

Nogoa Mackenzie Water Supply Scheme

Technical Paper: Carryover at 193 m AHD Fairbairn Dam

26 May 2020

Background

Sunwater is seeking feedback from customers on its proposal to amend the carryover rule at 193 m AHD (Fairbairn Dam) before applying to the DNRME.

As the owner and operator of Fairbairn Dam, Sunwater understands that some customers in the Nogoa Mackenzie Water Supply scheme are concerned about the potential outcomes of the current water sharing rules if the water level in Fairbairn Dam at the start of the water year was to be at, or just above, 193 m AHD.

Sunwater is offering an option to change how carryover is offered at this water level to minimise the impact to the High Priority Announced Allocation.

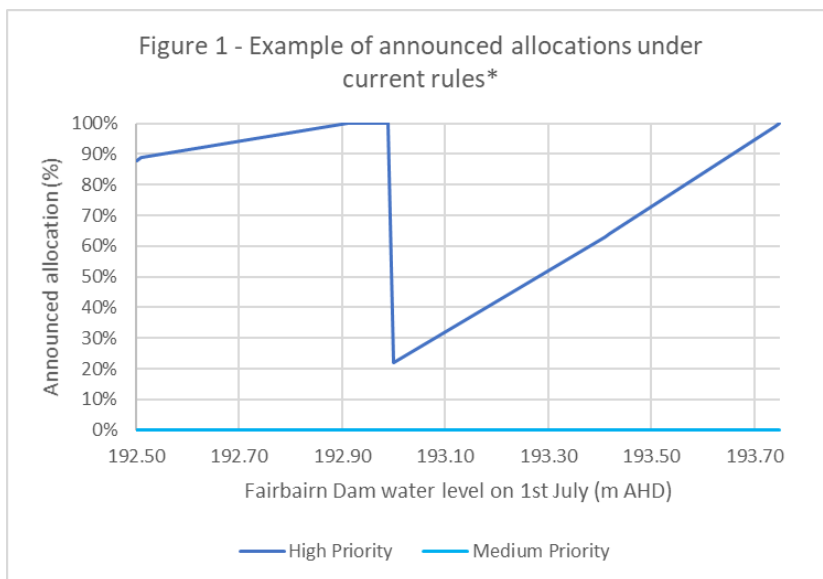
Current carryover rule

Under current water sharing rules, the storage level of Fairbairn Dam at 1 July has specific implications to carryover. If the storage level is:

- less than 193 m AHD, the maximum volume for carryover = 25,000 ML.
- between 193 m AHD and 197 m AHD, the maximum volume for carryover = 75,000 ML.

Allowing for the step-change in the maximum carryover volume that occurs at 193 m AHD, the forecast High Priority Announced Allocation drops off significantly if the storage level in Fairbairn Dam were to be at, or just above, 193 m AHD. If the level were just below 193 m AHD, then the High Priority Announced Allocation would be 100%.

An example of the potential impact on the High Priority Announced Allocation under the current carryover rule is shown in Figure 1. The Medium Priority Announced Allocation would be zero for this range of Fairbairn Dam water levels.

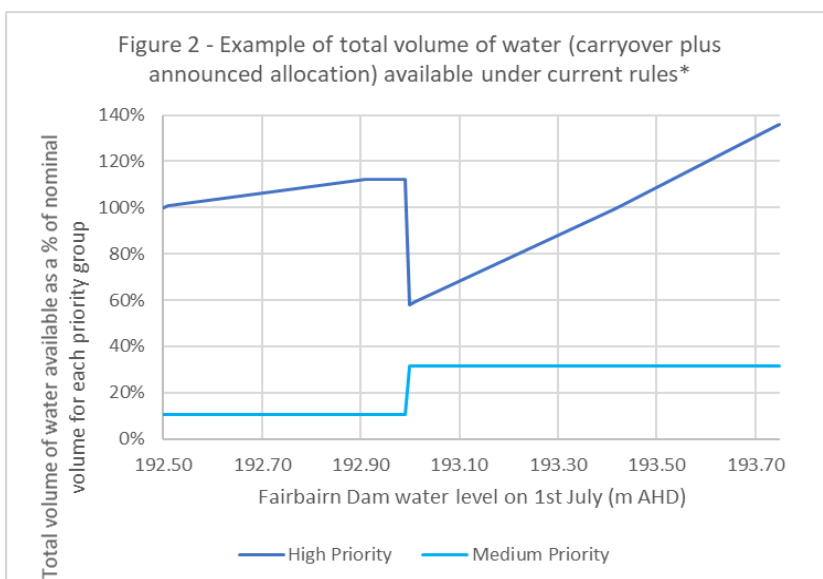


* This example is representative only and based on a range of assumptions including assuming the level at 1 July in Bedford Weir is 122.8 m AHD, Bingegang Weir is 102.9 m AHD and Tartarus Weir is 81.75 m AHD.

Total Volume of water made available under the current Carryover rule

Normal carryover eligibility still applies in addition to Announced Allocation volumes for both High Priority and Medium Priority allocations as they relate to unused water volumes at 30 June.

To illustrate this, assuming that at 30 June the unused High Priority allocation was 20,000 ML and the unused Medium Priority allocation was 70,000 ML, the total volume of water available to customers (i.e. Announced Allocations plus the share of the maximum carryover on 1 July) would be as shown in Figure 2.



* This example is representative only and based on a range of assumptions including those mentioned under Figure 1. In addition, the High Priority share of the maximum carryover has been assumed to be 20,000 ML / (20,000 ML + 70,000 ML) and the Medium Priority share of the maximum carryover has been assumed to be 70,000 ML / (20,000 ML + 70,000 ML).

Alternative carryover rule

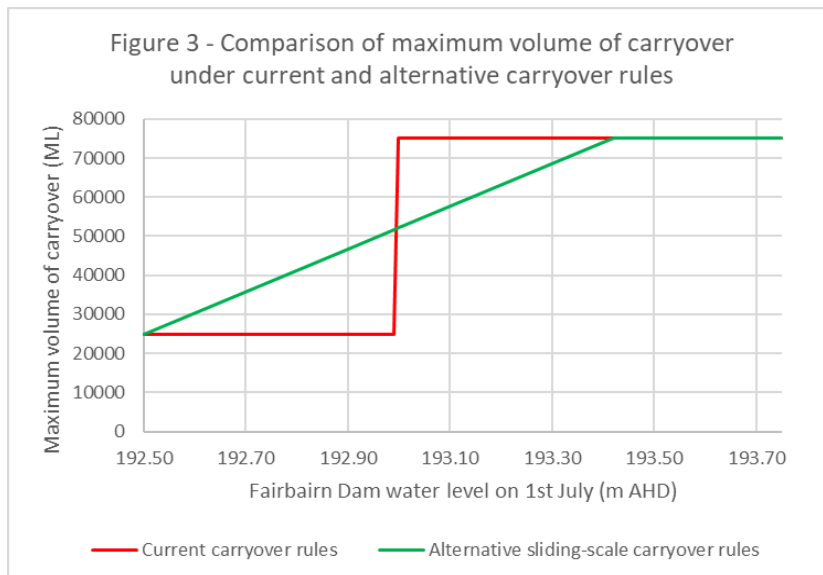
An alternative to the current carryover rule is to replace the existing step-change in the maximum carryover volume (i.e. from 75,000 to 25,000 ML when Fairbairn Dam drops below 193 m AHD) with a sliding scale that transitions the maximum carryover volumes from just above to just below the 193 m AHD level.

Under this alternative rule, when the storage level of Fairbairn Dam at 1 July is:

- less than or equal to 192.5 m AHD, the maximum volume for carryover = 25,000 ML.
- greater than 192.5 m AHD and less than 193.42 m AHD, the maximum volume for carryover is calculated using a straight-line sliding scale between 25,000 and 75,000 ML.
- between 193.42 m AHD and 197 m AHD, the maximum volume for carryover = 75,000 ML.

This would change the total volume of carryover available to Medium Priority and High Priority allocations. Between 192.5 m AHD and 193 m AHD the maximum volume of carryover would increase compared to the current rule; whereas between 193 m AHD and 193.42 m AHD the maximum volume of carryover would decrease compared to the current rule.

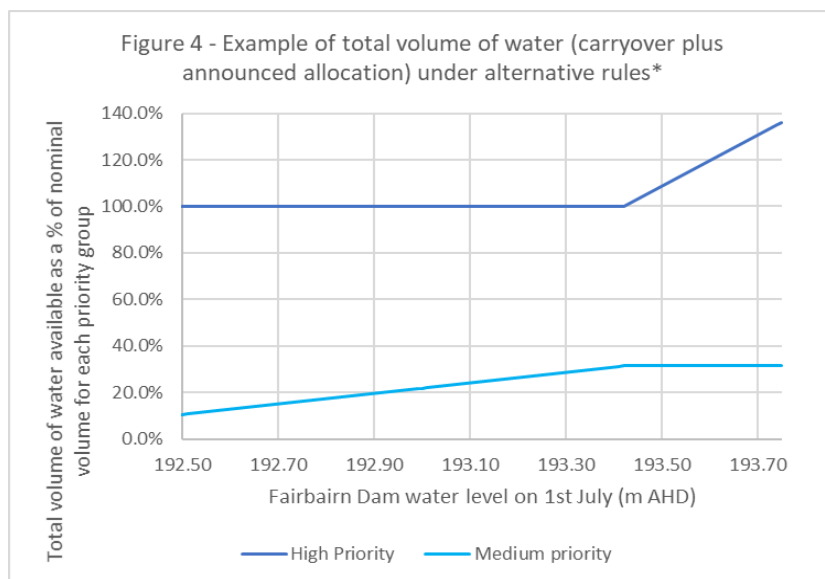
Figure 3 compares the maximum volume of carryover that would be available under the current and proposed rule.



* This example is representative only and based on a range of assumptions including those mentioned under Figure 1.

Assuming again that at 30 June the unused High Priority allocation was 20,000 ML and the unused Medium Priority allocation was 70,000 ML, the proposed carryover rule would have the effect of 'levelling out' the total volume of water that might be available to High Priority water users from High Priority Announced Allocations plus carryover as shown in Figure 4. There is also a more gradual change in Medium Priority carryover.

The outcome of the proposed rule (Figure 4 below) may be compared to the outcome of the current rule (Figure 2 above).



* This example is representative only and based on a range of assumptions including those mentioned under Figures 1 and 2.

Have your say

Sunwater is actively seeking the views of Medium Priority and High Priority allocation customers in the Nogoia Mackenzie Water Supply Scheme about whether the proposed rule change should be pursued, and the timing of its effect.

The rule change will only be progressed if Sunwater has confidence that customers support the proposed rule. If secured, Sunwater will submit an amended Operations Manual with the changed carryover rules to the DNRME for consideration. **Pending any approval, current water sharing rules shall apply.** The timing of any change would also be based on feedback.

To provide feedback, please complete a Feedback form and email to customersupport@sunwater.com.au prior to close of business on 17 June 2020. If you have any questions or require further information, please contact Jason Smith, Operations Manager Nogoia Mackenzie, by email at Jason.Smith@sunwater.com.au.