



Queensland
Government

Department of Regional Development,
Manufacturing and Water



Statement of proposals

Burdekin Basin water plan review

10 March 2023

Acknowledgement of Traditional Owners

We respectfully acknowledge the Aboriginal and Torres Strait Islander peoples as the Traditional Owners and Custodians of this Country – the lands and seas on which we meet, live, learn, work and play. We acknowledge those of the past, the Ancestors whose strength has nurtured this land and its people, and we recognise their connection to land, sea and community. We pay our respects to them, their culture and to their Elders past and present.

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Minister's foreword

I am pleased to announce the review of the Water Plan (Burdekin Basin) 2007, which will inform the development of the Burdekin Basin's next water plan.

Water plans are a key part of the Queensland Government's approach to water management and are intended to strike a balance between water needs for industry, irrigators, town water supply, social and cultural values and the environment across our state.

As part of the water plan review process, new areas are proposed to be incorporated into the next water plan, including the Ross River, Crystal Creek, the southern boundary of the Lower Burdekin Water Board area and groundwater in the Black River underground water area.

In addition to ensuring sustainable water management into the future, the new water plan will also consider future water demand, including for urban users and agricultural and industrial growth. I propose to ensure there is sufficient water set aside to support the Big Rocks Weir, Burdekin Falls Dam Raising Project and the Pioneer-Burdekin Pumped Hydro Energy Storage proposals as these projects progress. Underpinned by the best-available science and informed by community engagement, the new plan will protect our water resources and ensure sustainable management into the future.

The Queensland Government is committed to delivering a new Burdekin Basin water plan which builds awareness on sustainable water management, future demand drivers and opportunities. That is why my department will work alongside the water users, businesses and the community to consider the breadth of views about how best to use the Burdekin Basin's water resources.

While water continues to fulfil a key role in unlocking economic growth across our state, particularly in the Burdekin Basin in North Queensland, it also has a fundamentally important role for our First Nations people and our natural environment, including the Great Barrier Reef. With this in mind, the next Burdekin water plan will continue to support the cultural values of Aboriginal peoples and Torres Strait Islanders and environmental values.

This Statement of Proposals has been prepared to help guide you through the water planning process. People will have the opportunity to contribute to the development of a new plan and I encourage anyone with an interest to make a submission to inform the development of the new plan.

Honourable Glenn Butcher MP

Minister for Regional Development and Manufacturing and Minister for Water

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Introduction

The purpose of this Statement of Proposals is to provide information to the community on the Minister's proposals to review and replace the existing Water Plan (Burdekin Basin) 2007 (the water plan). This information aims to support interested community members to prepare public submissions on the proposals.

The water plan currently provides the framework for managing surface water resources, including over land flow, throughout the water plan area. The 10-year life of the water plan was extended in 2017 and again in 2019, with it now expiring 1 September 2023.

The Minister has published a notice under section 44 of the *Water Act 2000* (the Water Act). This notice formally commences preliminary public consultation to support the review and development of a new water plan for the Burdekin Basin including new areas of the Ross River and Crystal Creek catchments and the Black River underground water area. This Statement of Proposals supports the notice by providing additional information about the reasons for the review and the way the community can help shape the new plan. The Minister may use powers provided under section 55 of the Water Act to extend the expiry of the water plan beyond 1 September 2023. This would allow time to discuss the proposals with the broad range of stakeholders interested in the water plan.

The information gathered will aid the Department of Regional Development, Manufacturing and Water (DRDMW) in a review of water management and demand across the Burdekin Basin and in the new areas of the Ross River and Crystal Creek catchments and the Black River underground water area. The review and development of a new water plan ensures water management outcomes and strategies continue to support the sustainable management of water and consider emerging water demand and economic development through new water infrastructure.

Burdekin Basin Initiatives

Alongside the review of the Burdekin Basin water plan, there are two other related initiatives in the Burdekin Basin that will help assess future economic opportunities considering environmental, climate change and cultural implications.

The Australian Government has committed \$11.5 million to fund strategic planning work in Queensland. This work will support the investigation of options to improve water security and to help inform future priority water proposals in the Burdekin and Central Queensland regions. The Australian and Queensland Governments are currently preparing the scope of this work.

In the Lower Burdekin, where irrigated agriculture is underpinned by water from the Burdekin Haughton Water Supply Scheme, rising groundwater is threatening the productivity and sustainability of agriculture across the region. In 2017, the Queensland Government commenced working in partnership with local water users and Sunwater to develop a coordinated response to this issue with a discussion paper released for public consultation. Since then, the DRDMW has undertaken a social and economic assessment, groundwater modelling and water quality sampling to better understand the issues and the impacts on industry and the environment.

In May 2018, Sunwater in consultation with local landowners completed remedial works in Cassidy Creek to address siltation issues that were restricting the flow of water and causing higher groundwater levels. Mitigation works enabled Cassidy Creek to successfully drain and lower the pressure on groundwater levels in the immediate area.

In 2021, Sunwater commenced the Lower Burdekin Rising Groundwater Mitigation Project which will investigate and deliver off-farm actions to contribute to the mitigation of rising groundwater in the region. The four-year, \$12.5 million project will use a range of preventative measures and intervention techniques to counter the threat of rising groundwater levels and high-water salinity. Sunwater is working with local grower representatives, agronomists, scientists and government agencies to identify sustainable solutions for areas impacted by rising groundwater. In late 2022, Sunwater made an application for a further \$12.5 million of matching funding under the National Water Grid Fund identified in the Commonwealth's October 2022-23 budget documents.

Key stakeholders and the public will be given opportunity to provide input at various stages of these different initiatives. This will ensure the communities views will be considered as part of all aspects of planning future water resource development in the Burdekin Basin.

The water planning framework

The Water Act provides the legislative framework for the sustainable planning, allocation and management of water resources in Queensland. It requires that all planning, allocation and use of water must 'advance sustainable management and efficient use of water'.

Water plans provide the principal mechanism for achieving the requirements of the Water Act, setting out detailed strategies and outcomes for water to be shared between water users, including the environment. The water planning framework adopts an adaptive management approach where plans are improved over time. The framework follows a cycle of planning, implementation, monitoring, reporting and review (**Figure 2**). As each plan is reviewed the next planning cycle begins, building on the learnings from the previous cycle.

Figure 1: Overview of the water planning cycle



Water plans are connected to and implemented through several legislative and operational instruments (**Table 1**). Operational instruments describe the day-to-day management arrangements that are designed to meet the relevant water plan's strategies and objectives. To understand how the water plan operates it is often necessary to also refer to these other instruments.

Table 1: Water planning legislative and operational instruments

Legislation, statutory instruments, and associated documents	Type	Purpose
<i>Water Act 2000</i>	Overarching legislation	Sets out the principles and processes for the sustainable management and allocation of water resources in Queensland.
<i>Water Regulation 2016</i>	Subordinate legislation to the Water Act	Amongst other things, prescribes state-wide management principles. It also prescribes rules and regulates specific areas not managed under a water plan, for example, the Burdekin underground water area.
Water Plan (Burdekin Basin) 2007	Subordinate legislation to the Water Act	Designed to sustainably manage the allocation of water, generally over a 10-year period. Water plans aim to achieve a sustainable balance between water needs for industry, irrigators, town water supply, social and cultural values and the environment. The content includes: <ul style="list-style-type: none"> • Outcomes • Measures and strategies for achieving the outcomes • Performance indicators • Amounts of water available for consumptive use and future use • Specifications of water management areas and trading zones • Criteria for deciding water licences
Minister's Performance Assessment Report	Statutory reporting	Assesses the water plan and outcomes on a five-yearly basis. The assessment is risk-based and tracks the performance of the water plan against sustainable management criteria in the Water Act. Recent Burdekin Basin Minister's Performance Assessment reports were prepared in 2017 and 2019.
Burdekin Basin water management protocol	Statutory instrument	Plans are implemented by water management protocols which specify the day-to-day rules and management arrangements. The protocol includes rules for: <ul style="list-style-type: none"> • Water dealings/ trading • Water sharing rules for unsupplemented water • Seasonal assignment • Unallocated water • Monitoring and reporting
Water entitlement notice	Statutory instrument	A temporary document to convert, grant or amend water entitlements. A water entitlement notice was prepared as part of the 2019 amendment to the Burdekin Basin Water Management Protocol.
Resource operations licence (ROL) or Distribution operations licences (DOL)	Water authorisations under the Water Act	ROLs and DOLs are authorisations to take or interfere with water using water infrastructure or to distribute water under water allocations. They detail and list conditions for operating water infrastructure within a water supply scheme such as: <ul style="list-style-type: none"> • Roles and responsibilities of scheme operators • Infrastructure details for the operation of the scheme • Watercourses authorised to be used for distribution of water • Environmental management rules • Monitoring and reporting requirements Sunwater hold ROL's for Burdekin Houghton and Bowen Broken water supply schemes. Lower Burdekin Water hold a DOL for distributing water to their customers in the Lower Burdekin Water Board area.
Operations manuals for the Burdekin Houghton and Bowen Broken water supply	Other associated documents	The day-to-day operations of the infrastructure managed under a ROL or DOL. Contents include: <ul style="list-style-type: none"> • Operational rules for the scheme

Legislation, statutory instruments, and associated documents	Type	Purpose
schemes, and Lower Burdekin Water		<ul style="list-style-type: none"> • Water releases from dams • Water sharing rules • Seasonal assignment rules
Interim Resource Operations Licence (IROL)	Other associated documents	Describes the details and conditions for operating water infrastructure within a water supply scheme located outside of a water plan area. Townsville City Council holds two IROLs for managing water: one for the Paluma-Crystal Water Supply Scheme and one for Ross River Water Supply Scheme.
Interim water allocations (IWA)	Entitlement to take water	This is an authority that represents a volumetric share of water allowed to be taken within a water supply scheme located outside a water plan area. Townsville City Council holds two IWAs: one IWA for taking water from the Paluma Dam and one for Ross River Dam.

Table 2 shows the water planning activities in the Burdekin Basin to date and the key phases leading up to the final plan. The timeframes are indicative only and may change if circumstances change. Submissions on the Statement of Proposals will inform the development of the draft new plan proposed for release by mid-2024. The community will then have further opportunity to provide comment on the draft new plan on its release, and before the new plan is finalised.

Table 2: Water planning activities in the Burdekin Basin and upcoming timeframes

Date	Milestone
2007	Water Resource (Burdekin Basin) Plan 2007 commenced
2009	Burdekin Resource Operations Plan 2009 commenced
2016	The plan was amended to reflect transitional arrangements and to make it consistent with the new water planning framework. e.g. Burdekin Resource Operations Plan 2009 was replaced with the Burdekin Basin Water Management Protocol, Resource Operations Licences and Distribution Operations Licences and Operations manuals.
2017	<ul style="list-style-type: none"> • Minister's Performance Assessment Report published • Plan expiry postponed to 2019. • 10,800 megalitres (ML) of unallocated water released from the strategic reserve (as mean annual diversion)
2019	<ul style="list-style-type: none"> • Minister's Performance Assessment Report published • Plan expiry postponed to 2023. • Targeted amendment for the Upper Burdekin, Cape Campaspe and Belyando Suttor sub catchments.
NOW	<ul style="list-style-type: none"> • Release of public notice & Statement of Proposals to replace the water plan. • Preliminary public consultation period starts.
Mid 2024	<ul style="list-style-type: none"> • Release draft replacement Burdekin Basin water plan including: <ul style="list-style-type: none"> – Public notice, – Statement of intent, – Draft replacement plan and other supporting statutory instruments, – Technical assessments. • Commence 2nd public consultation period.
Mid 2024	<ul style="list-style-type: none"> • 2nd public consultation period closes. • Start of submission analysis, further policy refinement and drafting of final plan.
End 2024	Consideration of submissions and finalise policies
2025	Release of new plan & supporting documents

Minister's performance assessment reports on the water plan

DRDMW collects streamflow, water use, infrastructure operation and environmental information throughout the life of each plan. This information informs a Minister's performance assessment report that is prepared, at a minimum, every 5 years. Each Minister's report assesses the effectiveness of the strategies for achieving water plan outcomes and makes recommendations for future water planning processes.

In June 2017 and June 2019, Minister's Performance Assessment Reports for the Burdekin Basin Water Plan were published. While the assessments found most plan outcomes were being met, the following issues require consideration:

- further engagement with Aboriginal peoples and Torres Strait Islanders to better understand current and emerging cultural water needs
- further targeted science recommended to improve knowledge of critical flows enabling ecological connectivity
- collection of stream cross-sectional data for watercourses, lakes and springs used for taking supplemented water in the Burdekin Haughton Water Supply Scheme (WSS) to determine scheme impacts on riverine morphology.
- the flow regime required to support fish passage to the mouth of the Haughton River
- observed die-back of riparian vegetation and an overall freshening of the water in Barratta Creek systems and associated estuaries.

Other issues that relate to ROL holders include:

- addressing data provision issues that assist environmental assessment of storage operation and release rules
- amendments to operational documents addressing storage operating limitations for Clare Weir and Bowen River Weir
- consideration for additional release rules to optimise Eungella Dam releases

Emerging issues include climate projections for the plan area which predict an increase in evaporation rates. This may increase water consumption and losses from storages and may reduce persistence of water holes that are used for refugia by stream biota.

About the Statement of Proposals

This Statement of Proposals has been prepared as an accompanying document to the public notice and is an opportunity for the community to learn more about:

- the proposal and reasons for preparing a new water plan and
- how to participate in the process, including through making a submission about the proposals.

Details on how to make a submission are provided in section 11.0 of this document.

The area to which the draft new plan will apply

DRDMW proposes that the new water plan continue to manage surface water in the Burdekin Basin as currently described in the water plan. To address identified management issues, DRDMW proposes to extend the boundary of the water plan as shown in **Figure 3**.

The new water plan will continue to manage surface water (including overland flow) in the following sub catchment areas:

- Lower Burdekin
- Haughton
- Bowen
- Broken
- Belyando Suttor
- Cape Campaspe
- Upper Burdekin

It is also proposed to include management of surface water in the following additional areas:

- Parts of the Ross River and Crystal Creek catchments associated with Townsville's water supply:
 - Ross River Water Supply Scheme
 - Paluma-Crystal Water Supply Scheme.
- The southernmost part of the Lower Burdekin Water Board area to include part of Don River Basin, up to and including Yellow Gin Creek.

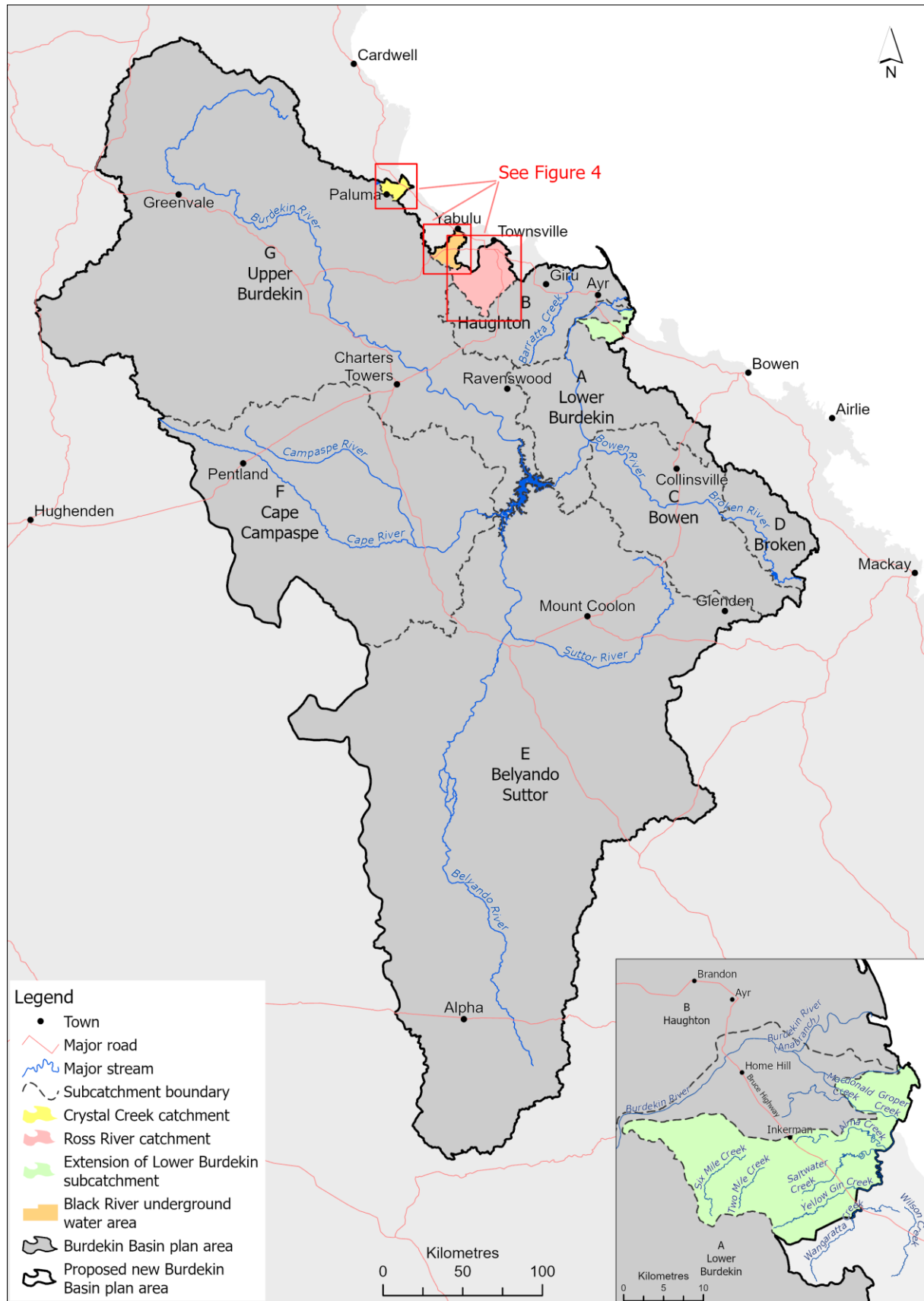
The regulation of overland flow will be considered in these areas.

For groundwater it is proposed to include management arrangement for the Black River underground water area.

In addition, groundwater and surface water management arrangements will be considered to address risks associated with rising groundwater in the Burdekin Haughton Water Supply Scheme.

With the proposed introduction of these new areas into the water plan, DRDMW is also considering changing the name of the plan to better reflect the whole area.

Figure 2: Map of the proposed boundary for the draft new water plan



New management arrangements

Surface water in the Ross River and Crystal Creek catchments

DRDMW is proposing to manage surface water in the Ross River and Crystal Creek catchments associated with Townsville's water supply under the new water plan. Water resources in the Ross River, Paluma Dam, Crystal Creek and Burdekin River are vital in ensuring water security for the growing city of Townsville. Extending the water plan boundary and introducing contemporary management arrangements for the Ross River and Paluma Crystal water supply schemes will help protect Townsville's water supply and identify opportunities for future growth.

Currently, Townsville City Council holds Interim Resource Operations Licences and Interim Water Allocations for its surface water supplies in the Ross River and Crystal Creek. It is proposed to modernise these frameworks and instruments and clarify operational arrangements as part of the water planning process.

During extended drought periods Townsville City Council also source water from the Burdekin Haughton WSS, which is delivered via the existing Haughton pipeline and pump station. The existing Haughton pipeline discharges into the upstream end of the Ross River Dam catchment at Toonpan Creek from where water flows into the natural system to the dam intake. Further development of the Haughton pipeline is currently under construction with Stage 2 to provide water security to Townsville and will be completed in 2025.

Existing entitlements in these areas will be reviewed to ensure entitlement rights are clearly specified and have volumetric limits.

Please see **Figure 4** for a map of proposed new water plan areas.

Black River underground water area

The Black River underground water area is proposed to be managed under the new water plan. The Black River underground water area is currently managed under the Water Regulation 2016. The primary water entitlement holder in the area is Queensland Nickel Incorporated Resources Pty Ltd (QNI), with other use being primarily for stock and domestic purposes. The groundwater resource of the Black River underground water area is considered at its sustainable limit. However, demand for water for domestic purposes is high due to growth in peri-urban areas.

Generally, a water entitlement or water permit is required to take or interfere with underground water in the Black River underground water area. A water entitlement or permit is not required for stock or domestic purposes if the land does not have access to a reticulated supply, and:

- a) The land exists in the same surveyed form it was when the Black River underground water area was formed or
- b) If the land is subdivided after the Black River underground water area was formed, for each individual parcel of land resulting from the subdivision—the size of the individual parcel is at least 40ha.

Managing groundwater in the area under the water plan will provide a robust framework for effective decision making that will assist to safeguard the rights of existing authorised users. It will:

- minimise risk to the resource and
- meet community expectation in managing water resources through transparent and well-informed policies.

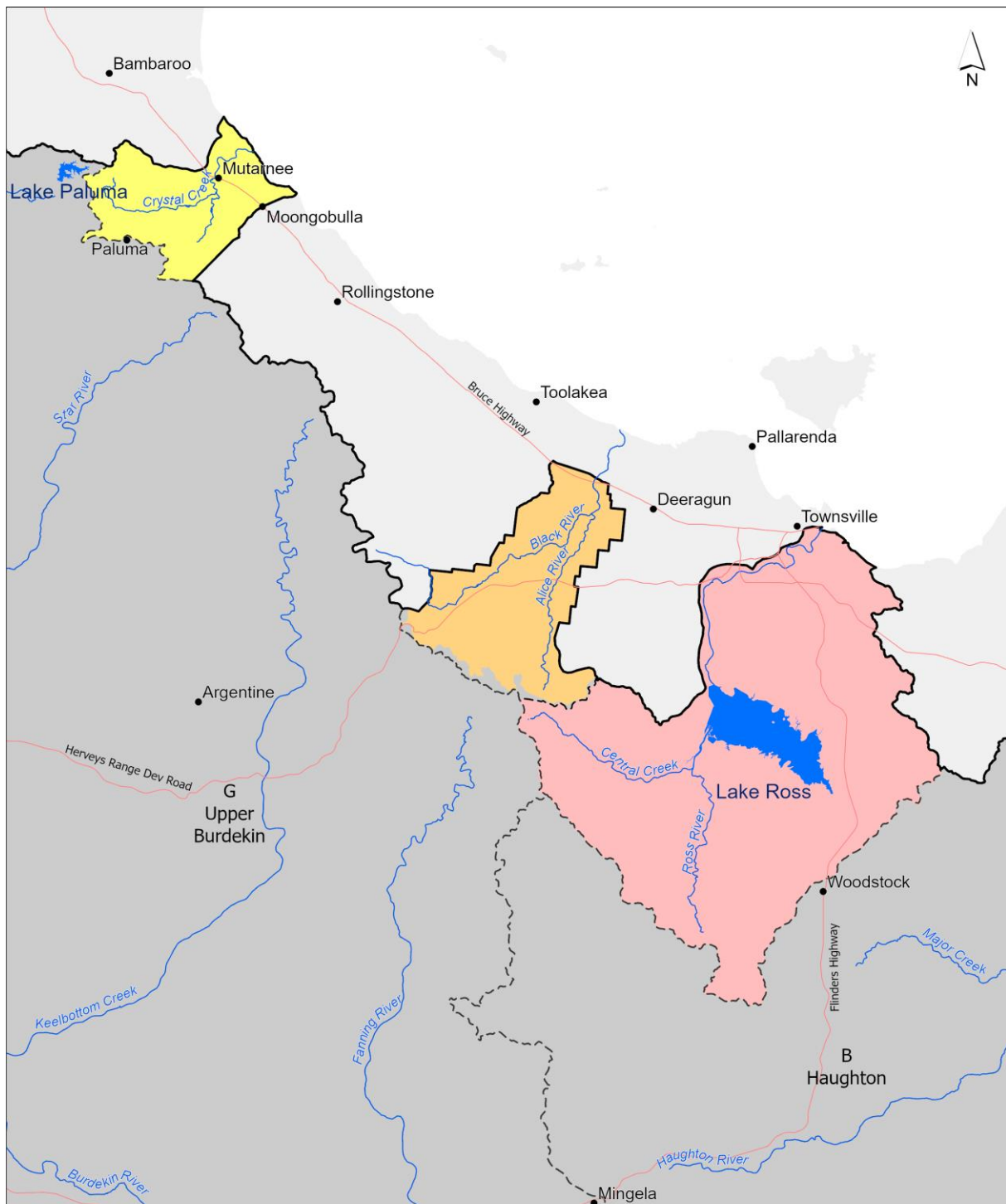
Please see **Figure 4** for a map of proposed new water plan areas.

Lower Burdekin Water

Lower Burdekin Water (LBW) is a category 2 water authority under the Water Act. They hold a Distribution Operations Licence (DOL) under the water plan and are a water service provider under the *Water Supply (Safety and Reliability) Act 2008*.

LBW's statutory purpose is to replenish aquifers and service supply needs for agriculture (sugarcane) and industry throughout its authority area in the Lower Burdekin Delta. Over time, the area supplied by LBW has expanded. The plan review will consider expanding the plan area to include the whole of the LBW area so that the board can apply equitable management arrangements to all their customers.

Figure 3: Proposed new water plan areas



Legend

- Town
- Major road
- Major stream
- - - Subcatchment boundary
- Ross River Dam
- Ross River catchment
- Crystal Creek catchment
- Black River underground water area
- Proposed new Burdekin Basin plan area

Kilometres
0 5 10 20

Review of existing management arrangements

Plan outcomes and measures

The water plan currently includes outcomes that focus the way basin water should be allocated and managed (**Figure 5**). By recognising outcomes, a plan's measures, objectives, and strategies can be tailored to achieve balance across competing interests. The term balance does not necessarily imply each outcome will be given equal weighting or any specific weighting being attached to outcomes. Instead, the outcomes should be seen as a complementary set of desired responses that should result from implementation of a water plan.

The water plan currently divides outcomes into:

- General outcomes including social, economic and cultural outcomes
- Ecological outcomes including both general and specific ecological outcomes.

A preliminary review of outcomes for this plan review found that in most instances the plan outcomes have been met. However, in some instances the water plan did not meet the outcome. Out of the 33 outcomes (including sub outcomes):

- One (1) was not met and was considered a high risk,
- Five (5) were assessed as a medium risk,
- 26 were low risk,
- One (1) was unable to be assessed due to insufficient information available within the life of the plan.

A summary of the plan outcomes at high and medium risk of not being achieved and proposed mitigation actions are detailed in **Table 3**.

Table 3: Summary of plan outcomes with high and medium risk in the Burdekin Basin

Plan outcome	Comment	Status
Section 14(f) to provide a flow regime that supports fish passage in the river reaches to the mouth of the Haughton River	Val Bird and Giru Weirs act as physical barriers to fish passage. The minimum flow rule is not being consistently achieved in the Haughton River. Consultation with responsible agencies e.g. Department of Environment and Science (DES) and Department of Agriculture and Fisheries (DAF) is required to determine appropriate actions to mitigate risks to this outcome.	High
Section 13(1)(a) to maintain the natural variability of flows that support the habitats of native plants and animals and migratory birds in watercourses, floodplains, wetlands, lakes and springs	This outcome has been identified as medium risk due to the risk identified for Lower Burdekin lagoons (including the Barratta Creek system). Actions to mitigate the risk to the Barratta system will also reduce the risk to this outcome. Variability of flows in other parts of the basin have not been significantly altered.	Medium
Section 13(1)(b) to provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— (i) allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments	This outcome has been identified as medium risk due to the presence of physical barriers preventing aquatic movement. Consultation with responsible agencies (e.g. DES and DAF) is required to determine appropriate actions to mitigate risks to this outcome.	Medium
Section 13(1)(b)(iii) to provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that deliver	Ecological connectivity and the delivery of nutrients, water and sediment that support ecological processes can be impeded by fewer natural flood events or by barriers (bunds, levees, weirs, and non-operational fishways). Impediments to a natural flow regime may have impacts	Medium

Plan outcome	Comment	Status
water and sediments throughout the plan area to support river-forming processes	on freshwater inputs to floodplain wetlands, estuaries and the Great Barrier Reef Lagoon. As part of any EIS process, water infrastructure proposals would need to demonstrate how they mitigate any risks to this outcome.	
Section 14(d) to ensure there are no further impacts on natural creek flows in the Barratta Creek system	Investigate options for managing groundwater seepage and farm run-off into the Barratta Creek system.	Medium
Section 14(e) to provide a flow regime that supports fish passage in the river reaches from the Clare Weir impoundment to the mouth of the Burdekin River	This outcome has been identified as a medium risk due to the presence of physical barriers (such as sand dams) preventing fish movement. The Clare Weir fish lock is effective at passing a variety of fish species, however, it is prone to break down. Consultation with responsible agencies (e.g. DES and DAF) is required to determine appropriate actions to mitigate risks to this outcome. As part of any EIS process, water infrastructure proposals would need to demonstrate how they mitigate any risks to this outcome.	Medium
Section 12(k) to support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area	Targeted engagement with Aboriginal peoples and Torres Strait Islanders will be undertaken as part of the plan review.	Unable to be assessed

In developing a new water plan for the Burdekin Basin, existing plan outcomes will be reviewed to ensure outcomes in the new plan continue to support the sustainable management of water. This review will consider the emerging demand for water, proposed water infrastructure and outcomes relevant to the new areas of the plan including protection of urban water supplies.

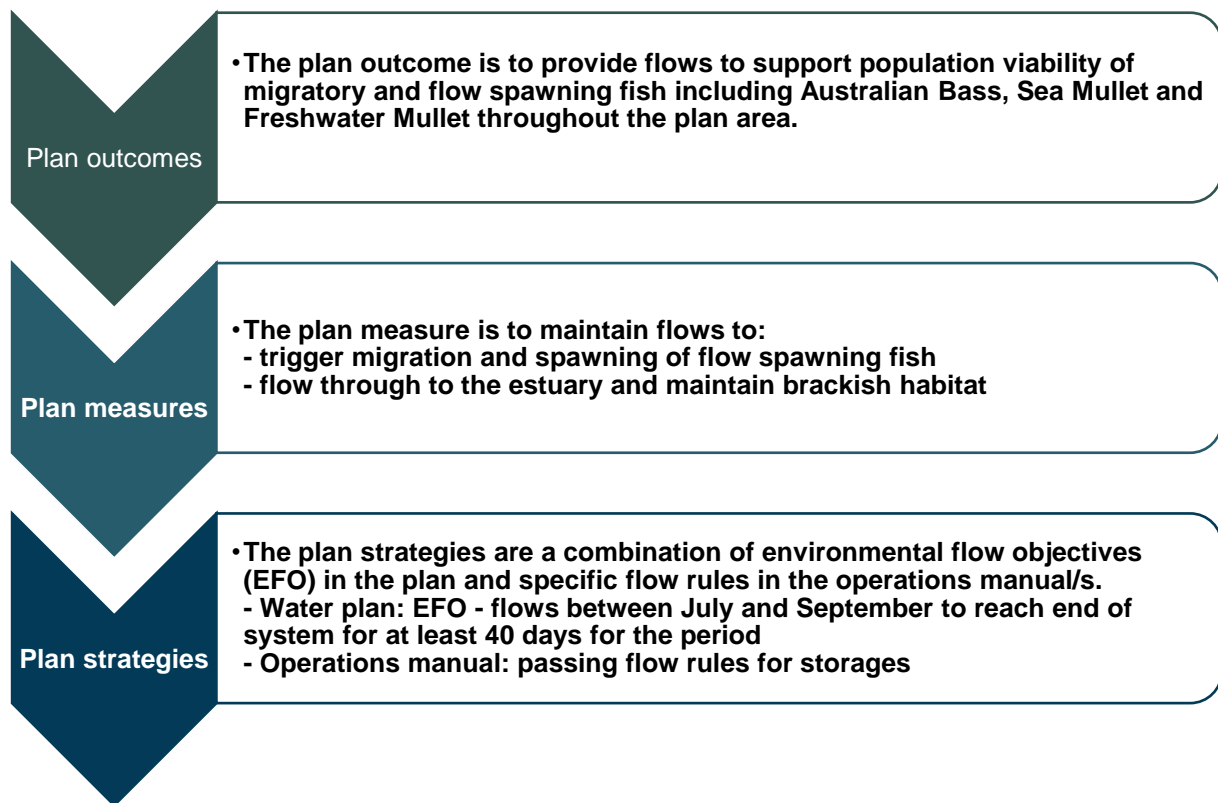
The plan outcomes will also consider the social and economic benefits of the proposed infrastructure against the effect, both individually and cumulatively, on flows and the impact of these proposals on:

- existing water users
- towns and communities
- cultural values and aspirations, and
- downstream environments, including the Great Barrier Reef.

DRDMW has not yet assessed the risk to the plan outcome protecting water related cultural values of Aboriginal and Torres Strait Islander communities. Engagement with Traditional Owner groups in the water plan area will be a key aspect of the plan review. This will allow Traditional Owner interests, rights and needs to be considered. Water plan outcomes should reflect the cultural, spiritual, and social values of Aboriginal people and Torres Strait Islanders. An assessment of plan outcomes will consider these values and the connection of Aboriginal peoples and Torres Strait Islanders to land and waters within the Burdekin Basin including new areas of Ross River, Crystal Creek and Black River underground water area. Additional plan outcomes relating to cultural values will be considered based on consultation with Aboriginal peoples and Torres Strait Islanders connected to country in the plan area.

The current water plan does not specify plan measures. Contemporary water plans provide can measures as a way to contribute to achieving the outcomes by supporting the assessment and implementation of the plan. As part of a new water plan, it is proposed to consider the introduction of measures.

Figure 4: Example of how plan outcomes relate to measures and strategies



Plan flow objectives

Water plans set out two main types of objectives known as Environmental Flow Objectives (EFOs) and Water Allocation Security Objectives (WASOs). Stating EFOs and WASOs in a water plan ensures the environment and existing water users are protected from decisions that could impact critical water or erode water rights. For example, impacts associated with releasing unallocated water, the operation of infrastructure and water trading would have to be minimised so that they meet the water plan's objectives.

EFOs and WASOs stated in the existing water plan are statistical values derived from the Department of Environment and Science's Burdekin Basin hydrologic models based on an assessment of historical stream flows from 1890 to 2004. The EFOs, currently stated in Schedule 5 of the water plan, were established to mimic seasonal wet and dry cycles across the Burdekin Basin. EFOs are proposed to be reviewed and contemporised based on current scientific understanding. Revised EFOs would be designed to reflect environmental needs and values specific to water plan areas.

WASOs, currently stated in Schedule 6 of the water plan, were established to protect the rights of water allocation holders across the Burdekin Basin. WASOs are proposed to be reviewed and contemporised to maintain security of water allocations.

In preparing a new water plan, the hydrological model has been updated to include additional data and information about flows in the Burdekin Basin since 2004 and include Ross River and Crystal Creek catchments. This model will be used to review the suitability and effectiveness of EFOs and WASOs. Given there will be a new model with an extended data period and our improved understanding of flow measures, the objectives and performance indicators may be different from those currently in the water plan. Importantly, decisions about setting EFOs and WASOs for the new water plan will consider existing and new plan outcomes, which aim to protect existing users, cultural values linked to water and the environment. New EFO's and WASO's will also be considered for the Ross River and Crystal Creek catchments reflective of the desired outcomes for these areas.

Other plan strategies

The water plan states several other management strategies used to achieve plan outcomes. These strategies, which will be discussed in more detail in the following sections, will be reviewed including:

- Water markets and trading
- Water sharing and environmental management rules
- Unallocated water
- Review of existing entitlements
- Overland flow management

Note: Metering has a key role in implementing these strategies. Currently, some water licences in the plan area are not metered. Metering promotes equity and provides information to support water management decisions. Accurate water accounting is needed to measure the effectiveness of rules and strategies in meeting water plan outcomes. Metering will continue to be a requirement in the future.

For more information about metering for unsupplemented water visit the Business Queensland website: www.business.qld.gov.au (search for “water metering”).

Water markets and trading

One of the main strategies water plans adopt to promote the efficient use of water, is establishing water markets. Water markets provide certainty for the water industry and help create a stable and more attractive business environment. Trading water entitlements can facilitate better decision making about usage and requirements, promote efficiency and potentially make businesses more profitable.

DRDMW has developed several initiatives to facilitate water markets and stimulate trade. These include better market matching tools to reduce search and transaction costs, systems and process streamlining and better resource planning.

Each water market is defined by the total volume of water entitlements as well as the location and extent of zones within each water management area or water supply scheme. There are three kinds of trade specified in the water plan:

1. **Trade of water allocations:** Trading water allocations within a zone is the simplest type of this trade and occurs through the transfer of title between parties. Trading water allocations between zones is more complex with the rules and limitations specified in the water management protocol. The schemes and areas with established water markets for trading water allocations include:
 - Burdekin Haughton WSS
 - Haughton Water Management Area
 - Bowen Broken WSS
 - Bowen Broken Water Management Area
 - Cape Campaspe Water Management Area
 - Upper Burdekin Water Management Area.

In 2021-22, there was 24 212ML of supplemented surface water permanently traded in the Burdekin Haughton WSS, 1 600ML in the Bowen Broken WSS and an additional 18 938ML permanent transfers traded with water and land together. A total of 1 743ML of unsupplemented water was permanently traded across the Bowen, Cape Campaspe, Haughton and Upper Burdekin Water Management Areas. Further market information on water trading is available at: www.business.qld.gov.au (search for “water markets and trading”).

2. **Relocation of water licences:** In the Belyando Suttor sub catchment, the water market is built around the relocation of water licences. Licences can move from one location to another within the same zone according to rules in the water management protocol. Since the introduction of the relocatable licence framework in 2019 no permanent trades have been recorded.
3. **Seasonal water assignment:** Seasonal water assignment involves short-term trades of unused portions of water, for the remainder of the water year. A seasonal water assignment framework is established across the plan area and is undertaken in accordance with the rules in the water management protocol or relevant operations manual.

In preparing a new water plan, DRDMW will consider options to improve the water trading frameworks for water allocations. There is no additional stream flow information available that would support improvements in the trading framework for the Belyando Suttor sub catchment, so it is not proposed to review these arrangements at this time.

Water sharing and environmental management rules

The water plan sets up a framework for water sharing and environmental management rules. Water sharing and environmental management rules describe arrangements for the day-to-day access to the available water. The framework is implemented through several different instruments including the Burdekin Basin water management protocol, resource operation licences, distribution operation licences and access conditions on water entitlements.

As part of developing a new plan for the Burdekin Basin, the rules in the different instruments will be reviewed focusing on consistency alongside:

- considering where and how water sharing rules can be optimised or improved
- considering how adaptive existing water sharing rules are, especially in relation to changing environments
- protecting town water supplies and ecosystem processes
- reviewing existing conditions on entitlements
- reviewing scheme operating rules.

Unallocated water

Water plans identify and reserve appropriate volumes of unallocated water to meet future demand while protecting existing water users, the environment, and cultural values. In 2007, the Burdekin Basin water plan established reserves of unallocated water across the basin to support demand and growth

(**Table 4**). In establishing the current unallocated water reserves, consideration was given to the type, location, purpose and volumes of water associated with future demands, while ensuring existing water users and the environment are protected.

Since the creation of the plan in 2007, there has been one release of water from the unallocated water reserves. In 2016, 10,800ML of unallocated was granted from the strategic reserve for a 'State purpose' related to a Galilee Basin coal project in the Belyando Suttor subcatchment. There is 9,200ML remaining in that reserve. On completion of the project, this entitlement will return to the state and be made available as unallocated water.

The water plan review will include a review of current unallocated water reserves and the process for releasing unallocated water. This review will be informed by the Burdekin Basin strategic planning process, regional and town water supply water security assessments, social and economic assessments, environmental risk assessments, cultural values assessment, submissions, consultation with stakeholders and expressions of interest. Any changes to the reserves will reflect government priorities and commitments, including commitments for progressing the Big Rocks Weir Project, Pioneer-Burdekin Pumped Hydro Energy Storage Project and Burdekin Falls Dam Raising Project. The review will also consider changes in demand, emerging issues and climate change projections. Importantly, the new water plan will continue to support existing water users and the environment.

Water infrastructure proposals

There are several proposals in the Burdekin region for bulk water infrastructure that have recently or are currently being assessed or under investigation. These proposals include the raising Burdekin Falls Dam, the construction of Big Rocks Weir, Urannah Dam, Pioneer-Burdekin Pumped Hydro Project and Hells Gates Dam. The Office of the Coordinator-General is coordinating the Environmental Impact Statement process for the Burdekin Falls Dam Raising project and the Big Rocks Weir project under the *State Development and Public Works Organisation Act 1971*. Further information on these projects is available on the Department of State Development, Infrastructure, Local Government and Planning's website: www.statedevelopment.qld.gov.au/coordinator-general/assessments-and-approvals/coordinated-projects/current-projects.

Proponents of coordinated projects are required by the Office of the Coordinator-General to undertake cumulative impact assessments as part of the Environmental Impact Statement process. The water plan also considers cumulative impacts by setting a catchment-wide approach to water management. The cumulative hydrological impacts of proposed water infrastructure projects will be a key consideration when reviewing unallocated water reserves.

Current water plan reserves that are in sub catchments where water infrastructure proposals are under investigation are described below (**Table 4**):

- 150,000ML in a strategic reserve has been identified specifically for raising the Burdekin Falls Dam by two metres. This reserve is in the Lower Burdekin and Haughton sub catchments.
- 150,000ML in a strategic reserve for water infrastructure is identified in the Bowen Broken sub catchments.
- 20,000ML (10,000ML of general reserve and 10,000ML of strategic reserve for State purpose) is available in the plan in the Upper Burdekin sub catchment where the proposals for the Big Rocks Weir and Hells Gates Dam are located.

Table 4: Current unallocated water reserve available in the water plan

Reserve	Mean annual volume (ML) by sub catchment area							
	A – Lower Burdekin	B – Haughton	C – Bowen	D – Broken	E – Belyando Suttor	F – Cape Campaspe	G – Upper Burdekin	Total
General reserve	50,000	5,000	0	0	130,000	5,000	10,000	200,000
Strategic reserve for State purposes	0	0	0	0	9,200*	5,000	10,000	35,000
	Nominal volume (ML) by sub catchment area							
SunWater reserve	0	0	8,744	0	0	0	0	8,744
Strategic reserve for a future raising of Burdekin Falls Dam	150,000	0	0	0	0	0	0	150,000
Strategic reserve for water infrastructure for the Bowen and Broken sub catchments	0	0	150,000	0	0	0	0	150,000

* On completion of an existing State project, 10,800ML will return to the State and the total available volume held in this strategic reserve will be 20,000ML.

Pioneer-Burdekin Pumped Hydro Energy Storage project

In late 2022, the Queensland Government announced the commencement of detailed analytical studies for a potential pumped hydro energy storage (PHES) facility in the western Pioneer Valley. Components of the project could sit within the Burdekin water plan area and as such will be subject to the requirements of the water plan.

Qld Hydro has been established by the Queensland Government to design, deliver, operate and maintain long duration pumped hydro energy storage assets. It is undertaking detailed studies to understand the impacts and benefits of the proposed project and advise the Queensland Government on whether it should proceed. Qld Hydro continue to engage with the community on the project and to learn more about consultation activities and have your say, visit the Queensland Energy and Jobs Plan website at: www.qld.gov.au/energyandjobsplan.

The new water plan is being developed to ensure that the Burdekin's water resources are sustainably managed. The water plan review will consider the need for unallocated water across the Burdekin, including any required for a pumped hydro project. This will involve assessment of the needs and perspectives of current users, impacts on the environment, economic and social considerations, the cultural values of water to Aboriginal people and Torres Strait Islanders and the potential implications of climate change.

Review of existing entitlements

Existing entitlements will be reviewed for consistency with the water plan provisions including ensuring entitlements have a volumetric limit and entitlements are clearly specified.

Overland flow management

Overland flow is water that runs across the land after rainfall, either before it enters a watercourse, after it leaves a watercourse as floodwater, or after it rises to the surface naturally from underground.

The water plan regulates the take or interference with overland flow water. The water plan allows new works to be constructed to take overland flow water for any purpose (such as irrigation) provided the capacity of the works are less than 250ML. The take of overland flow for stock and domestic purposes, or to satisfy the requirements of an authority under the *Environmental Protection Act 1994* is not limited.

In developing a new plan for the Burdekin Basin, the ways in which overland flow water is managed and measured will be reviewed. This includes exploring ways to clarify overland flow entitlement products through licencing, accounting, and an assessment of existing storages. Further, the measurement of overland flow is proposed to be improved via the overland flow measurement program. This program was first introduced in the Murray-Darling Basin and will be gradually implemented across Queensland to provide a standardised methodology for overland flow measurement. Further information is available online at www.rdmw.qld.gov.au (search 'Program to improve the measurement of overland flow').

The information obtained from the water plan review will help to underpin and build a new plan based on the best available information. The new plan is proposed to aid in improving water accounting across the plan area, including for overland flow water.

Assessments

In developing a new water plan several additional assessments will also be undertaken including:

- Updated hydrological and ecological modelling
- Cultural values
- Climate change
- Linkages with the Great Barrier Reef 2050 Plan.

Updated modelling

Hydrological modelling for surface water in the current plan area will be updated from the current Integrated Quantity and Quality Model to the latest national eWater Source modelling platform. The modelling will include climate change scenarios. This model will contribute to the review of WASOs and EFOs and underpin water trading frameworks and setting unallocated water reserves.

Based on the Department of Environment and Science's Environmental Flow Assessment Program, ecological modelling will also be undertaken to identify how changes to hydrology impact on species, aquatic ecosystems, communities, ecosystem functions and/or processes. This assessment will contribute to the review of EFOs to ensure the new water plan continues to protect environment flows.

Considering cultural values

Aboriginal peoples and Torres Strait Islanders have a significant and deep connection to land and waters. With this, they have a wealth of cultural knowledge that can be used to better protect and manage natural resources. Therefore, it is vital cultural knowledge, as well as cultural, environmental, and economic values and aspirations of Aboriginal Peoples and Torres Strait Islanders are incorporated into water plans.

The *Mineral, Water and Other Legislation Amendment Bill 2018* (MWOLA) passed in October 2018 amended the Water Act such that water plans, when reviewed, are required to include plan outcomes for cultural values. The MWOLA provisions relate to water plans protecting cultural values of water and have regard to the importance of water resources to Aboriginal peoples and Torres Strait Islanders.

The importance of this change to the Water Act, was recognised in the Burdekin Basin's Minister's Performance and Assessment Report for 2019. This report identified a need for further engagement with Aboriginal peoples and Torres Strait Islanders to ensure cultural values were incorporated into the water plan. Consultation with Aboriginal peoples and Torres Strait Islanders will be a key aspect of the water plan review. This engagement will facilitate a better understanding of current and emerging cultural water needs in the plan area. It will also allow DRDMW to incorporate cultural values and aspirations of Aboriginal peoples and Torres Strait Islanders within plan outcomes and unallocated water reserves.

Considering climate change

Alongside including plan outcomes for cultural values, MWOLA amended the Water Act to require water plan reviews to consider the water related effects of climate change on water availability. For the Burdekin Basin, this is particularly important as decisions about establishing unallocated water for proposed water infrastructure may have implications beyond the ten-year life of the plan.

State-wide projections, based on data presented on Queensland's Long Paddock website (www.longpaddock.qld.gov.au), indicate the water plan area could expect an increase in average daily temperature and annual potential evapotranspiration, and changes in the annual rainfall. Increased evaporation may lead to increase losses from farm storages and increase crop water use, potentially resulting in water users using additional surface water or groundwater resources. An increase in evaporation may reduce the persistence time of waterholes used as refuges in dry times by flora, fauna and other organisms.

A review of the Burdekin Basin hydrology will provide insight into whether there has been a significant change in water availability since plan commencement in 2007. Assessing the impacts of potential climate change on stream flows will be based on climate projection scenarios for the year 2030 and 2050. A range of General Circulation Models (GCMs) from the Integrated Panel on Climate Change, Assessment Report 5, Coupled Model Intercomparison Project (Phase 5) that align with the best reproduction of observed climate in Queensland, will be used for this assessment.

The water plan review will consider these projections to determine whether any changes to water management arrangements under the water plan are required to mitigate the potential risks. Further information on climate change is available at: www.longpaddock.qld.gov.au.

Linkages with Great Barrier Reef Plan

The Reef 2050 Long-Term Sustainability Plan is the overarching Australian and Queensland government action plan to work with partners to protect and manage the Great Barrier Reef. The Reef 2050 Water Quality Improvement Plan is a joint commitment of the Australian and Queensland governments that seeks to improve the quality of water flowing from the catchments adjacent to the Great Barrier Reef. The long-term (2050) outcome is that “Good water quality sustains the outstanding universal value of the Great Barrier Reef, builds resilience, improves ecosystem health and benefits communities”. Water quality targets have been set for the catchments adjacent to the Great Barrier Reef, based on modelling and other scientific information. The targets define the reduction in nutrients and fine sediment required by 2025.

Agricultural producers in the Burdekin region are also required to meet reef regulations to minimise the loss of sediment and nutrients to the Great Barrier Reef.

The new water plan will continue to align with the Reef plan outcomes. Under the Water Act quantity, frequency and timing of flows will be managed to support the Reef. The current plan outcomes were chosen to provide for a flow regime that:

- Maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon
- Maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green
- Support productivity in the receiving waters of the Great Barrier Reef and inshore reefs.

The plan review will examine the current plan outcomes and determine if new ecological flow requirements for end of system flow volumes are needed. A new hydrological model for the plan will be developed to support the review in order to minimise water resource development effects on the Reef.

Linkages with environmental values and water quality

The Environmental Protection (Water and Wetland Biodiversity) Policy 2019 aims to protect Queensland’s water environment while allowing for development that is ecologically sustainable. Environmental values and water quality objectives for surface and ground water in the Burdekin, Haughton and Don Basins were finalised in 2022, and for Townsville Region waters they were finalised in 2013.

Water Plans consider environmental values and water quality where they relate to water flow. The new plan will consider water quality objectives and environmental values established under the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 as part of development of a new water plan.

Consultation and next steps

Publication of the notice to prepare a draft plan and this accompanying Statement of Proposals marks the start of the formal submission period, which is from 10 March 2023. These submissions will inform the overall direction of the draft plan. Submissions on the Statement of Proposals will close at 5pm on 5 May 2023.

DRDMW, in partnership with Sunwater will provide opportunities for community information sessions and engagement in the coming months. Information is available on DRDMW’s website including instructions on registering for any specific opportunities. For other Burdekin initiatives, key stakeholders and the public will be given opportunity to provide input at various stages of these different initiatives.

DRDMW will analyse submissions and address written feedback in preparing a draft plan which is proposed to be released for further consultation and submissions.

This provides a further opportunity for water users and other interested parties to make formal submissions on more specific strategies and proposals for the draft plan.

Your local departmental officers are also available to talk to you about what these changes may mean for you. Should you have any further enquiries, please contact WPBurdekin@rdmw.qld.gov.au or 1800 232 100.

How to make a submission

Anyone can make a submission on the Statement of Proposals. Submissions may be made in writing and emailed or posted to DRDMW or made online by 5pm 5 May 2023.

To make a written submission, please use the submission form included in this document (refer Appendix A) and complete the checklist on the form to ensure the submission is properly made. Only properly made submissions relating to water planning issues will be considered in preparing the new water plan. Other issues raised may be considered out of scope.

Mail

Postal address, Townsville:

Manager
Attn: Manager Water Planning and Science
Water Services
PO Box 5318
TOWNSVILLE QLD 4810

Street address, Townsville:

Chief Executive
Attn: Manager Water Planning and Science
Level 9, 445 Flinders Street
TOWNSVILLE QLD 4810

Email

WPBurdekin@rdmw.qld.gov.au.

Online

www.getinvolved.qld.gov.au.

Enquiries

Phone the Department of Regional Development, Manufacturing and Water on 1800 822 100.

All submissions will be treated with sensitivity and wherever possible in confidence. However, submissions may be viewed by other parties under the provisions of the *Right to Information Act 2009* and the *Information Privacy Act 2009*.

Appendix A Submission Form

(Please use a ballpoint pen to complete this submission).

Office Use Only

Submission No:.....

Date Received:.....

Title and surname

First name(s)

Address

Postal address (if different)

Organisation

Position

Telephone

Mobile

Facsimile

Email

Signature(s)

Date

Which interest group do you primarily represent? (You may tick more than one box)

- | | | |
|---|---|--|
| <input type="checkbox"/> Irrigator (surface water) | <input type="checkbox"/> Riparian landholder | <input type="checkbox"/> Research/academic |
| <input type="checkbox"/> Irrigator (groundwater) | <input type="checkbox"/> Horticultural interests | <input type="checkbox"/> Tourism industry |
| <input type="checkbox"/> Dryland farmer | <input type="checkbox"/> Local government | <input type="checkbox"/> Commercial fisher |
| <input type="checkbox"/> Grazier | <input type="checkbox"/> Stock and domestic water user | <input type="checkbox"/> Recreational fisher |
| <input type="checkbox"/> Mining industry | <input type="checkbox"/> Environmental interests | <input type="checkbox"/> Small business |
| <input type="checkbox"/> Water service provider | <input type="checkbox"/> Commerce/development | <input type="checkbox"/> NRM Board/Catchment |
| <input type="checkbox"/> Community group (please specify) | <input type="checkbox"/> Aboriginal and/or Torres Strait Islander peoples | <input type="checkbox"/> Industry group (please specify) |
| <input type="checkbox"/> Other (please specify) | | |

In which part of the draft new water plan area are you located?
(You may tick more than one box.)

- | | |
|---|---|
| <input type="checkbox"/> Lower Burdekin Water board area | <input type="checkbox"/> Crystal Creek catchment |
| <hr/> | |
| <input type="checkbox"/> Burdekin Haughton Water Supply Scheme area | <input type="checkbox"/> Ross River catchment |
| <hr/> | |
| <input type="checkbox"/> Sub catchment A or B (Lower Burdekin or Haughton) outside the scheme area | <input type="checkbox"/> Bowen Broken Water Supply Scheme area |
| <hr/> | |
| <input type="checkbox"/> Sub catchment E Belyando Suttor | <input type="checkbox"/> Sub catchment C or D (Bowen or Broken) outside the scheme area |
| <hr/> | |
| <input type="checkbox"/> Sub catchment G Upper Burdekin | <input type="checkbox"/> Sub catchment F Cape Campaspe |
| <hr/> | |
| <input type="checkbox"/> Black River underground water area <input type="checkbox"/> Other (please specify) | |

What type of water access do you have?

- | | |
|--|---|
| <input type="checkbox"/> Supplemented surface water allocation | <input type="checkbox"/> Water supply agreement |
| <hr/> | |
| <input type="checkbox"/> Unsupplemented surface water allocation | <input type="checkbox"/> Water licence |
| <hr/> | |
| <input type="checkbox"/> Overland flow | <input type="checkbox"/> Other (please specify) |
-

What aspects in the Statement of Proposals for the new draft water plan and water management protocol do you support?

What issues concern you?

How do you think the draft new water plan can be improved to address these or other issues?

(Please note the scope of the new water plan is limited to the management and allocation of water. Any issues or comments relating to the assessment or approval of infrastructure proposals should be referred to the Office of the Coordinator-General. For more information please visit: www.statedevelopment.qld.gov.au/coordinator-general)

A water consultation group may be formed by DRDMW to assist in identifying water management issues, reviewing information, reporting on community perception or to provide advice on behalf of the community/representative groups in relation to the draft new plan.

Do you wish to nominate to participate in a water consultation group?

☐ Yes ☐ No

If yes, please provide any additional details about the stakeholders/area you would best represent.

Do you have comments on the proposed consultation arrangements?

☐ Please tick this box and attach a detailed submission if more space is required.

Checklist

Please follow these five steps to ensure the submission is completed correctly:

- ☐ Details of each person making the submission have been specified.
- ☐ Each person or authorised representative making the submission has signed the submission form.
- ☐ The grounds for making the submission, and the facts and circumstances relied on in support of the submission have been stated.
- ☐ If additional space is required, the box at the end of the submission form has been ticked and the detailed submission is attached.
- ☐ Submission made by the closing date Fri 5pm 5 May 2023.

Department of Regional Development,
Manufacturing and Water
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Queensland
Government