

Paradise Dam

Fact Sheet: Burnett River sub-scheme Network Capacity Assessment – findings

March 2022

Background

Sunwater has undertaken a project to understand constraints in the channel, pipeline and pump station infrastructure that delivers irrigation water throughout the Burnett River sub-scheme. This project also examined how the infrastructure will need to be upgraded over time to meet changing demand.

This Fact Sheet shares the initial findings of the project, which has been undertaken separately to, but in parallel with, the Paradise Dam [Options Evaluation](#).

Information about the need for, priorities and challenges of this project were shared in the following Fact Sheet: [Bundaberg Water Supply Scheme Network Capacity Assessment, March 2021](#).

Project objectives

The Network Capacity Assessment Project set out to answer the following questions:

- What are the current infrastructure (pump stations, channels, and pipelines) constraints?
- What infrastructure upgrades can alleviate these constraints?
- What further infrastructure upgrades are required to meet future demand, specifically in the Isis and Woongarra systems?
- What are the indicative infrastructure upgrade costs?

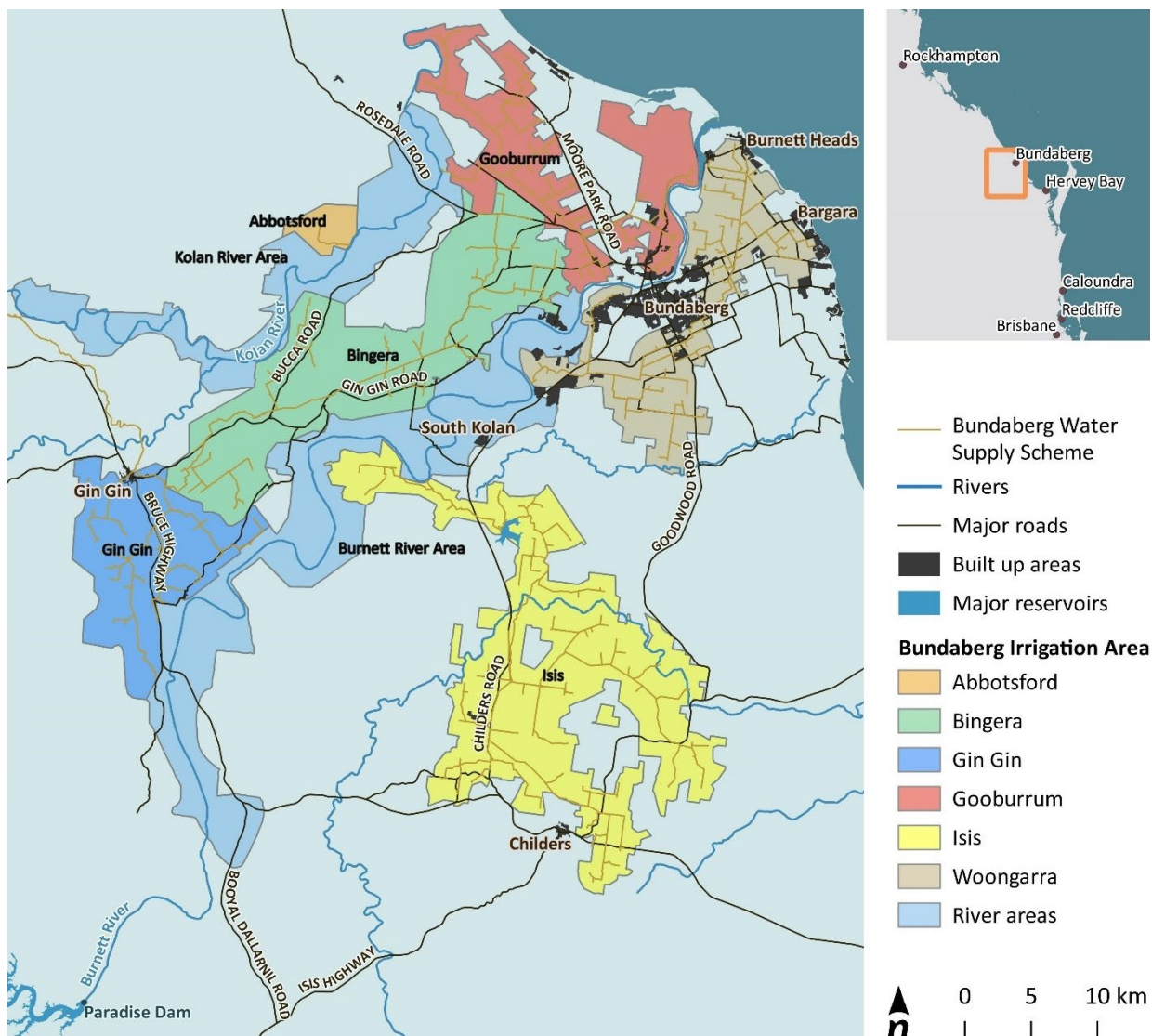
The Future Water Demand Study (refer to the following Fact Sheet for more information: [NCEconomics Future Water Demand Study](#)) has provided information about how and where water demand in the Burnett River sub-scheme will change over time as an input to this project.

The Woongarra and Isis irrigation areas in the Burnett River sub-scheme (refer to Figure 1) were the priority locations considered, as these areas receive water from Paradise Dam.

Project activities

The following activities were undertaken for this project:

- A digital representation of the irrigation network, from river to customer, was developed in Sunwater's Geographic Information System (GIS). This included all pumps, balancing storages, channels, pipes, regulating structures, customer offtakes, etc.
- A time-varying hydraulic model was prepared using software linked to the Sunwater GIS (for simulations and output).
- The current and future customer demands, and irrigation patterns were modelled.
- Hydraulic constraints were identified, and concept design indicative cost estimates prepared for potential infrastructure upgrades.



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Key findings

The project has provided Sunwater with a good understanding of demand at each offtake throughout the Woongarra and Isis irrigation areas along with a good representation of the total peak demand for each section of pipe or channel, now and through to 2050.

This work has identified that a number of infrastructure upgrades are required to meet the projected water demand out to 2050.

The upgrades have been grouped into two tranches based on the modelled date of implementation and criticality to the operation of the overall system.

Tranche 1:

- Required by 2028 to alleviate existing constraints and to support short to medium-term demand growth.
- Facilitates delivery of an additional approximately 48,000 megalitres (ML)/year for the purposes of supplementing changing crop types from sugarcane to more water intensive tree crops.
- Projects in the Isis irrigation area include:
 - a first stage upgrade to the Don Beattie Pump Station
 - increasing the capacity of Quart Pot Creek Pump Station to the Farnsfield area and siphon upgrades.
- Projects in the Woongarra irrigation area include upgrading the Woongarra Pump Station and siphons at Childers Road and Price Street.

In both the Isis and Woongarra irrigation areas, Tranche 1 recommendations include the installation of telemetry monitoring technology (i.e., real-time electronic data on water levels) to enable channels to be safely operated at higher than design capacity.

Works to alleviate channel constraints are likely to be staged over time as required to meet growing water demand. The funding approach for these works is yet to be confirmed.

Tranche 2:

- Required by 2040 to support further long-term growth in water demand.
- Facilitates delivery of an additional approximately 35,000 ML/year to new irrigation areas.
- Requirement would be triggered by growth in demand outside the existing scheme infrastructure (but within the existing boundary of the Burnett River sub-scheme).
- Further work is required to determine the priority projects for this tranche.

What do these findings mean for customers?

This project has provided information that can be relied upon when determining where water can be delivered in the Burnett River sub-scheme in the short-term. It is an important step forward in planning for network upgrades to ensure we can meet customer needs into the future.

Given the known constraints, Sunwater continues to encourage customers to contact us when planning on-farm irrigation changes and not to make assumptions about the capacity of the Sunwater distribution system.

Further work required

- Kolan sub-scheme:
 - Modelling of the Abbotsford, Bingera, Gin Gin and Gooburrum irrigation areas is required to better understand and prioritise future network improvement opportunities.
- Burnett River sub-scheme:
 - The timing, location and approval requirements for upgrades to the network in the Burnett River Sub-scheme requires further assessment to better inform an investment decision for that infrastructure.

Next steps

Sunwater will develop a separate business case to further investigate capacity constraints within the Bundaberg Water Supply Scheme's existing distribution network to support the region's diversification and expansion into high value perennial tree crops like macadamias and avocados.

Sunwater will continue to engage with customers to develop plans to alleviate network constraints so that water distribution can keep pace with demand. The funding approach for this work is yet to be confirmed.

Stakeholder engagement

Sunwater is committed to ongoing engagement with our customers and the broader community to ensure transparency during the works at Paradise Dam and associated projects, such as distribution network improvements. We will continue to share updates as the work progresses with a dedicated Community Reference Group and Paradise Dam Industry Forum that include representatives from local government, peak bodies, customers, and downstream residents. Information is also regularly shared on Sunwater's Paradise Dam Facebook [page](#) and the project webpages on the Sunwater website.

Questions?

Please contact us on 3120 0270 or paradise.dam@sunwater.com.au with any questions about this project. For general enquiries, please contact customer support by phone on 13 15 89 or live chat via [sunwater.com.au](https://www.sunwater.com.au), Monday-Friday 8.30am-4.30pm.