GABORA (Great Artesian Basin and other regional aquifers). In total, there were 10,229,230 megalitres per annum of identified water resources on 30 June 2022. This number varies slightly from year to year, mostly affected by how some entitlements may be managed (for example combined, split or changes in priority and associated reliability), how water is released or returned to reserves and how entitlements may be split, combined or have their priority converted.



Burnett River Weir

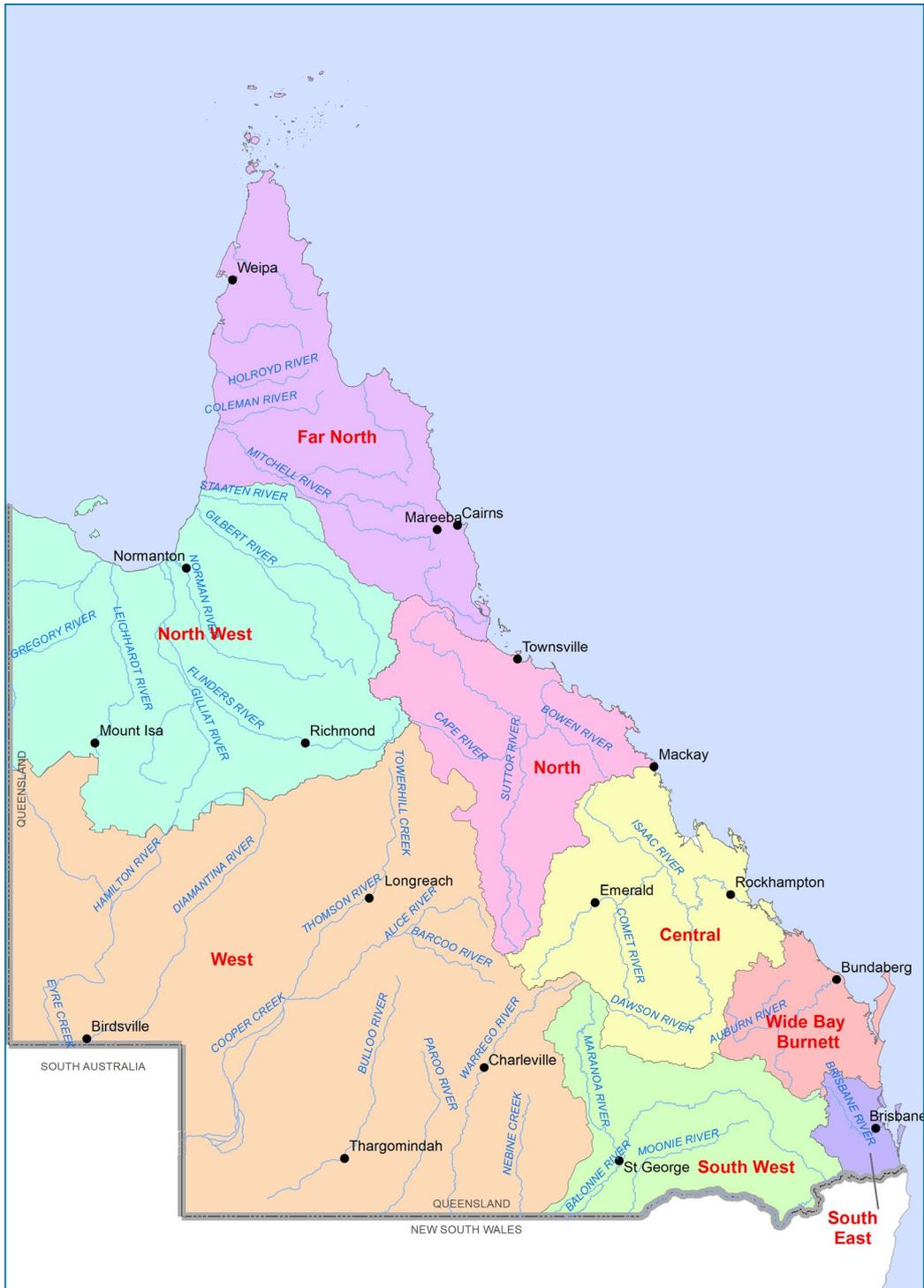


Figure 1: QBWOS regions

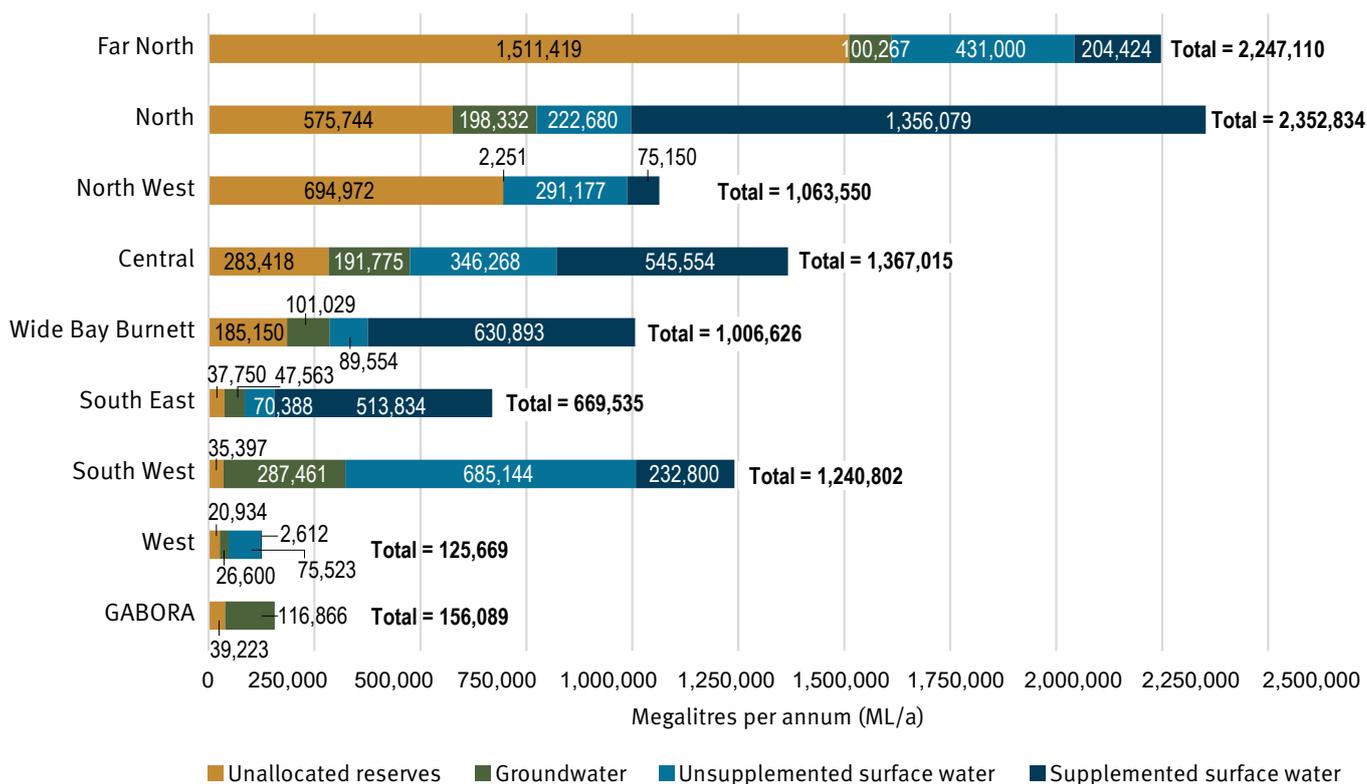


Figure 2: Summary of Queensland’s water resources (30 June 2022)

## 6.2 Water supply details

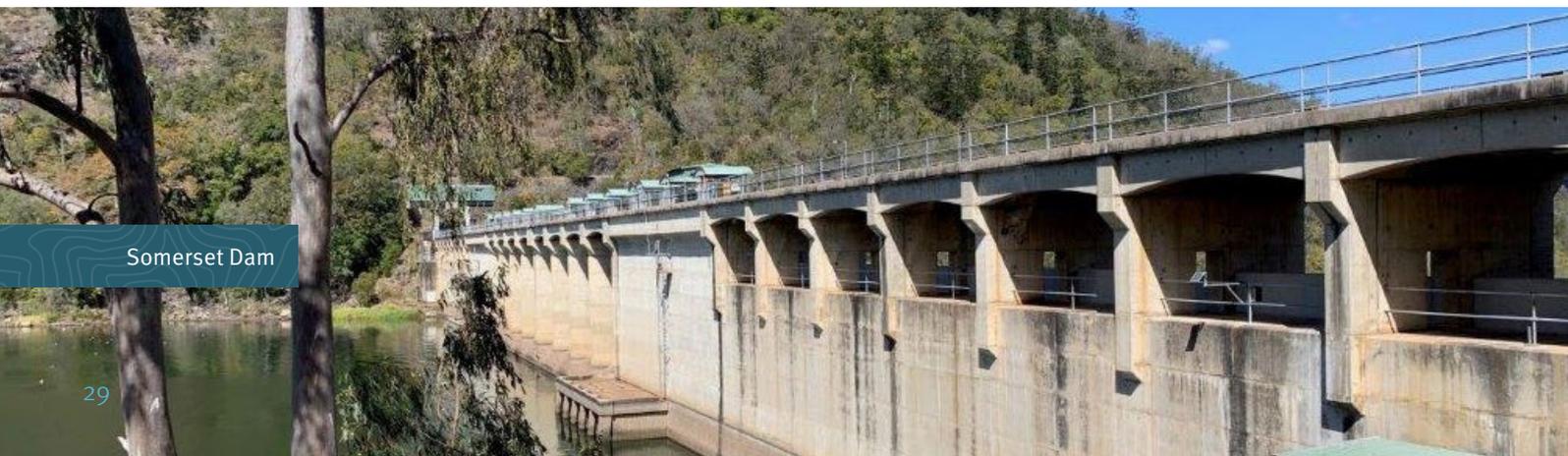
Details of Queensland’s water resources are summarised in the following tables, which describe:

- volumetrically based entitlements related to:
  - supplemented surface water (Table 7)
  - unsupplemented surface water (Table 8)
  - groundwater including in the Great Artesian Basin (Table 9)
- unallocated water reserves in plan areas (Table 10).

Data used for the summaries was current on 30 June 2022, which is the end of the water year for the majority of management areas. Data on the volume

of water taken is provided for supplemented water only (Table 7) since not all water extractions in the state are metered. Discussion on water measurement improvements is provided in Section 4.2.

In addition to the volumetric entitlements, there are approximately 9,600 licences that have no annual volumetric limit or nominal volume limit. Some of these entitlements have area-based conditions and some have other conditions that limit extraction of water in various ways. About a third of all these licences entitle the holder to take unsupplemented surface water (38 per cent) and the remainder apply to groundwater in the Great Artesian Basin (62 per cent). The majority of these licences are for stock and domestic use.



Somerset Dam

## Supplemented surface water

Table 7 provides a summary of the supplemented surface water entitlements in the state, based on the nominal volumetric limits. Supplemented surface water allocations are provided from water supply schemes that are supported by infrastructure such as a dam, weir or other improvements, and managed under a water plan. In addition to surface water, there are a small number of water supply schemes in the state that also provide supplemented groundwater. The entitlements associated with supplemented groundwater are provided in Table 9.

Supplemented surface water allocations represent about 52 per cent of the total volumetrically based water entitlements authorised in Queensland on 30 June 2022, by nominal volumetric limits. In 2021–22, more than 99 per cent of supplemented surface water allocations, that were available<sup>1</sup> to customers, were committed to customers, and about 52 per cent of the committed entitlements were taken by water users. Refer to the text box in Section 4 for more discussion on unallocated, uncommitted and underutilised water. Further details on the water supply schemes are provided in [Appendix A](#).

<sup>1</sup> Allocations that are assigned the purpose of distribution losses are not considered available to customers. All other allocation purposes are considered available to customers, noting that the manager of a water supply scheme (the holder of the ROL or iROL) can be a customer of a scheme.

**Table 7: Summary of supplemented surface water entitlements**

QBWOS region	Total allocations (ML/a)	Distribution losses(ML/a)	Available to customers(ML/a)	Committed to customers (ML/a)	Delivered 2021–22 (ML)
Far North	204,424	45,000	159,424	159,424	115,471
North	1,356,079	210,895	1,145,184	1,142,184	642,596
North West	75,150	2,500	72,650	72,650	19,355
Central	545,554	43,674	501,880	492,817	285,526
Wide Bay Burnett	630,893	48,538	582,355	582,355	161,075
South East	513,834	5,399	508,435	508,435	285,735
South West	232,800	9,726	223,074	223,074	77,466
West	2,612	0	2,612	2,492	1,743
<b>Total</b>	<b>3,561,346</b>	<b>365,732</b>	<b>3,195,614</b>	<b>3,179,728</b>	<b>1,588,967</b>

ML/a is megalitres per annum. Data on 30 June 2022. Water storage capacity reflects temporary reductions in full supply levels that have been established to maintain dam safety and for other operational reasons. There is one licence to take water issued under the Dawson Valley WSS to enable management of coal seam gas water discharged into the Dawson River, this licence is included here. All other entitlements reported here are supplemented allocations. Allocations that may be taken as either surface water or groundwater are reported here and not reported in complementary groundwater statistics. This applies to the Burdekin Haughton WSS and the Three Moon Creek WSS. Scheme data for Cressbrook Creek WSS, which has infrastructure in both South East and South West regions is reported in South East. Allocations that are assigned the purpose of distribution losses are not considered available to customers. All other allocation purposes are considered available to customers of the scheme, noting that the scheme manager (the holder of the ROL or iROL) can be a customer of a scheme. Delivered water is for 1 July 2021 to 30 June 2022. In addition to the delivered surface water reported here, there was also 16,660 megalitres of water taken as groundwater from supplemented water supply schemes.

## Unsupplemented surface water

Table 8 provides a summary of the unsupplemented surface water entitlements in the state, based on nominal volume for allocations<sup>2</sup>. These entitlements represent 32 per cent of the total volumetrically based water entitlements authorised in Queensland on 30 June 2022. In addition to the entitlements shown in Table 8, there are approximately 3,685 licences to take surface water with area-based conditions.

**Table 8:** Summary of unsupplemented surface water entitlements

QBWOS region	Allocations <sup>2</sup> (ML/a)	Licences (ML/a)	Total entitlements (ML/a)
Far North	118,349	312,651	431,000
North	74,448	148,233	222,680
North West	0	291,177	291,177
Central	189,757	156,511	346,268
Wide Bay Burnett	28,266	61,288	89,554
South East	17,580	52,808	70,388
South West	675,352	9,792	685,144
West	51,112	24,411	75,523
<b>Total</b>	<b>1,154,863</b>	<b>1,056,871</b>	<b>2,211,734</b>

Data on 30 June 2022. Volumes quoted are based on nominal volumes for both licences and allocations, as a reflection of the average share of the resource.

<sup>2</sup> Unsupplemented water allocations have an annual volumetric limit that may be taken under specified conditions, for example during very high rainfall events. The nominal volume reflects the average share of a water resource associated with an unsupplemented water allocation.

## Groundwater

Table 9 summarises all groundwater entitlements that have volumetric limits including licences and allocations for supplemented and unsupplemented water. Groundwater resources represent about 16 per cent of the total volumetric water entitlements in Queensland. About 11 per cent (by volume) of the groundwater in the state is managed under the *Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017* (the GABORA Plan). The Great Artesian Basin covers about 65 per cent of the area of Queensland and provides a critical water supply to more than 80 regional communities in our state. In addition to the volumetrically based entitlements in GABORA, there are a further 153 area-based licences and a further 5,825 licences with no nominal or area-based conditions. Of all the entitlements granted in the GABORA plan area, 89 per cent are associated with stock and domestic purposes.



Bore testing

**Table 9:** Summary of groundwater entitlements

QBWOS region	Supplemented allocations (ML/a)	Unsupplemented allocations (ML/a)	Licences (ML/a)	Total entitlements (ML/a)
Far North	0	0	100,267	100,267
North	0	0	198,332	198,332
North West	0	0	2,251	2,251
Central	14,500	45,314	131,960	191,775
Wide Bay Burnett	10,836	43,870	46,323	101,029
South East	28,395	0	19,168	47,563
South West	0	27,267	260,194	287,461
West	0	0	20,934	20,934
GABORA	0	0	116,866	116,866
<b>Total</b>	<b>53,731</b>	<b>116,452</b>	<b>896,294</b>	<b>1,066,477</b>

Data on 30 June 2022. GABORA is the *Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017*. Supplemented groundwater entitlements which may be taken as either surface water or groundwater are not included in this assessment (see Table 7).

## Unallocated water reserves

Many of Queensland's water plans include reserves of unallocated water, which can be made available for future use without compromising the security of existing users or the environmental values or cultural values within a catchment. Table 10 summarises the state's unallocated water reserves. The reserves account for one third of the total volume of water that

has been identified in plan areas in the state. However, not all the reserves are available to all water customers and not all are suitable to support the development of future bulk water supply systems such as dams and weirs. The text box in Section 4 provides more details on recent releases of water from the unallocated reserves and Section 5.1 discusses our approach to best practice infrastructure assessment.

**Table 10:** Summary of unallocated water reserves

QBWOS region	General (ML/a)	Strategic (ML/a)	Town supply (ML/a)	Indigenous (ML/a)	Other (ML/a)	Total (ML/a)
Far North	76,750	74,900	0	489,769	870,000	1,511,419
North	241,300	325,700	0	0	8,744	575,744
North West	614,050	50,372	0	30,550	0	694,972
Central	77,968	200,450	0	5,000	0	283,418
Wide Bay Burnett	4,010	176,845	3,295	1,000	0	185,150
South East	600	37,000	150	0	0	37,750
South West	32,407	2,990	0	0	0	35,397
West	22,700	2,800	500	600	0	26,600
GABORA	9,765	28,578	0	880	0	39,223
<b>Total</b>	<b>1,079,550</b>	<b>899,635</b>	<b>3,945</b>	<b>527,799</b>	<b>878,744</b>	<b>3,389,673</b>

Data on 30 June 2022. Indigenous reserve includes water for Aboriginal peoples and Torres Strait Islander peoples. Other reserve includes Sunwater reserve and High Flow General reserve.

## 7. Guide to abbreviations and key terms

### 7.1 Abbreviations

**Table 11:** Abbreviations – Queensland Government departments

Abbreviation	Department
DPC	Department of Premier and Cabinet
DRDMW	Department of Regional Development, Manufacturing and Water
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning



**Table 12: Abbreviations – other**

Abbreviation	Extension
BCDF	Business Case Development Framework
CRA	Comprehensive Risk Assessment
DBC	Detailed Business Case
DOL	Distribution Operations Licence
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
GABORA	Great Artesian Basin and Other Regional Aquifers
GAWB	Gladstone Area Water Board
GIS	Geographic Information Systems
IPDP	Infrastructure Proposal Development Policy
iROL	Interim Resource Operations Licence
MIM	Mt Isa Mines (the ROL holder for Moondarra WSS, now owned by Glencore)
ML	megalitres (1,000,000 litres)
ML/a	megalitres per annum
NWGA	National Water Grid Authority
NWGF	National Water Grid Fund
NWIDF	National Water Infrastructure Development Fund (now administered by the NWGA)
PAF	Project Assessment Framework
PBC	Preliminary Business Case
QBWOS	Queensland Bulk Water Opportunities Statement
QWMO	Queensland Water Market Optimisation - action plan
RWA	Regional Water Assessment
ROL	Resource Operations Licence
iROL	Interim Resource Operations Licence
SEQ	South East Queensland
WSS	Water supply scheme

## 7.2 Glossary

**Table 13:** Glossary of key terms

Term	Meaning
<b>Water related terms</b>	
Entitlement	Means an allocation, interim allocation or water licence. These provide entitlement holders with the right to a share of available water.
Licence	A water licence is an authority granted under chapter 2, part 3, division 2 of the <i>Water Act 2000</i> . A licence provides the authority for the holder to take water, interfere with water, or both interfere with and take water where these two activities are inextricably linked.
Allocation	An authority granted under S146 or 147 of the <i>Water Act 2000</i> .
Interim allocation	Water allocations are assets that are separate to land and may be owned and traded. The Titles Queensland Water Allocations Register records ownership information on water allocations in a similar way to how details of land ownership are recorded in the Freehold Land Registry.
Nominal entitlement	This is the annual limit of water that can be taken (when there is full availability). This relates to water licences.
Nominal Volume	For a water allocation managed under a resource operations licence (ie in a water supply scheme) the nominal volume is the number used to calculate the allocation's share of the water available to be taken by holders of water allocations in the same priority group.  For a water allocation not managed under a resource operations licence, a nominal volume is the number used to calculate the allocation's share of the water available to be taken by holders of water allocations in all water allocation groups in a water plan area.  In simple terms, in relation to a supplemented water allocation this is the annual limit of water that can be taken, when there is full availability.
Volumetric limit	For a water allocation (unsupplemented) this is the annual limit of water that may be taken by the entitlement holder (when there is full availability). A water allocation may include more than one volumetric limit.
Annual volumetric limit	A water allocation may also have a nominal volume, which reflects the expected average share of the resource that will be taken by the entitlement holder, based on hydrologic models.
Available water	An entitlement to water is a right to a share of available water. The availability of water is affected by a range of factors including rainfall, evaporation, temperature, soil moisture and demand. Pre-determined rules are used to identify and announce the availability of water in management areas and water supply schemes, and some other areas in the state.
Availability	
Reserves /Unallocated reserves	Under respective water plans, a portion of the total volume available for consumptive use may be held 'in reserve'. These reserved volumes are assigned different purposes, and include general, strategic, town water supply or state reserve, Indigenous reserve, and strategic infrastructure reserve.
Committed water	Water entitlements that have been sold or traded to a customer for the customer's use.
Uncommitted water	Water entitlements that have not been committed. These entitlements are usually available for lease, sale or contract subject to transportation infrastructure constraints.
Supplemented water	Supplemented water means water supplied under an interim resource operations licence, resource operations licence or other authority to operate water infrastructure.  Supplemented water is provided from water supply schemes that are usually supported by infrastructure such as a dam, weir or other improvements.
Unsupplemented water	Water that is not supplemented water.
Unused water	Not all entitlement holders use their full amount of water available under entitlements each year (a portion remains unused).

Term	Meaning
<b>Water related terms</b>	
Water service	Under the <i>Water Supply (Safety and Reliability) Act 2008</i> , a water service includes water harvesting or collection, such as dams, weirs, bores and direct extraction from watercourses; the transmission of water; the reticulation of water and drainage infrastructure other than for stormwater drainage, water treatment and recycling.
Water service provider	An entity registered as a service provider for a water service. In Queensland, water service providers include drinking water service providers (primarily local governments), recycled water providers (who are not required to register as a service provider unless they also provide another water or sewerage service), bulk water service providers and water authorities.
Water supply scheme (WSS)	Combinations of dams, weirs, pipelines, channels and other storage or transport infrastructure, operated conjunctively in a water plan area in accordance with a DOL, ROL or iROL.
Water storage capacity	The volume of water authorised to be stored in a dam or weir, excluding the volume of any dedicated flood storage compartment for those dams that have it and excluding volume associated with fabridams no longer in service. Includes consideration of authorised temporary changes to full supply levels of dams for dam safety risk management and for other operational reasons such as for construction or maintenance works. Storage capacity provides no indication of system yield.
Full supply volume	
<b>Economic and financial terms</b>	
Commercially viable	Projects demonstrated to achieve a commercial rate of return on invested funds.
Economically viable	There is a net economic benefit, that is, the economic benefits outweigh the economic costs following economic analysis (an economic analysis is a comprehensive analysis of all the costs and benefits associated with each proposed project option, including financial, environmental and social matters (typically employing cost–benefit analysis) with the objective determining the most economic use of resources).
Financial analysis	A financial analysis, conducted on a cash basis, determines whether projected revenues will be sufficient to cover costs, including an appropriate return on the capital invested.
Regional economic development	This is considered to include economic development that occurs in, or impacts on, metropolitan areas, regional urban centres, and rural and remote communities.
<b>Infrastructure related terms</b>	
Detailed Business Case (DBC)	Evaluates the viability of the highest ranked option and involves a comprehensive assessment across a number of criteria (such as socio-economic, environmental, financial, sustainability, legal and regulatory considerations). The DBC includes development of detailed implementation documents covering governance, risk procurement (where appropriate), contractual terms and operations.
Feasibility assessment (Strategic assessment under the BCDF)	Provides decision-makers with the information they need to consider whether to progress with the proposal, including articulates the problem or opportunity and service need, the targeted benefits in responding to the service need, and identifying a range of strategic responses and longlist of options.
Preliminary Business Case (PBC) (Options analysis under the BCDF)	Narrows the breadth of options identified in the feasibility/strategic assessment and involves applying stringent criteria to narrow the options. Any remaining options are then subjected to a rigorous evaluation of the potential viability using socio-economic, environmental, financial and sustainability analysis.
Project proponent	An individual, group or organisation that submits or proposes a project for review and acceptance.
<b>Other terms</b>	
South East Queensland (SEQ)	The <i>Water Act 2000</i> , S341 defines the SEQ region as the local government areas of: Brisbane City Council, Gold Coast City Council, Ipswich City Council, Lockyer Valley Regional Council, Logan City Council, Moreton Bay Regional Council, Noosa Shire Council, Redland City Council, Scenic Rim Regional Council, Somerset Regional Council, Sunshine Coast Regional Council.

# Appendix A. Details of water supply schemes

## Notes to Table 14

Table 14 provides key statistics for all the water supply schemes in Queensland, on 30 June 2022.

The allocations quoted are for all entitlements in the scheme, including allocations and interim allocations for surface water and groundwater.

Callide Valley WSS, Central Lockyer Valley WSS, and Three Moon Creek WSS have supplemented allocations for both groundwater and surface water. Burdekin Haughton WSS and Three Moon Creek WSS have some allocations that can be taken as either groundwater or surface water. All other schemes have allocations for surface water only.

There is one licence to take water issued under the Dawson Valley WSS to enable management of coal seam gas water discharged into the Dawson River. This licence is included here, all other entitlements reported here are for supplemented allocations.

Allocations that are assigned the purpose of distribution losses are not considered available to customers. All other allocation purposes are considered available to customers of the scheme. Water is committed if it has been sold, leased or contracted to a customer. The scheme manager (the holder of the ROL or iROL) can be a customer of a scheme.

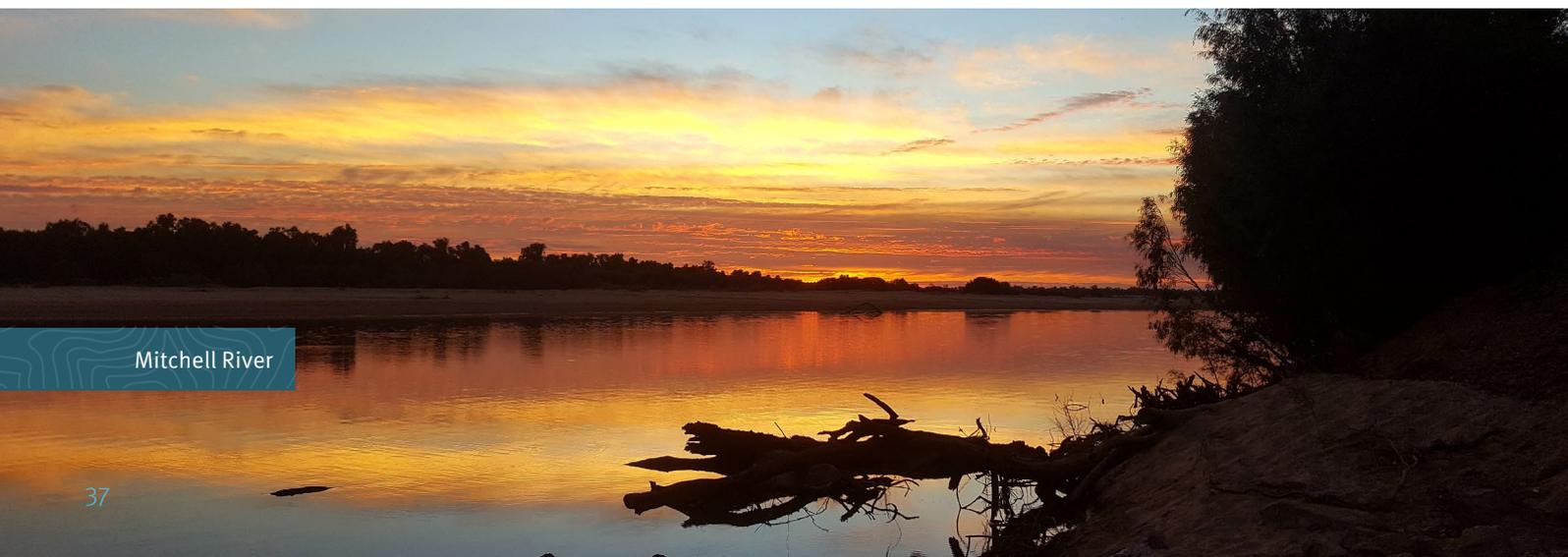
Volumes of water reported as delivered includes water associated with distribution losses.

Estimates of underutilised volumes examined water entitlements and delivery data back to 2006–07 for all water supply schemes except those in the South East region, where data was only available back to 2010–11 (aligned with commencement of the ROPs/ROs/iROs in the region). This timespan covers periods of drought and floods across much of the state (excluding the millennium drought in SEQ). The totals presented integrate all types of water products including medium and high priority water. The estimates take account of the availability of water, as indicated by announced allocations. The estimates do not take account of demands that have been constrained by the local water service provider through the application of restrictions as a drought response measure.

ROL/iROL is Resource Operations Licence / Interim Resource Operations Licence; BRC is Border Rivers Commission; GAWB is Gladstone Area Water Board; MIM is Mt Isa Mines Glencore Australia; RC is Regional Council; CC is City Council.

\*These estimates may be over-estimated for the reasons described above.

#When Paradise Dam was lowered in 2019, approximately 100,000 megalitres per annum of uncommitted supplemented water was quarantined from commitment to water customers. When the dam is returned to its original height, these entitlements will again be available for purchase from the Bundaberg WSS.



Mitchell River

**Table 14:** Details of water supply schemes (30 June 2022)

Water Supply Scheme	Allocations (ML/a)					Reported water delivered (ML)					Estimated underutilised volume (ML/a)	QBWOS region	ROL/iROL holder	Water storages in the scheme
	Total	Distribution losses	Available to water users	Committed to customers	Available water not currently committed	2021–22	2020–21	2019–20	2018–19	2017–18				
Awoonga	78,000	0	78,000	69,000	9,000	44,820	51,619	56,034	57,344	51,767	<9,800	Central	GAWB	Awoonga Dam
Barker Barambah	34,305	0	34,305	33,602	703	2,127	8,023	6,511	13,162	10,641	<8,700	Wide Bay Burnett	Sunwater	Bjelke-Petersen Dam, Joe Sippel Weir, Silverleaf Weir
Baroon Pocket	36,500	0	36,500	36,500	0	30,697	24,112	27,519	18,816	19,949	<3,500*	Wide Bay Burnett	Seqwater	Baroon Pocket Dam
Border Rivers	84,414	0	84,414	84,414	0	6,533	2,208	1,628	34,925	46,799	<14,700	South West	Bundaberg Regional Council	Glenlyon Dam, Weirs: Bonshaw, Cunningham, Glenarbon, Boggabilla, Goondiwindi, Boomi, Mungindi
Bowen Broken	38,930	494	38,436	35,436	3,000	17,791	18,654	21,682	16,653	14,099	<14,300	North	Sunwater	Bowen River Weir (Collinsville Weir), Gattovale Offstream Storage, Eungella Dam
Boyne River and Tarong	43,405	1,620	41,785	41,785	0	18,172	12,336	15,979	29,909	34,129	<9,200	Wide Bay Burnett	Sunwater	Boondooma Dam
Bundaberg	375,434	41,520	333,914 <sup>#</sup>	333,914	0	74,234	186,269	284,025	189,703	112,034	<63,700	Wide Bay Burnett	Sunwater	Paradise Dam, Ned Churchward Weir, Ben Anderson Barrage, Fred Haigh Dam, Bucca Weir, Kolan Barrage
Burdekin Haughton	1,079,592	206,737	872,855	872,855	0	542,754	538,612	663,537	524,104		<195,700	North	Sunwater	Burdekin Falls Dam, Gorge Weir, Blue Valley Weir, Val Bird Weir, Giru Weir, Clare Weir

Queensland bulk water opportunities statement. Part B: 2022 Program update

Water Supply Scheme	Allocations (ML/a)					Reported water delivered (ML)					Estimated underutilised volume (ML/a)	QBWOS region	ROL/iROL holder	Water storages in the scheme
	Total	Distribution losses	Available to water users	Committed to customers	Available water not currently committed	2021–22	2020–21	2019–20	2018–19	2017–18				
Callide Valley	19,325	0	19,325	19,325	0	10,946	13,565	15,900	17,325	14,907	<2,000	Central	Sunwater	Callide Dam, Kroombit Dam, Callide Creek Weir
Cedar Pocket	495	0	495	495	0	205	271	462	260	307	-	Wide Bay Burnett	Seqwater	Cedar Pocket Dam
Central Brisbane and Stanley River	286,041	0	286,041	286,041	0	147,134	172,377	194,790	192,477	177,538	<91,300*	South East	Seqwater	Wivenhoe Dam, Somerset Dam, Mount Crosby Weir
Central Lockyer Valley	37,391	185	37,206	37,206	0	5,089	5,089	55	10,509	1,202	<2,700	South East	Seqwater	Bill Gunn Dam, Clarendon Dam, Weirs: Kentville, Jordan I & II, Wilson, Clarendon, Glenore Grove, Laidley Creek Diversion, Showgrounds, Crowley Vale
Chinchilla Weir	4,049	0	4,049	4,049	0	932	1,755	2,759	3,073	2,207	<700	South West	Sunwater	Chinchilla Weir
Cressbrook Creek	10,000	0	10,000	10,000	0	11,806	12,102	4,719	8,392	9,318	-	South East	Toowoomba Regional Council	Cressbrook Dam, Perseverance Dam
Cunnamulla	2,612	0	2,612	2,492	120	1,743	2,477	1,021	1,703	1,746	<100	West	Sunwater	Allan Tannock Weir
Dawson Valley	79,987	4,005	75,982	75,919	63	55,098	38,176	52,779	53,237	55,204	<6,400	Central	Sunwater	Weirs: Glebe, Gyranda, Orange Creek, Theodore, Moura, Neville Hewitt, Selma; Moura Offstream Storage
Eton	61,784	9,384	52,400	52,400	0	23,475	23,936	28,002	26,007	24,420	<27,900	Central	Sunwater	Kinchant Dam

Water Supply Scheme	Allocations (ML/a)					Reported water delivered (ML)					Estimated underutilised volume (ML/a)	QBWOS region	ROL/iROL holder	Water storages in the scheme
	Total	Distribution losses	Available to water users	Committed to customers	Available water not currently committed	2021–22	2020–21	2019–20	2018–19	2017–18				
Fitzroy Barrage	62,093	0	62,093	62,093	0	24,787	28,197	29,249	26,769	24,633	<32,900*	Central	Rockhampton Regional Council	Fitzroy Barrage
Julius Dam	48,850	1,250	47,600	47,600	0	3,411	6,827	7,003	5,528	5,958	<19,800	North West	Sunwater	Julius Dam
Logan River	23,344	0	23,344	23,344	0	3,220	7,170	13,354	11,935	6,718	<10,000*	South East	Seqwater	Maroon Dam, Wyaralong Dam, Cedar Grove Weir, Bromelton Weir, South Maclean Weir
Lower Fitzroy	28,621	1,275	27,346	27,346	0	17,500	16,708	17,734	18,929	19,740	<7,600	Central	Sunwater	Eden Bann Weir
Lower Lockyer Valley	12,620	1,500	11,120	11,120	0	377	202	352	375	638	<5,700	South East	Seqwater	Atkinson Dam, Weirs: Buaraba Creek Diversion, Brightview, Sippels, Potters, O'Reillys
Lower Mary River	30,399	4,912	25,487	25,487	0	2,132	10,498	13,643	10,775	7,464	<4,100	Wide Bay Burnett	Sunwater	Mary River Barrage, Tinana Barrage
Macintyre Brook	24,997	0	24,997	24,997	0	3,038	5,913	1,926	12,931	18,337	<3,100	South West	Sunwater	Coolmunda Dam, Whetstone Weir, Ben Dor Weir
Maranoa River	805	0	805	805	0	0	0	0	34	14	<700	South West	Sunwater	Neil Turner Weir
Mareeba Dimbulah	204,424	45,000	159,424	159,424	0	115,471	121,314	150,256	121,486	117,912	<42,500	Far North	Sunwater	Tinaroo Falls Dam, Granite Creek Weir, Bruce Weir, Leafgold Weir, Solanum Weir, Collins Weir, Dulbil Weir
Mary Valley	32,121	486	31,635	31,635	0	8,309	13,660	14,891	9,650	8,197	<13,900	Wide Bay Burnett	Seqwater	Borumba Dam, Imbil Weir

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Water Supply Scheme	Allocations (ML/a)					Reported water delivered (ML)					Estimated underutilised volume (ML/a)	QBWOS region	ROL/iROL holder	Water storages in the scheme
	Total	Distribution losses	Available to water users	Committed to customers	Available water not currently committed	2021-22	2020-21	2019-20	2018-19	2017-18				
Moondarra Dam	26,300	1,250	25,050	25,050	0	15,944	15,943	17,397	15,444	13,773	<6,800*	North West	MIM	Moondarra Dam
Nerang	84,000	0	84,000	84,000	0	78,388	72,787	62,237	50,994	53,413	<5,700*	South East	Seqwater	Hinze Dam, Little Nerang Dam
Nogoa Mackenzie	230,244	29,010	201,234	201,234	0	115,652	81,903	124,116	119,996	178,911	<28,000	Central	Sunwater	Fairbairn Dam, Bedford Weir, Bingegang Weir, Tartus Weir
Paluma / Crystal Creek	21,571	0	21,571	21,571	0	10,416	7,875	9,174	9,838	9,954	<11,200*	North	Townsville City Council	Paluma Dam
Pine Valleys	59,000	0	59,000	59,000	0	41,248	42,118	34,741	43,748	33,504	<15,300*	South East	Seqwater	North Pine Dam
Pioneer River	78,110	864	77,246	77,246	0	20,243	21,211	26,922	26,203	24,984	<33,800	North	Sunwater	Teemurra Dam, Mirani Weir, Marian Weir, Dumbleton Rocks Weir
Proserpine River	62,876	2,800	60,076	60,076	0	18,992	24,782	26,596	27,168	24,380	<16,000	North	Sunwater	Peter Faust Dam
Ross River	75,000	0	75,000	75,000	0	32,400	37,094	41,826	32,700	22,818	<24,000*	North	Townsville City Council	Ross River Dam
St George	84,575	9,701	74,874	74,874	0	57,531	89,523	49,776	92,247	82,154	-	South West	Sunwater	EJ Beardmore Dam, Moolabah Weir, Jack Taylor Weir, Buckinbah Weir
Teddington Weir	10,869	0	10,869	10,869	0	3,103	4,060	4,486	4,067	4,040	<5,800*	Wide Bay Burnett	Fraser Coast Regional Council	Teddington Weir, Talgella Weir

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	Total	Distribution losses	Available to water users	Committed to customers	Available water not currently committed	2021–22	2020–21	2019–20	2018–19	2017–18				
Three Moon Creek	15,028	0	15,028	15,028	0	5,608	9,040	8,826	7,707	4,833	<6,000	Wide Bay Burnett	Sunwater	Cania Dam, Youlambie Weir, Monto Weir, Bazley Weir, Avis Weir, Mulgildie Weir
Upper Burnett	48,700	0	48,700	45,700	3,000	15,294	24,510	26,490	20,480	16,158	<19,300	Wide Bay Burnett	Sunwater	Wuruma Dam, John Goleby Weir, Kirar Weir, Jones Weir, Claude Wharton Weir
Upper Condamine	33,960	25	33,935	33,935	0	9,432	6,000	7,793	1,703	4,287	<9,100	South West	Sunwater	Leslie Dam, Weirs: Talgai, Yarramalong, Lemon Tree, Melrose, Wando, Nangwee, Cecil Plains
Warrill Valley	29,834	3,714	26,120	26,120	0	3,373	5,215	17,827	16,137	8,582	<11,900	South East	Seqwater	Moogerah Dam, Diversion Weirs: Upper Warrill, Kents Lagoon, Warrill Creek, Warroolaba Creek, Churchbank, West Branch Warrill, Aratula Weir, Railway Weir
Wide Bay	14,473	0	14,473	14,473	0	6,202	7,757	8,686	6,372	4,723	<5,800*	Wide Bay Burnett	Fraser Coast Regional Council	Lenthals Dam, Burrum I & II Weirs

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