

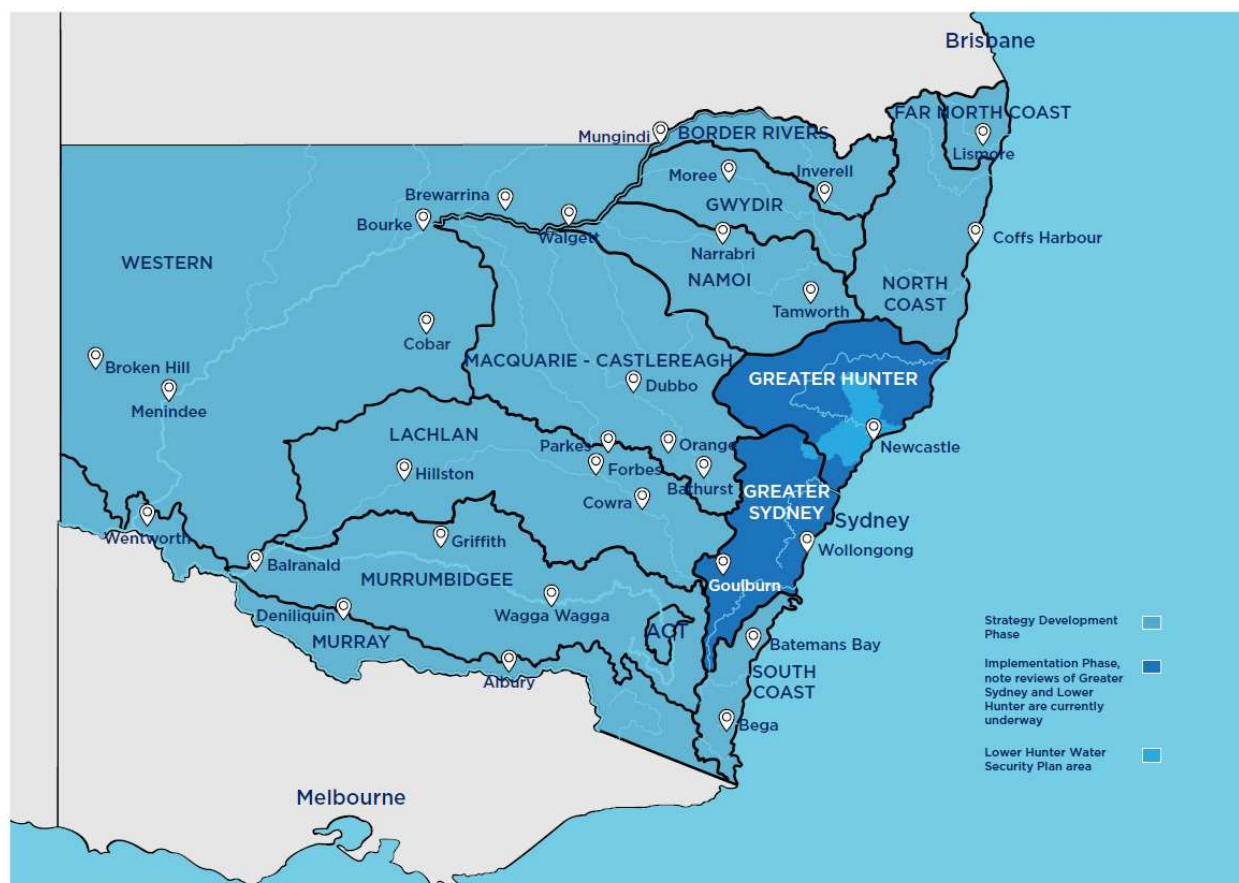


Regional Water Strategies

Update

2 March 2022

Regional water strategies



✓ Completed (2018)

Greater Hunter

✓ Draft RWS released (2020)

Border Rivers

Gwydir

Namoi

Macquarie

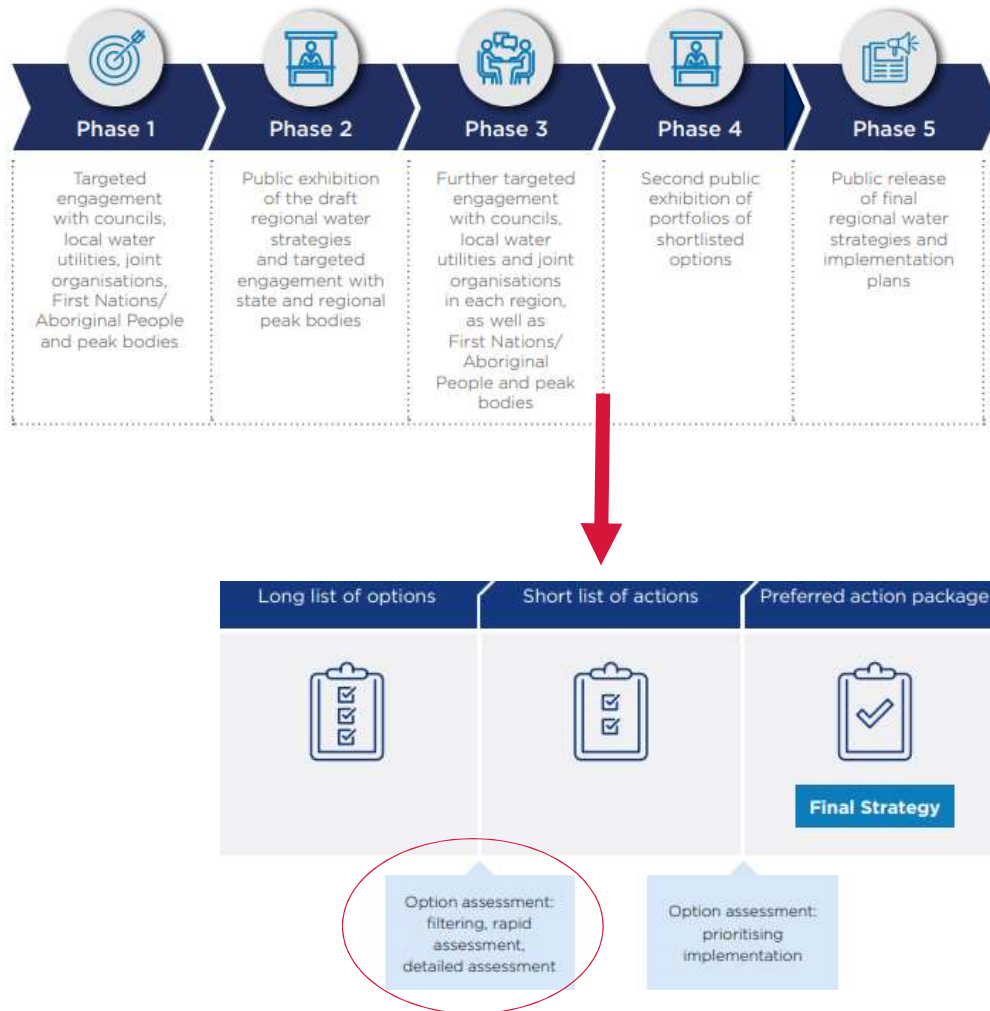
Lachlan

Far North Coast

North Coast

South Coast

Updated process



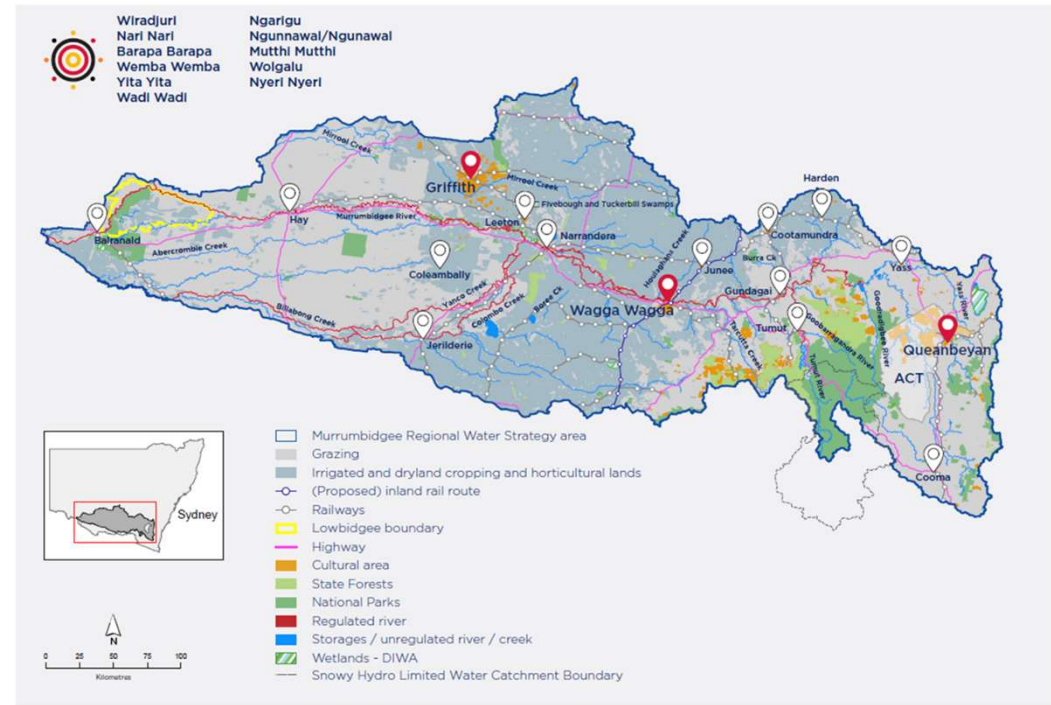
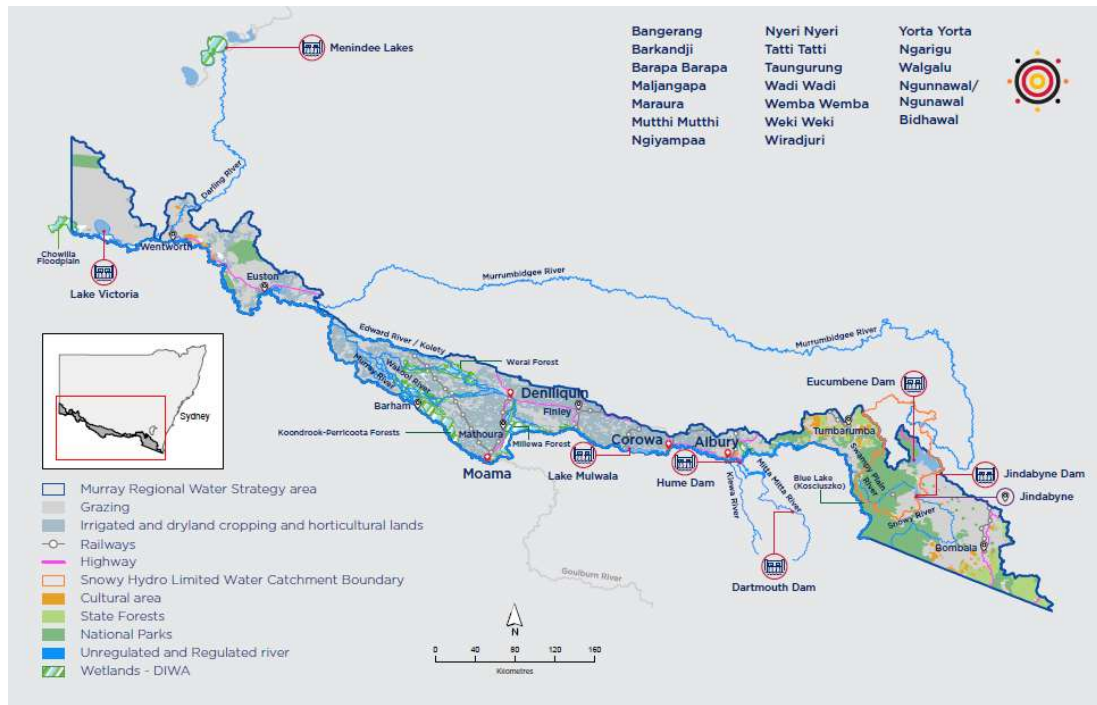
Since the release of earlier regional water strategies, there have been two key changes to the options assessment process:

1. An additional 'filtering' stage to ensure that options being assessed address the key challenges in the region.
2. The outcomes of the RWS options assessment process will be placed on public exhibition (rather than being assessed by a review committee) before the strategies are finalised.



Draft Murray & Murrumbidgee RWS

Murray and Murrumbidgee RWS regions



The RWS boundary of the Murray RWS differs to the Water Resource Plan boundary. The Murray RWS includes the NSW Murray SDL resource unit SS14 and the Snowy-Genoa water sharing plan area.

Update

- **New climate data and hydrologic models** – ongoing collaborating with Murray-Darling Basin Authority, Snowy Hydro and Victorian and ACT governments.
- **Engagement in the Murray and Murrumbidgee to date:**
 - Over 26 meetings with local councils, local water utilities and joint organisations
 - 1st round of meetings with Aboriginal communities complete (truncated and low attendance)
- **Expected public release of Murray & Murrumbidgee RWS** – first half of 2022

Key challenges

Complex water management arrangements

- Inter-jurisdictional water sharing arrangements and a reliance on inter-jurisdictional co-operation between Victoria, South Australia, Snowy Hydro Limited, MDBA and the ACT to progress the modelling and options development for the draft strategies.

Significant population and industry growth

- In areas surrounding the ACT & Wagga Wagga. Industry changes leading to changes in water demand and usage patterns, potentially accentuating existing physical constraints.

Decline in water availability

- Average inflows into the system have declined over the past 20 years with a corresponding reduction in average general security allocations (e.g. particular in the Murray).

Highly regulated systems with existing physical constraints, operational and storage limitations

- Channel capacity constraints and limited mid-system storage constrain effective water delivery and highly regulated system is having a wide-scale impacts on the environment and ecosystems

Extensive existing government commitments

- ongoing water-related programs and projects in progress across both regions (such as SDLAM projects).

Key opportunities

New climate datasets and updated integrated modelling (including a newly developed upper Murrumbidgee model)

- To test the appropriateness of existing rules, regulations and policies, including the existing water allocation and accounting framework and additional opportunities to support existing reviews already underway

Closer alignment with Riverina Murray, Far West and South-East and Tablelands Regional Plans

- The current review of the Riverina Murray and South-East Tablelands Regional Plans allow for a closer alignment between both strategic documents and ensure there is an up-front integration of water resource management in strategic planning (including land use planning).

Improve our understanding of trends in water use in the regions

- Draft option being developed to investigate regulatory, policy, operational and infrastructure solutions to enhance water security for regional communities and support the productive capacity of the regions' industries.

Improve the understanding of groundwater in the region

- Draft options being developed to improve the understanding of groundwater processes, groundwater usage and risks to existing groundwater sources.

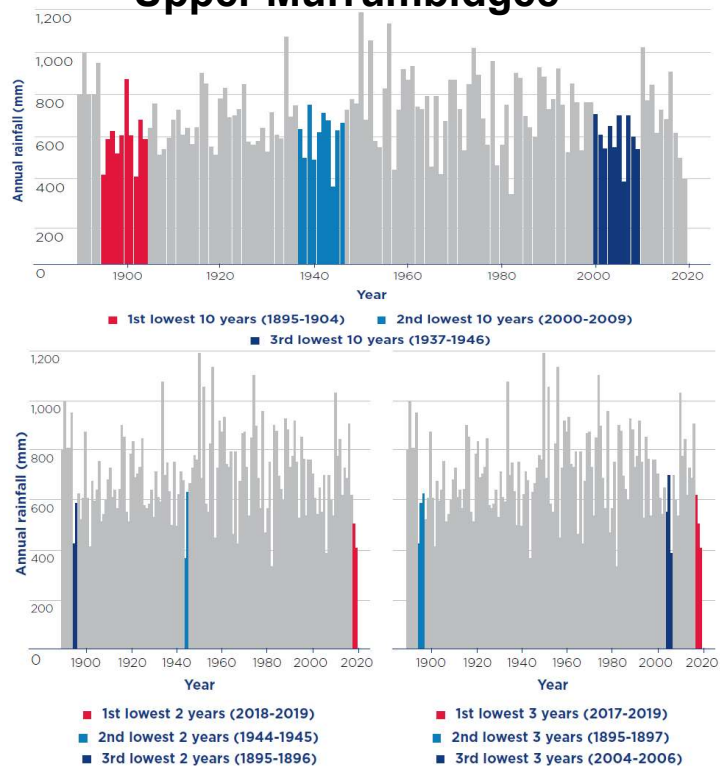


Climate datasets and RWS modelling

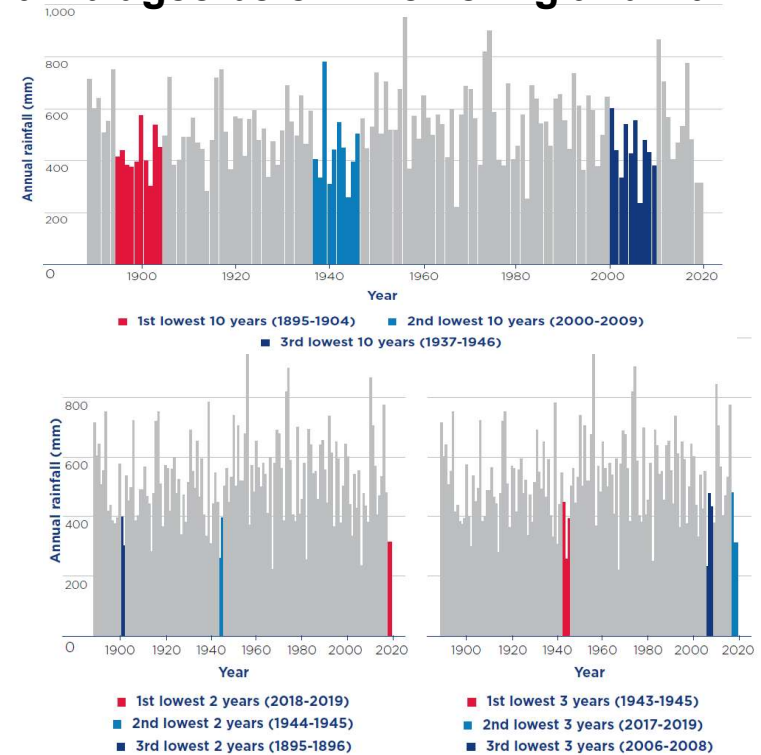
Murrumbidgee – past climate

- The most recent drought (2017 to 2020) includes the lowest 24 and 36-month rainfall on record
- Two of the driest 36-months on record occurred during the last 2 decades
- The federation drought (1895 to 1904) was the driest 10-year drought on record

Upper Murrumbidgee

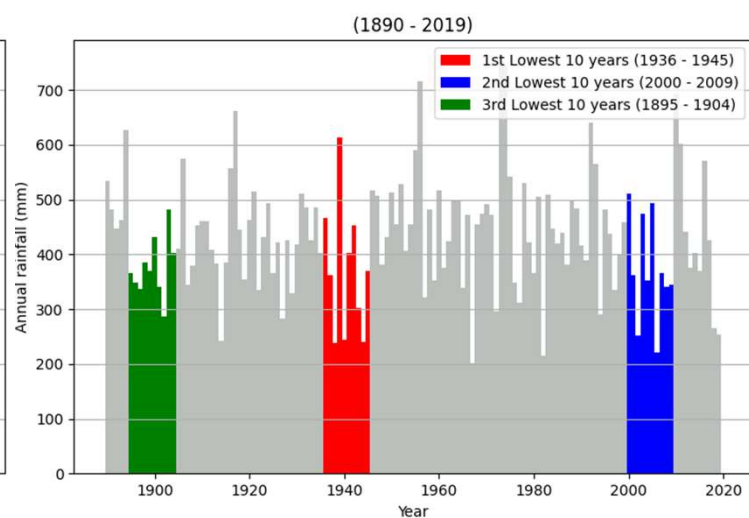
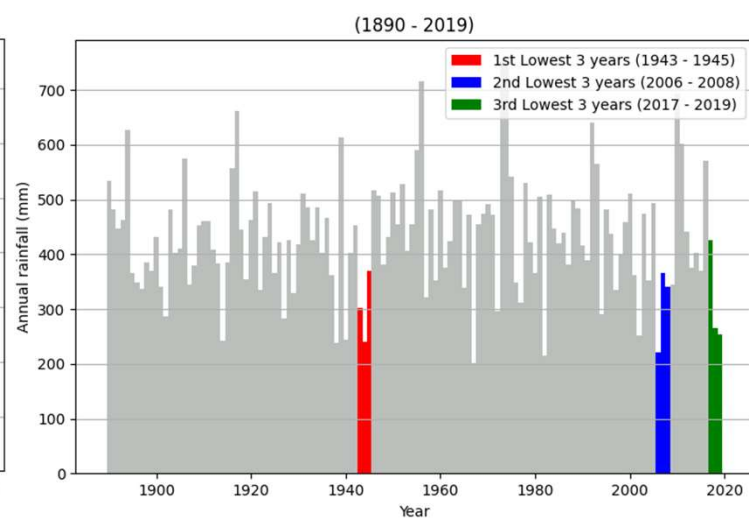
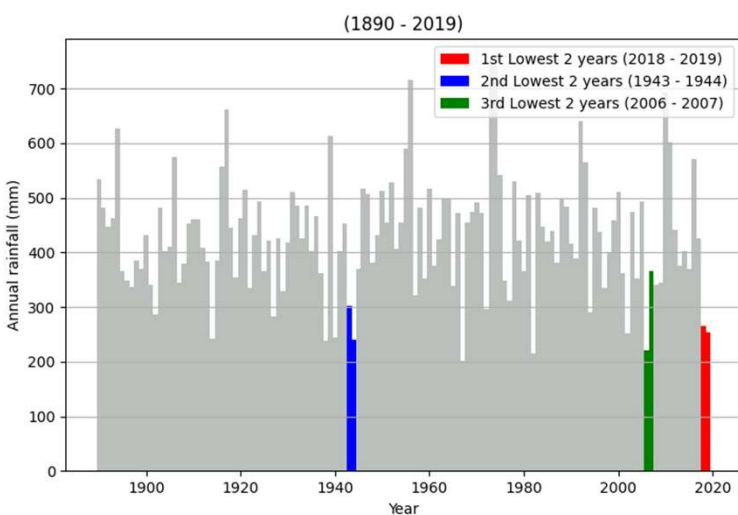


Murrumbidgee below Blowering and Burrinjuck

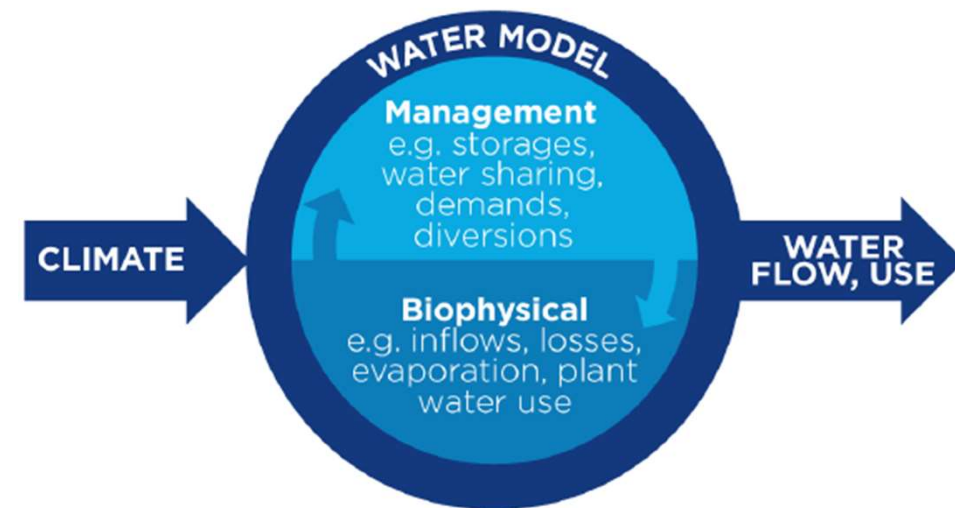
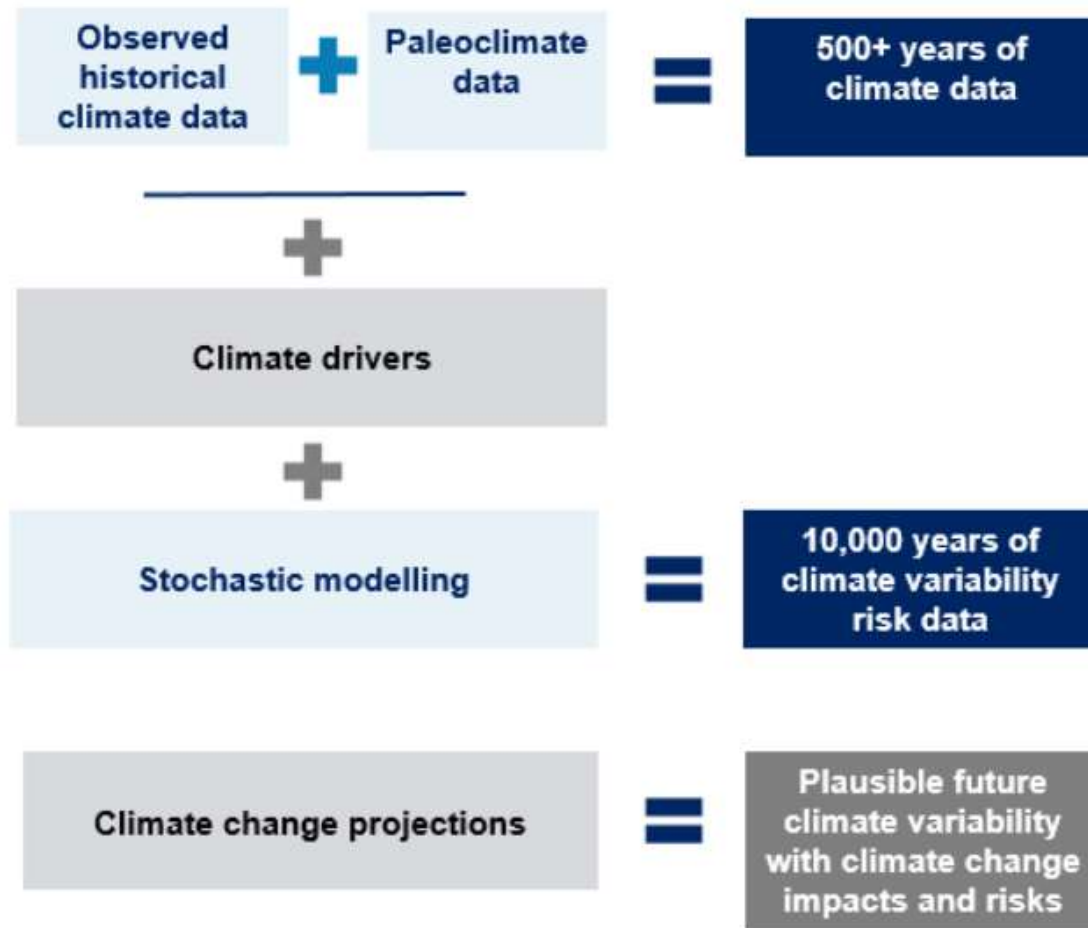


Murray – past climate

- The most recent drought (2017 to 2020) includes the lowest 24 month rainfall on record
- Two of the driest 36-months on record occurred during the last 2 decades
- The World War II drought (1936 to 1945) was the driest 3-year and 10-year drought on record



Climate modelling method and steps

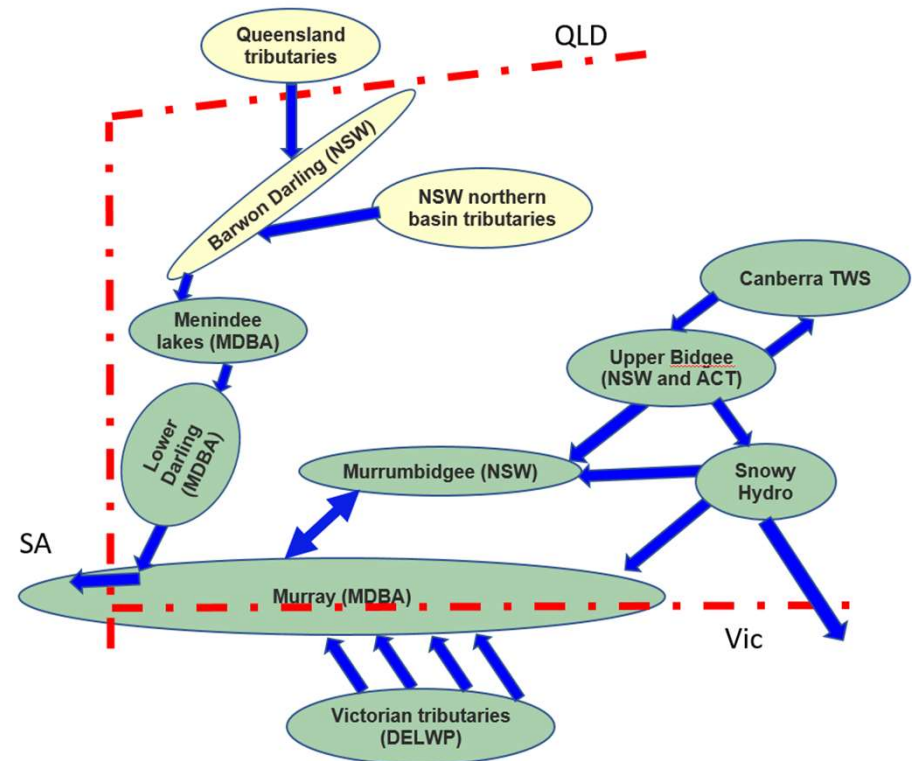


Southern Basin Model Development

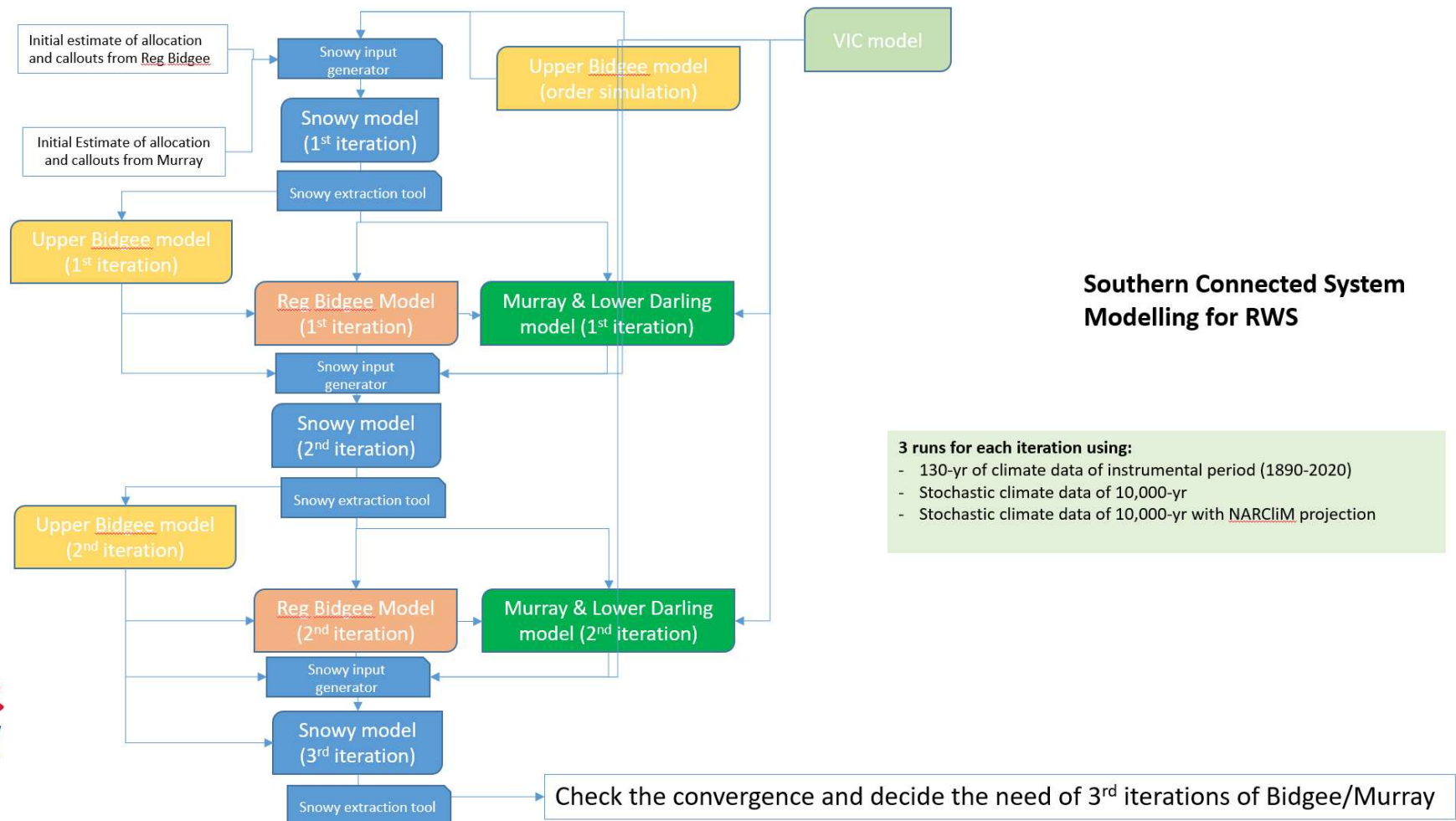
- Murrumbidgee - New SOURCE model
- Murray - Rainfall-runoff models build for Hume Dam catchments and Snowy-Murray integration
- Snowy System: Developed rainfall-runoff models for all headwater catchments (including snowmelt) to enable SHL model run for long-term climate
- VIC: Developed rainfall-runoff models of all headwater catchments to enable VIC river system models simulations for long-term stochastic climate
- Inflows to Menindee Lake: simulated using the Northern & Western system integrated modelling
- The new modelling system enables better integration of the connected river systems including feedback



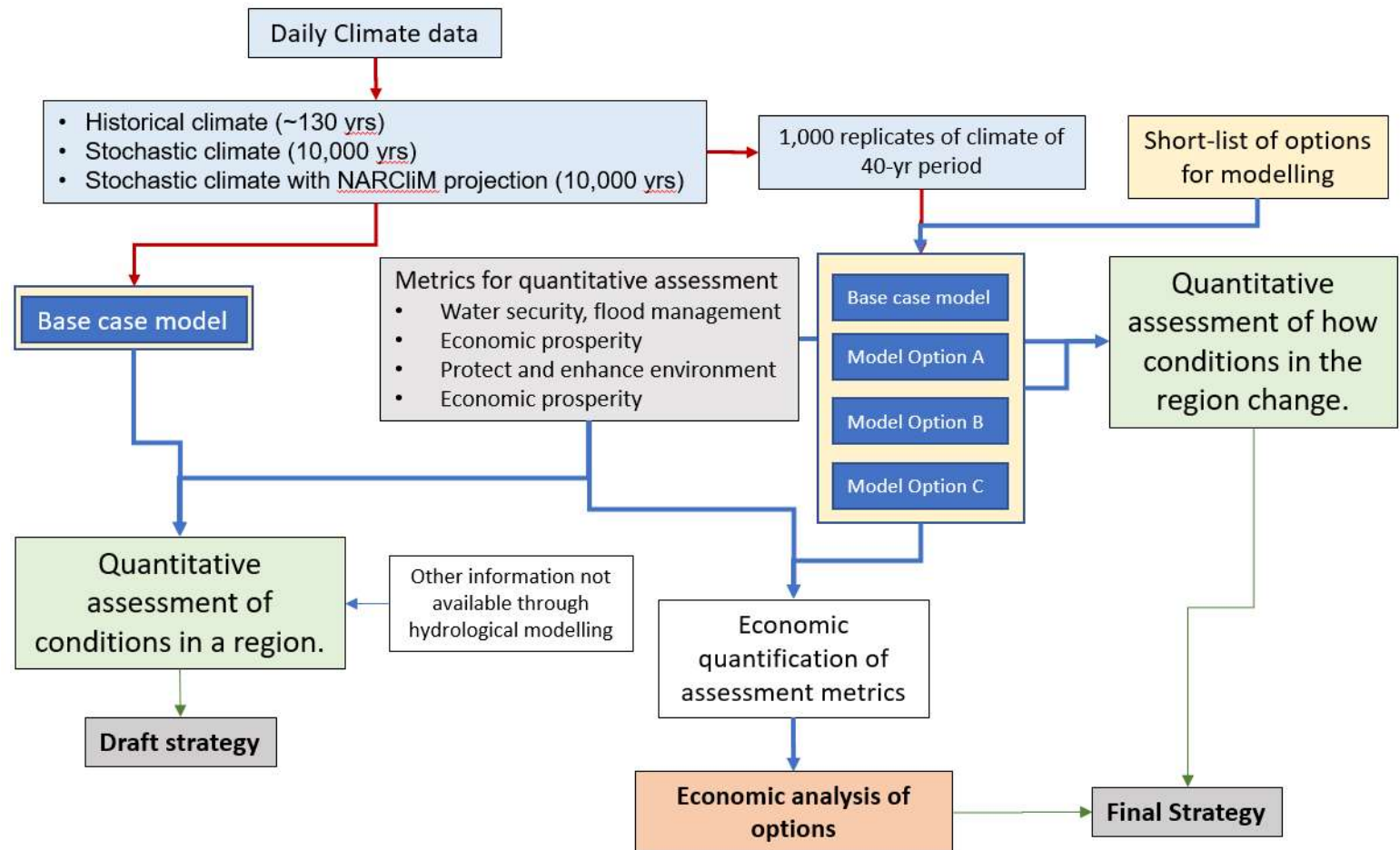
Southern Connected System



Iterative Simulations of Southern Connected System



Hydrological Modelling for RWS Assessment





Regional Water Strategies

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