Proposed amendment to medium priority water sharing rules

Upper Condamine

2023

Summary

- Sunwater is proposing to make a change to the existing medium priority (MP) water sharing rules in the Upper Condamine Water Supply Scheme (WSS) that will enable:
    - MP allocations to be optimised from the beginning of the water year through short-term (a number of months) announced allocations (AA)
    - MP customers to be eligible for an AA announcement higher than 0 per cent when Leslie Dam is above the existing cut-off rule, and
    - all water taken, including streamflow period water, to be used when determining the AA.
- The change can only take effect once approved by the Department of Regional Development, Manufacturing and Water (DRDMW).
- A draft of the proposed changes to the Upper Condamine WSS Operations Manual is available to be reviewed here: bit.ly/3l6WSWT

Background

The Upper Condamine WSS is managed by Sunwater under rules contained in the Upper Condamine WSS Resource Operations Licence (ROL) and associated Operations Manual. Prior to 2019, these rules were detailed in the Condamine Balonne Resource Operations Plan (ROP).

Sunwater is aware of several historical issues regarding the water sharing rules dating back to the introduction of the cut-off rule in the ROP in 2009. In recent years, Sunwater has been working with the Upper Condamine Irrigation Advisory Committee (IAC), now a Customer Advisory Committee (CAC), to identify ways to maximise MP AA at the start of a water year and still maintain compliance with the Condamine Balonne Water Plan released in 2019.

In consultation with the IAC, Sunwater commenced a project in June 2021 to identify solutions to deliver water security to scheme customers when the level of Leslie Dam is low.

Changes in detail

Drivers for the change

Sunwater and the IAC identified the following issues with the current water sharing rules that this proposal aims to resolve (as depicted in Figure 1).

1. AAs are based on a 12-month period and are effective until the end of the water year. This results in a large volume of assumed storage losses and inefficient use of available water in Leslie Dam.
2. AAs are based on the usable volume in Leslie Dam and do not account for the cut-off rule, therefore the AA is not guaranteed.

In working through these issues, Sunwater and the IAC tested several options with the objective to:

- limit impacts on town water supplies (particularly for Warwick) and downstream water users, and
- meet all water plan requirements including water allocation security objectives.

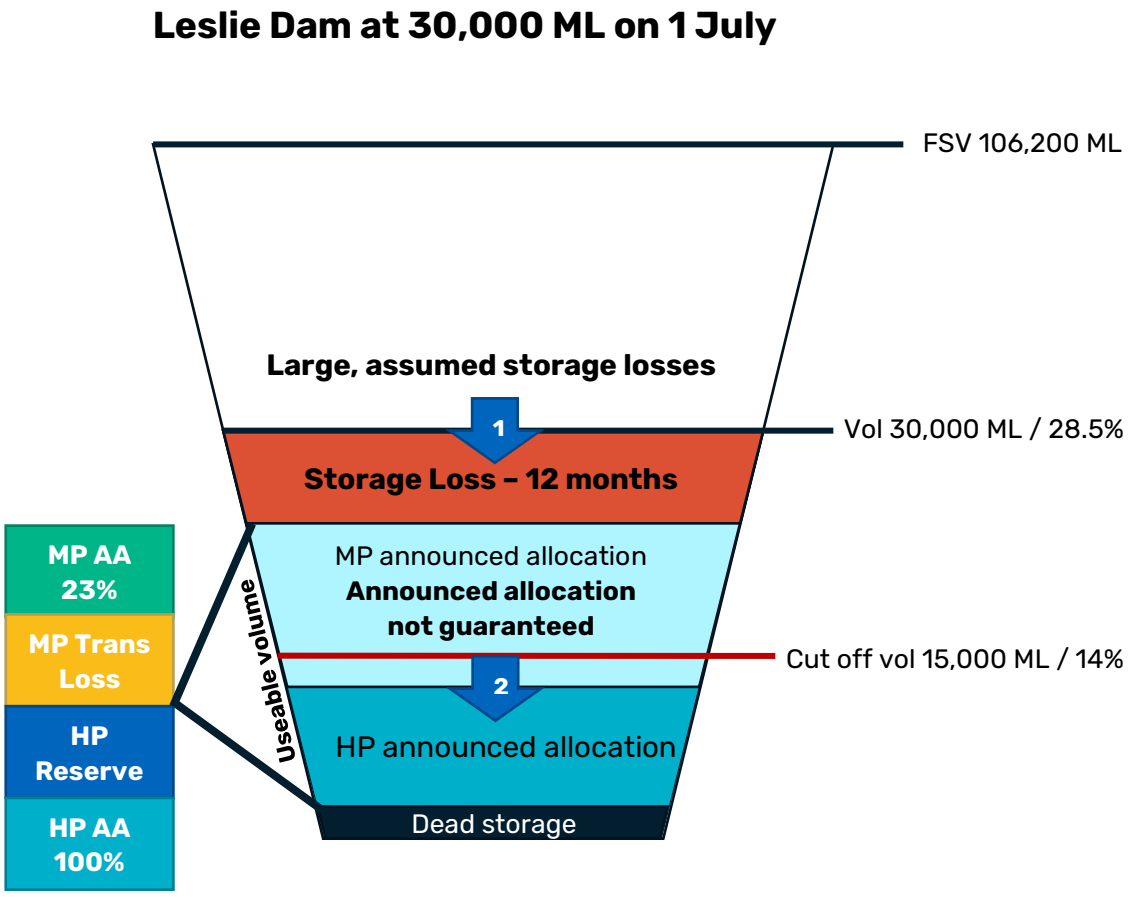


Figure 1 - Depiction of Leslie Dam highlighting water sharing issues

The proposed change

Similar to the water sharing rules used in the Chinchilla Weir WSS, the proposed change to water sharing rules would allow the use of MP allocations as Leslie Dam approaches the cut-off level at EL 460.35 m AHD (15,000 ML). Below this level, releases are not made to MP allocations as the water is reserved for high priority (HP) allocations. To achieve the best use of water above 15,000 ML (highest AA), allocations could be announced for shorter periods.

This change means that an allocation can be announced for a one-to-12-month period guaranteeing the announcement for that period. Despite being set for a period, the delivery of water from Leslie Dam would continue until the cut-off level is reached. While the AA cannot decrease throughout a water year, if inflows occur the AA can be revised and increased up to 100%.

Technical information

Under the proposed change, the AA for MP water allocations would be determined using the following formula:

$$AA_{MP} = (RV + DIV) / MPA$$

Where:

- AA_{MP} is the AA for the MP allocations
- RV is the *Resource Volume* (in megalitres) (refer to Attachment 3 in the Draft Operations Manual)
- DIV is the total volume of water taken under all water allocations in a water year up to the time of assessment of the AA, including water taken under a streamflow period
- MPA is the total of the nominal volume for MP water allocations (currently 22,328 ML)

The resource volume (RV) is calculated using the storage loss, transmission and operation allowances used in the ROP, and the water use demand pattern for MP allocations. The RV depends on the current volume (CV_{LD}) in Leslie Dam. Using the table in Attachment 3 of the Draft Operations Manual, use the CV_{LD} column in the month the AA is being made to determine the corresponding RV. The period that an AA will be in place can be determined by following the selected RV until the month before a zero RV is reached. If the volume of Leslie Dam is between the CV_{LD} shown in the table, the RV will be calculated by linear interpolation.

For example, if the storage volume of Leslie Dam was 54,622 ML on 1 July (the CV_{LD}), the RV would be 20,878 ML. Based on the current MPA (total of the nominal volume for MP water allocations) of 22,328 ML and no water had been used, the AA would be 93 per cent for 10 months (July-April).

$$93\% = (20{,}878 + 0) / 22{,}328$$

The water use demand pattern has been adjusted to reflect historical pump station data from Yarramalong to better reflect how water is used by MP customers. The revised demand pattern is shown in Table 1 and is the same as the ROP demand pattern but shifted back two months.

Table 1 - Revised Demand Pattern for Upper Condamine Medium Priority Users (% per month)

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0.5	0.5	3.0	3.5	20.0	17.0	13.0	17.0	12.0	7.0	4.0	2.5

Diversions (Div) will now include all water taken. The current water sharing rules exclude water taken during streamflow periods. This proposed change aims to reflect the true volume of water left to be delivered from Leslie Dam in a water year.

Under section 33 of the Condamine Balonne Water Plan, DRDMW can only approve and amend the water sharing rules if the proposed rules do not increase the amount of water taken under the water plan. To meet this requirement, Sunwater will retire 34 ML of MP allocation it holds. Sunwater will still retain ownership of this allocation, but will be unable to use this water. This will offset a small increase in downstream diversions but allow flexibility for future changes if required.

There are no changes to the cut-off or AA rules for HP allocation holders. This is to ensure that current reliability of town water supplies are maintained.

Understanding the impacts

Sunwater is committed to working with the newly established Customer Advisory Committee (CAC) and customers as we transition to the new MP water sharing rules.

Leslie Dam levels

Generally, the level of Leslie Dam is between 15,000 ML (14 per cent) to 58,000 ML (55 per cent) as shown in Figure 2. Information regarding AA impacts is outlined below. The proposed rule change would potentially create a slight increase in drawdown rate in storage levels between 20,000 ML (19 per cent) and 15,000 ML. This is due to an increased MP AA during this period. Due to the cut-off rule, this does not impact HP allocations or town water supply to Warwick.

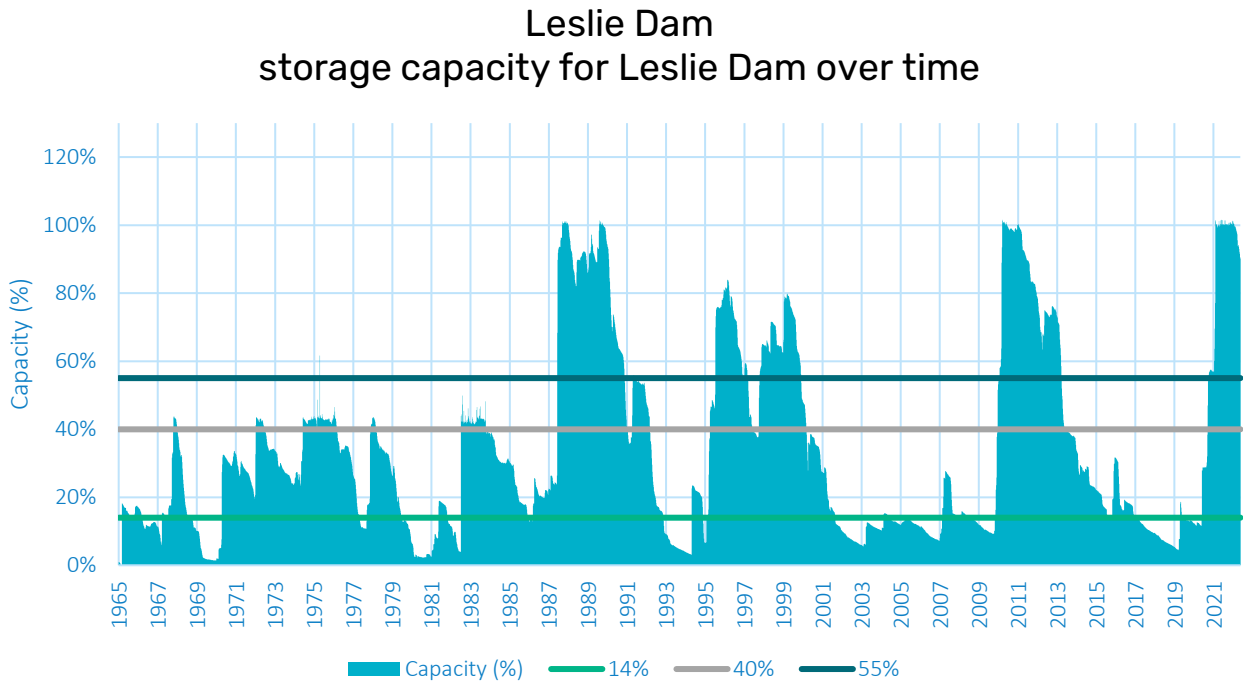
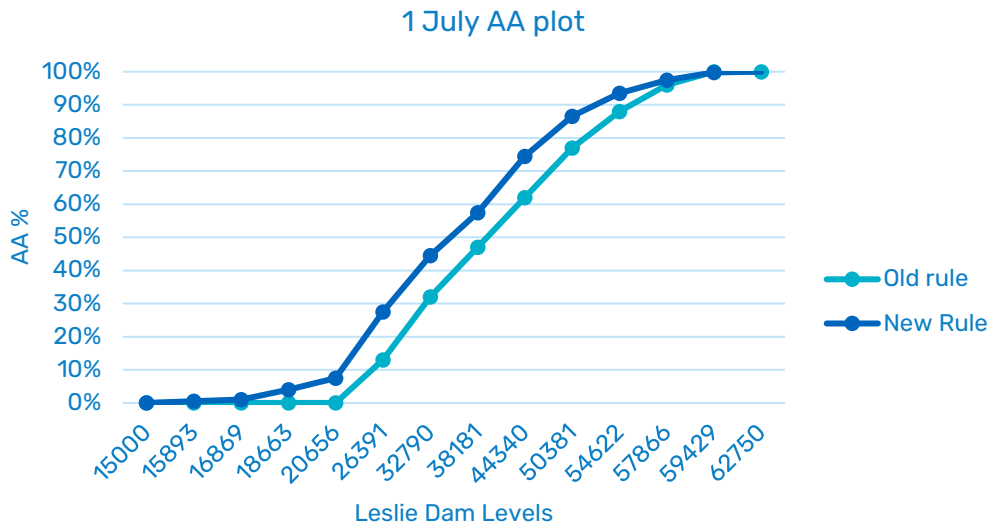


Figure 2 - Historical levels of Leslie Dam

Announced Allocations

The following three figures (figures 3 to 5) show how the AA is altered by the new rule in comparison with the current rule. Data for July, August and September is key in this instance as the first quarter of the water year is the most critical for irrigators. Each graph shows that MP allocation would be increased at the start of the water year with the new rule in place, especially when the dam is at lower levels (< 40 per cent) but still above the cut-off level (15 per cent).

Figure 3 - AA comparison in July



July AA

- MP allocations could access water when Leslie Dam is below 20,000 ML (19 per cent)
- Increased AA for all dam levels before converging at AA 100 per cent (approximately 60,000 ML or 56 per cent)

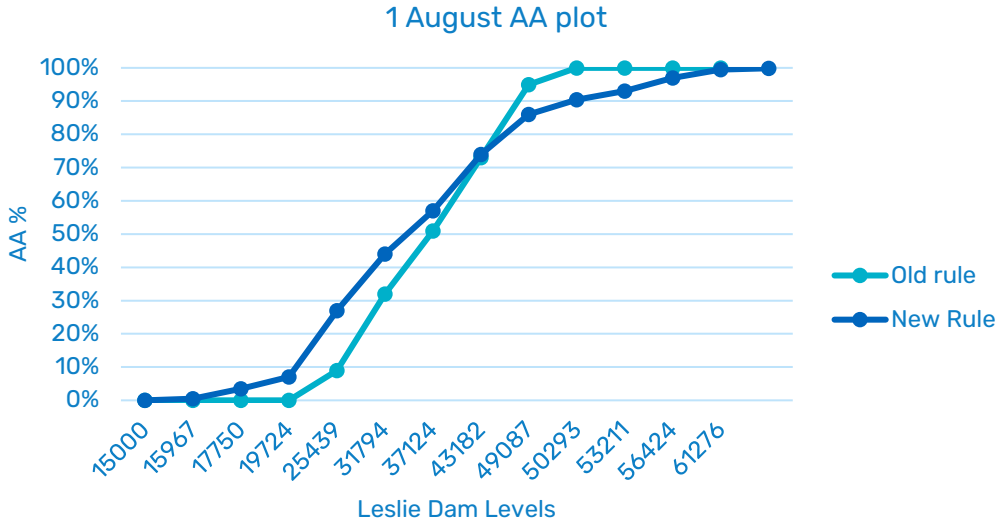


Figure 4 AA comparison in August

August AA

- MP allocations could access water when Leslie Dam is below 20,000 ML (19 per cent)
- Increased AA when dam levels are between 15,000 ML (14 per cent) and 43,000 ML (40 per cent)
- > 43,000 ML, current water sharing rules outperform the proposed rules before converging at AA 100 per cent or 60,000 ML capacity (56 per cent)

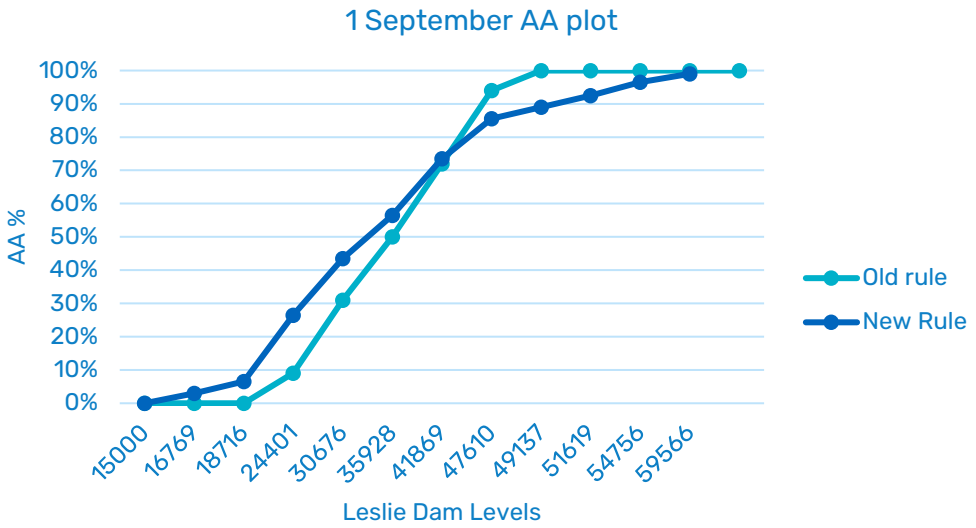


Figure 5 - AA comparison in September

September AA

- MP allocations could access water when Leslie Dam level is below 20,000 ML (19 per cent)
- Increased AA when dam levels are between 15,000 ML (14 per cent) and 41,000 ML (38 per cent
- > 41,0000 ML, current water sharing rules outperform the proposed rules before converging at AA 100 per cent at 55,000 ML capacity (51 per cent)

Water plan modelling

With the assistance of the Department of Environment and Science, Sunwater has undertaken modelling using the Upper Condamine SOURCE Water Plan model with the period of simulation from 1895 to 2013. The proposed rule did not fail any of the water allocation security objectives for surface water. The change decreased the total average annual diversions (AAD) in the Upper Condamine model by 3 ML but increased the AAD in the downstream sections by 32 ML, thereby failing Section 33 of the Condamine Balonne Water Plan. Sunwater will meet compliance with section 33 by retiring 34 ML of MP allocation located in zone UCS-02 of the Upper Condamine WSS, which accounts for the 32 ML plus associated losses.

There was no change to any of the environmental performance indictors (environmental flow objectives) resulting from the change in the proposed water sharing rules and the retirement of 34 ML of allocation.

Regulatory considerations

Under section 200 of the *Water Act 2000*, Sunwater can make an application to DRDMW to amend an Operations Manual. DRDMW can approve the change if the application:

- meets water plan outcomes and measures
- meets water plan water allocation security objectives and environmental flow objectives, and
- is developed in consultation with all affected persons.

Submitting feedback

The final feedback period will close on Tuesday, 28 November 2023.

To submit feedback regarding the changes proposed, please email Sunwater at CustomerEngagement@Sunwater.com.au.

For general enquiries, please contact customer support on 13 15 89, 8:30am – 4:30pm Monday to Friday, or by emailing CustomerSupport@Sunwater.com.au.