



Working group on use of water in the NSW southern Murray–Darling Basin

1) How losses are calculated in the Source model

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- Losses are calculated using a water balance using the data from the gauges in each river reach.
- Source has an explicit representation of evaporation and rainfall from channels and storages. River reach widths are conservative to allow for transpiration from riparian vegetation (ie. Assumed slighter wider).
- If surface water-ground water interaction in a river reach is material, then this will be explicitly represented.
- The remaining lateral fluxes (water not leaving by the downstream channel) are represented by a piecewise linear relationship with streamflow.

2) Timeframes for model rebuilds for Regional Water Strategies

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- Baseline integrated model for the southern system is ready for simulation with instrumental climate data from February 2022.
- Simulations of the baseline model with stochastic climate currently underway, estimated completion of simulations is at end March 2022
- Options modelling for RWS options to be started in April 2022 and will take about 4-to-6 months. This will include an analysis of underuse using the updated model, and IQQM. This will be presented back to this forum when ready.

3) Feedback on potential policy options for
underuse of water in NSW MDB presented at
the last meeting

3) Feedback on policy options – Murray / Murrumbidgee

- A critical first step in relation to the issue of underuse is finalising the new models to enable a more accurate estimate of the scale and drivers of underuse in the Murrumbidgee and Murray, before considering any changes to the WSPs.
- However, there may be scope to consider the options discussed at the last meeting with the development of the draft Murray and Murrumbidgee regional water strategies.
- Several options currently being developed for these two draft strategies relate to the issue of water use and utilisation:
 - An option to further investigate water availability in these regions – to maximise the efficient use of the available resource.
 - An option to better understand water use and water user behaviour in the region – to inform future water management decisions and enhance the state's hydrological modelling capabilities.
 - An option to review the allocation and accounting framework in the two regions - to start a conversation with communities about acceptable level of water security risks for communities and optimise access to water for all users.
 - Options to further investigate supply shortfalls and dam imbalance issues in the Murrumbidgee - to investigate possible actions to improve reliability and deliverability in the regions.
- During the public exhibition of the draft Murray and Murrumbidgee regional water strategies, we will seek stakeholder feedback on these and other long list of options.
- Further modelling and analysis will be undertaken following the public exhibition process to understand the merits and impacts of these options on all categories of users.
- Any option that would require changes to the WSPs would be accompanied by stakeholder consultation and would need to be carried forward through water sharing plan and water resource plan review processes.

3) Feedback on policy options – Lachlan

- In relation to (a) DPE Water supports carrying this option into the next version of the Lachlan regional water strategy for further investigation. The investigation would involve undertaking some initial modelling to identify the ability of the proposed change to increase account utilisation, and an analysis of the costs and benefits of making this change. Consideration would need to be given as to whether this change would have adverse effects for other categories of users, or the environment.
- In relation to (b) DPE Water does not support investigating this option further. The decision to retain the pre 2004 worst drought on record as the event on which the Lachlan resource assessment is based effectively means that the resource assessment is already based on a figure approximating the 98th percentile.

To note - the draft Lachlan regional water strategy will investigate changes to the allocation framework (incl. the minimum inflow sequence) based on the regional water strategy climate datasets. This work will mean adopting a risk management approach to setting the inflow sequence, rather than adopting the “worst on record” approach currently used. Changing the inflow sequence assumptions will change the way water is distributed between categories of user – so this process will require extensive consultation with all categories of user, together with consideration of likely impacts on the environment.

As either (a) or (b) would require a change to the plan, the final decision regarding whether this option would need to be carried forward through water sharing plan and water resource plan review processes.

4) Options to expedite the work on updating irrigator behaviour (in relation to crop type and contemporary irrigator behaviour in the three valleys) as an eventual modelling input.

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- Irrigator behaviour surveys have been identified as an option to better understand water use with data collection and analytics.
- This work is likely to commence as part of the implementation of the regional water strategy.
- It is likely that this work is likely to commence in mid 2023.
- The on-line collection of irrigator behaviour and crop statistics is also being investigated, including on the set-up of information systems to support this.
- We will engage with stakeholders on this.
- The Department generates current condition cropping information from satellite imagery, using remote sensing.