Australian Government
Commonwealth Environmental Water Office

Ref: SPIRE 003759049

Off-farm Water Efficiency Program
DPIE-Water
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To whom it may concern,

MURRUMBIDGEE IRRIGATION AUTOMATION FINALISATION PROJECT PROPOSAL AS PART OF THE OFF-FARM WATER EFFICIENCY PROGRAM

Thank you for the opportunity to provide feedback as part of your public consultation process. The Commonwealth Environmental Water Office (CEWO) has reviewed the information and provide the following input to assist DPIE-Water in progressing the application assessment.

Key principles for the CEWO in relation to off-farm water efficiency projects include:

- Held Environmental Water (HEW) should not substitute for water currently meeting Environmental Watering Requirements, or be required to mitigate other environmental risks resulting from implementation of the project. Project implementation should not create a demand on HEW.
- Real water savings generated through infrastructure works should not reduce the volume of available water in the entitlement pool or impact Planned Environmental Water within the catchment or across the Southern Connected Basin; and
- Implementation of infrastructure works should, where relevant, allow for greater operational flexibility with environmental water deliveries and complements the Reconnecting River Country Program.

In relation to the specific proposal, the CEWO considers that the Roaches surge reservoir project has potential to provide flexibility in environmental water delivery during managed environmental events. However, the lack of clearly articulated operating rules as part of the MI project proposal makes it difficult to assess the effect that enlarging MI internal storage may have on environmental water manager's abilities to meet mid-Murrumbidgee wetlands Environmental Water Requirement's during supplementary access periods.

Our concerns relate to ensuring that held environmental water is not called upon to make up any shortfall in meeting projected environmental demands, and that Commonwealth environmental water entitlements are not adversely affected by increased storage capability.

The formalisation of operating and take rules for the storage would allow MI to benefit from greater storage capacity, whilst also ensuring benefits for the environment by protecting peak flows that provide for wetland inundation, fish and other species migration and breeding, and other river health benefits. Please find further detail in relation to this issue outlined below.

If further clarification is required, please do not hesitate to contact Bruce Campbell at bruce.campbell@environment.gov.au

Regards,

Hilary Johnson
A/g Assistant Secretary
Commonwealth Environmental Water Office
1 October 2021

DETAILED FEEDBACK

The MI project proposal states that the implementation of the project "supports the environmental objectives identified in the Basin Plan (particularly watering of the Mid-Murrumbidgee wetlands under the Reconnecting River Country Program) by providing an option to bypass known river constraints", however, it also raises some potential concern. These benefits and concerns are outlined below:

Managed Mid-Bidgee Reconnection Events

1. A mid-Murrumbidgee reconnection aims to inundate wetland habitats between Wagga Wagga and Carrathool (known as the mid-Murrumbidgee wetlands), and Yanco Creek systems to maintain their ecological health and resilience.
2. To achieve optimal wetland inundation of the Mid-Murrumbidgee wetlands, environmental water managers aim to achieve high flow rate peaks between Darlington Point and Carrathool for up to 7 days (well below minor flood levels). This can only be achieved in high water allocation years and during targeted periods of low irrigation demand.
3. Coleambally Irrigation (CICL) and Murrumbidgee Irrigation (MI) are the major corporations that supply water for irrigation upstream of Darlington Point. Environmental water delivery partners work along-side CICL and MI, along with WaterNSW, to agree on optimal timing, duration and flow rates of each planned mid-Murrumbidgee reconnection event.
4. CICL offtakes have the potential to divert up to 3000 ML/d from the river. MI have the potential to divert up to 8,800 ML/day from the river. The proposed Roaches surge reservoir will have a gravity inflow capacity of 1,280 ML/d, thus increasing river diversion potential to up to 10,080 ML/d if the proposed MI project is implemented.
5. CICL generally shut down over the winter months removing the Coleambally portion of demand in the river and providing a window of opportunity for e-water managed flows. However, as of 2020-21, MI typically provide for irrigation diversions 365 days/year. This new practice of a no shut down period narrows the window of opportunity for mid-Murrumbidgee reconnection events and places greater reliance on MI's internal storage to supply irrigation orders demand during peak managed flows.
6. Currently, the major storages within the MI Area are Barren Box, Bundidgerry (online, 5,200 ML), and Bray's Dam (2,500 ML). Current internal storage is sufficient to maintain demand for approximately 1-3 days before requiring take from the river (contingent on rainfall).
7. The proposed Roaches surge reservoir would increase MI's internal storage capacity by 5000 ML.
8. Implementation of the proposed Roaches surge reservoir would increase MI ability to utilise internal storage for a longer period and may provide for a longer window of opportunity (i.e. low demand in the river) for environmental water managers to successfully achieve a mid-Murrumbidgee reconnection event.

However:

Unregulated flow Events

9. Under the rules of the Murrumbidgee Water Sharing Plan (WSP), water that is not extracted for consumptive use during a supplementary event is classed as planned environmental water (PEW) and cannot be re-regulated for consumptive purposes. However, other supplementary license holders can access flow peaks during the declared supplementary event.

10. These flow peaks (below minor flood level) are important for environmental outcomes and sites on the mid-Murrumbidgee River and under some circumstances, will allow better outcomes than can be achieved by ordering general security allocations from environmental water holders' licences.
11. Through the of Reconnecting River Country Program, these flow peaks could provide an opportunity for environmental water managers to add held environmental water on top of PEW to achieve greater environmental outcomes with less held environmental water – but only if the PEW component of the flow is not eroded by other supplementary license holders.
12. MI service customers who collectively hold a total of 36 GL of supplementary entitlement.
13. An increased internal storage provides MI with the potential to take a higher volume (10,080 ML/d vs. 8,800 ML/d) of peak flows during supplementary access periods.
14. Increasing consumptive extraction during a supplementary event would result in: (i) lower flow rates and less frequent inundation of low-level mid-Murrumbidgee wetlands, and/or (ii) a greater amount of HEW required to supplement reduced inundation with PEW with more frequent managed reconnection events using HEW.

To enhance MI's project application and assist DPIE-Water in progressing the application assessment, there would be benefit in MI and DPIE-Water working along-side environmental water managers and WaterNSW to formalise operational rules of Roaches surge reservoir, including operational details of 'how' and 'when' flows can be taken and how potential water savings will be achieved.

The formalisation of take rules would allow MI to benefit from greater storage capacity, whilst also ensuring benefits for the environment by protecting peak flows that provide for wetland inundation, fish migration and breeding and other river health benefits.