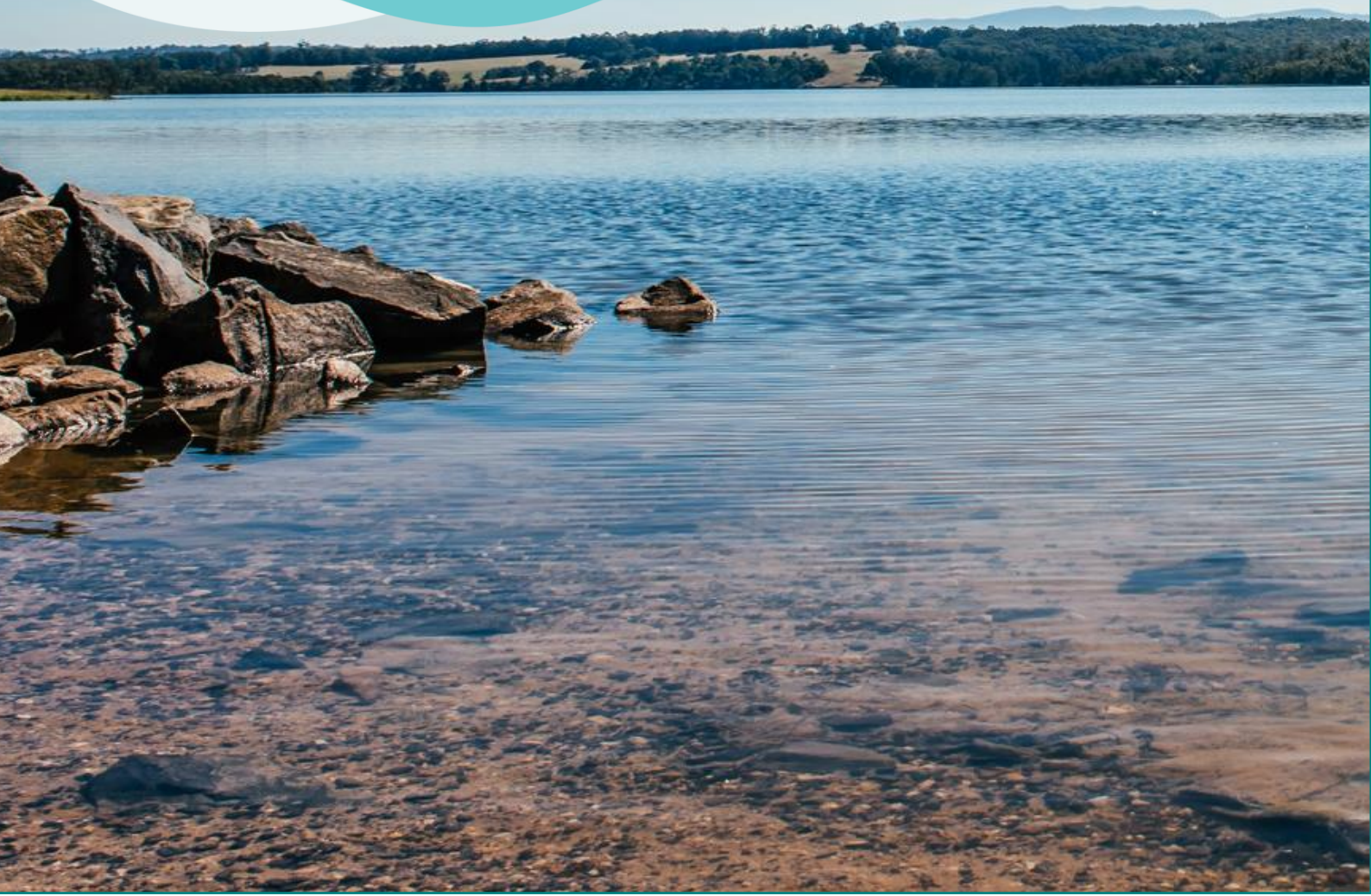




Werribee System Reconfiguration Project

Werribee Customer Engagement
Paper 3 – Recycled water scheme

20 May 2024



Paper intent

At the second Customer Reference Group (CRG) meeting on 10 April 2024, Southern Rural Water (SRW) clarified customer requirements for a future irrigation recycled water supply for inclusion in a preliminary business case.

The third meeting aims to discuss and optimise a proposed new recycled water treatment scheme based on customer requirements. This paper includes an overview of the current recycled water scheme and issues, followed by a summary of the proposed new recycled water treatment scheme.

Current recycled water scheme

Melbourne Water's Western Treatment Plant (WTP) has been supplying recycled water to Southern Rural Water for irrigation of crops in the Werribee Irrigation District (WID) since 2005.

Recycled water production and use is regulated by the Environment Protection Authority (EPA) Victoria and must meet strict quality standards to ensure that it is safe for its intended use. If the water does not meet these standards, it cannot be supplied to customers.

Production outages can be caused by equipment failures or by water quality events that mean the water cannot be treated to the required quality standard.

At the WTP, the supply of recycled water can be impacted by:

- the presence of algae, including Blue-green algae in wastewater treatment lagoons
- operational failures caused by aging assets or unexpected events
- high turbidity caused by wind events
- lack of filtration which can lead to E. coli detections.

Melbourne Water acknowledges that these disruptions have and will continue to impact growers. We also acknowledge the recycled water has salinity that is higher than what is preferred for crop irrigation.

Recent disruptions

Recycled water production from the WTP was paused during February, March, and April 2024 due to two unrelated issues:

1. The rupture of a concrete pipeline within the WTP on 1 February 2024, which interrupted recycled water supply for 19 days.
2. Shortly after the rupture, a bloom of blue-green algae occurred in the lagoons, resulting in a cessation of supply for 58 days. Class A recycled water supply resumed on 19 April 2024.

The new proposed recycled water treatment plant aims to address these causes of disruption and other water quality issues, increasing the quality of water provided and improving the reliability of supply for growers.

Customer requirements

Through this engagement process, growers have made clear their requirement for a sustainable and reliable high-quality recycled water supply. To ensure this supply for the future, the WTP Class A recycled water plant would need to be upgraded to include a desalination facility and associated infrastructure to enable this technology to work reliably.

We have heard that future grower supply requirements must include:

- a reliable water supply that can deliver weekly demand, acknowledging that growers can tolerate outages of up to two days provided the overall volume is delivered
- desired salinity level of 600 uS/cm
- peak weekly volume of 600 ML per week with the option to go to 700 ML per week
- contaminant levels that enable growers to continue farming and are safe for use on food crops

The proposed new recycled water plant

Based on these future grower requirements, Melbourne Water is proposing a new 600 ML/week recycled water treatment plant at the WTP which would provide a higher quality recycled water for irrigation and a more reliable supply. The proposed new recycled water scheme would:

- remove the supply disruption risk caused by algae, including blue-green algae, by drawing water from upstream of the maturation ponds where algae grow
- make the plant more tolerant to residual solids caused by turbidity by adding filtration to prepare the water for salinity reduction and disinfection
- lower the salt to 600 uS/cm on average by reverse osmosis treatment of part of the flow
- include an upgraded ultraviolet and chlorine disinfection plant for additional volume and reliability
- include storage to supply recycled water during plant operational interruptions and to meet peak demand.

While this is significant new infrastructure, the Werribee Reconfiguration Project is taking a whole of catchment approach, aiming to deliver additional benefits for a range of purposes through reconfiguring how water is used.

With grower support, the proposed recycled water scheme would be used as the basis for a preliminary business case.

Growers will be able to provide further feedback on the proposed new scheme at future customer reference group meetings.

Questions for the Customer Reference Group

- Does the proposed scheme appropriately address grower requirements?
- Is there any further information growers need to have an informed view?
- Are growers comfortable for this proposed scheme to be used as the basis for progressing the preliminary business case?