



# Water Allocations – Current status & allocation update

NSW Murrumbidgee regulated water sources

Department of Planning, Industry and Environment Water

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Presentation 21 to 22 August 2019

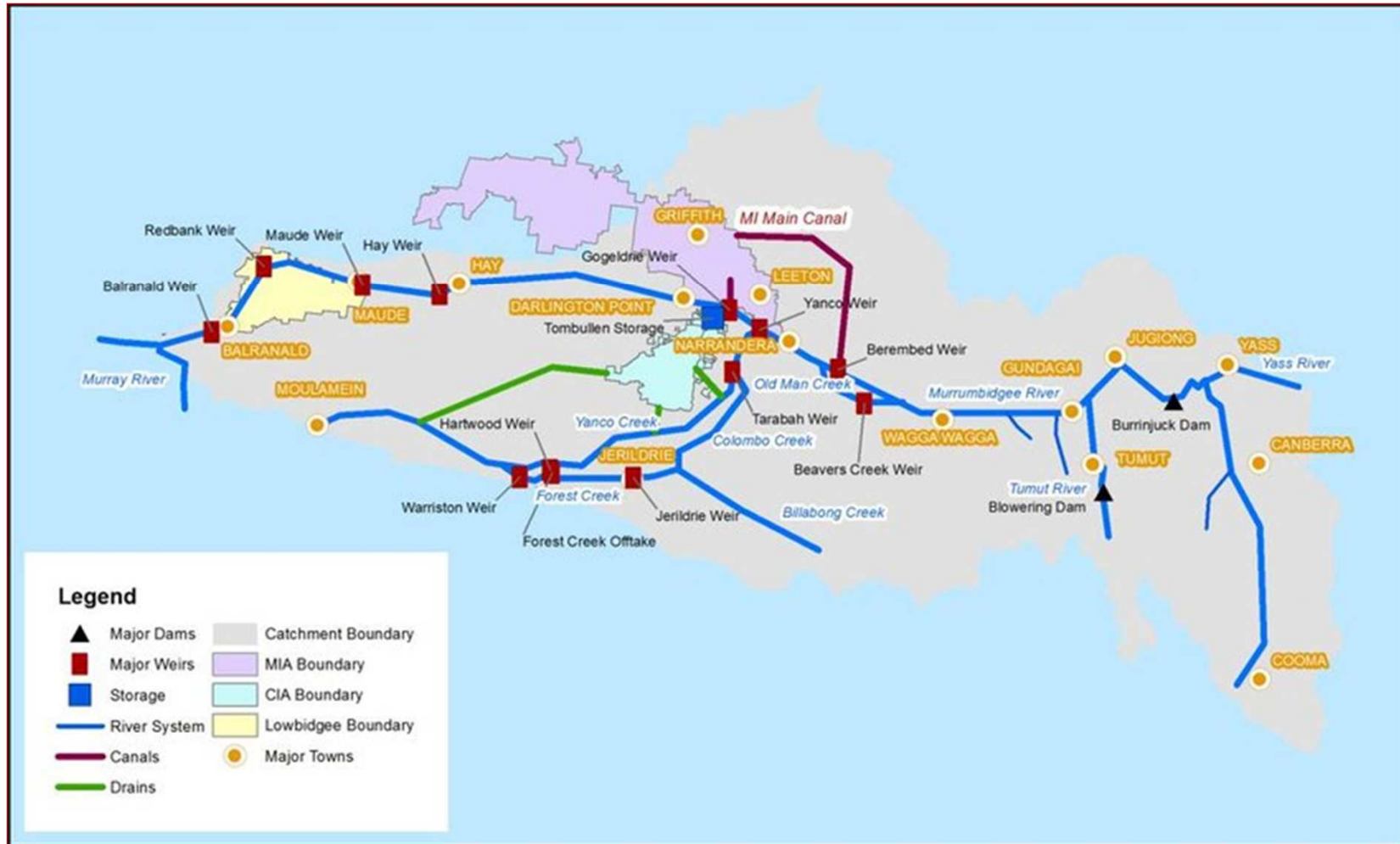
# This Talk

- Inflows - current and history
- Impact of Snowy RAR
- Climate
- Water Allocation – Approach – quick summary

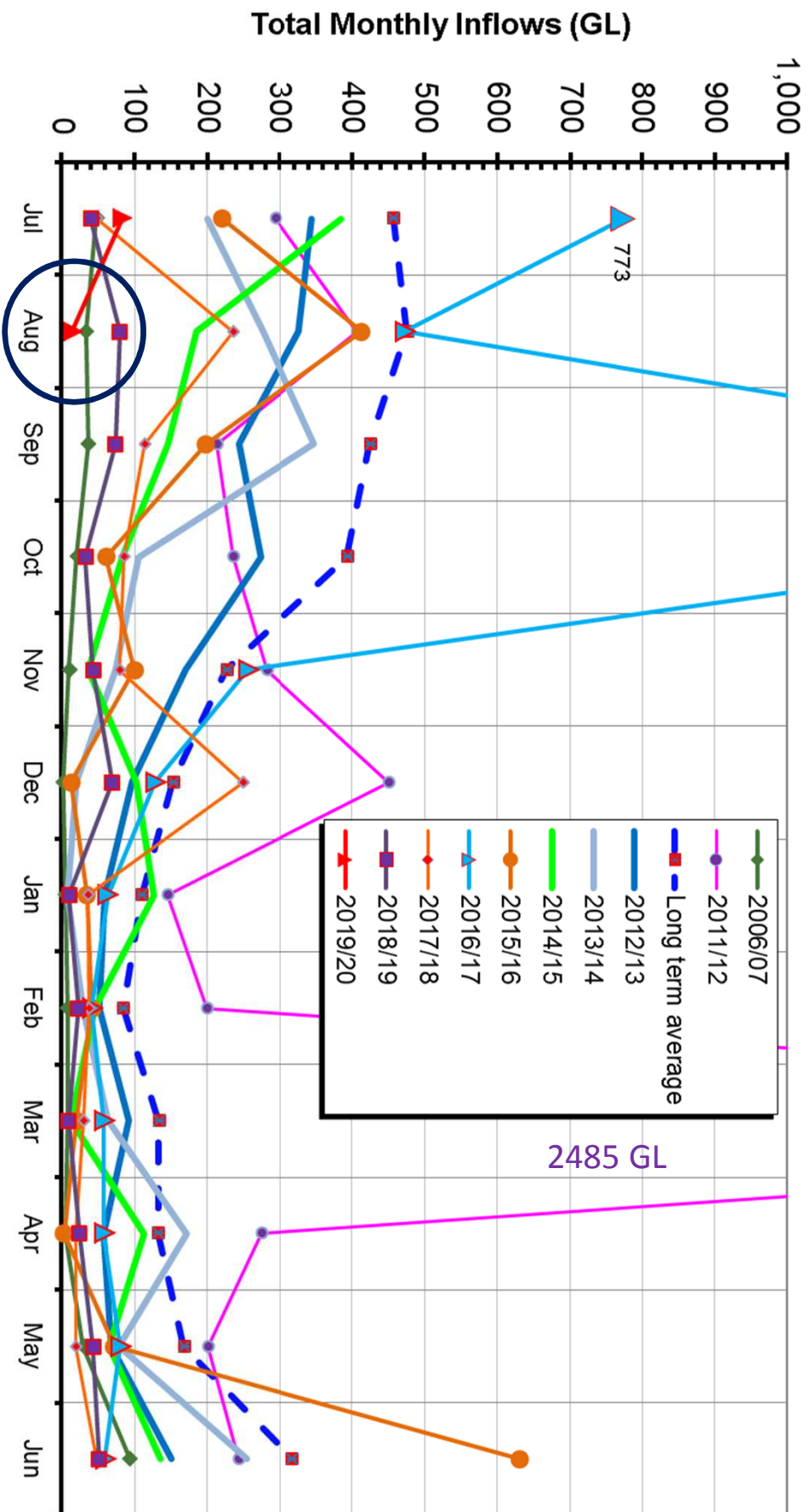
## **Allocation update as of 15 August 2019**

- Status of current water resources
- Water availability outlook

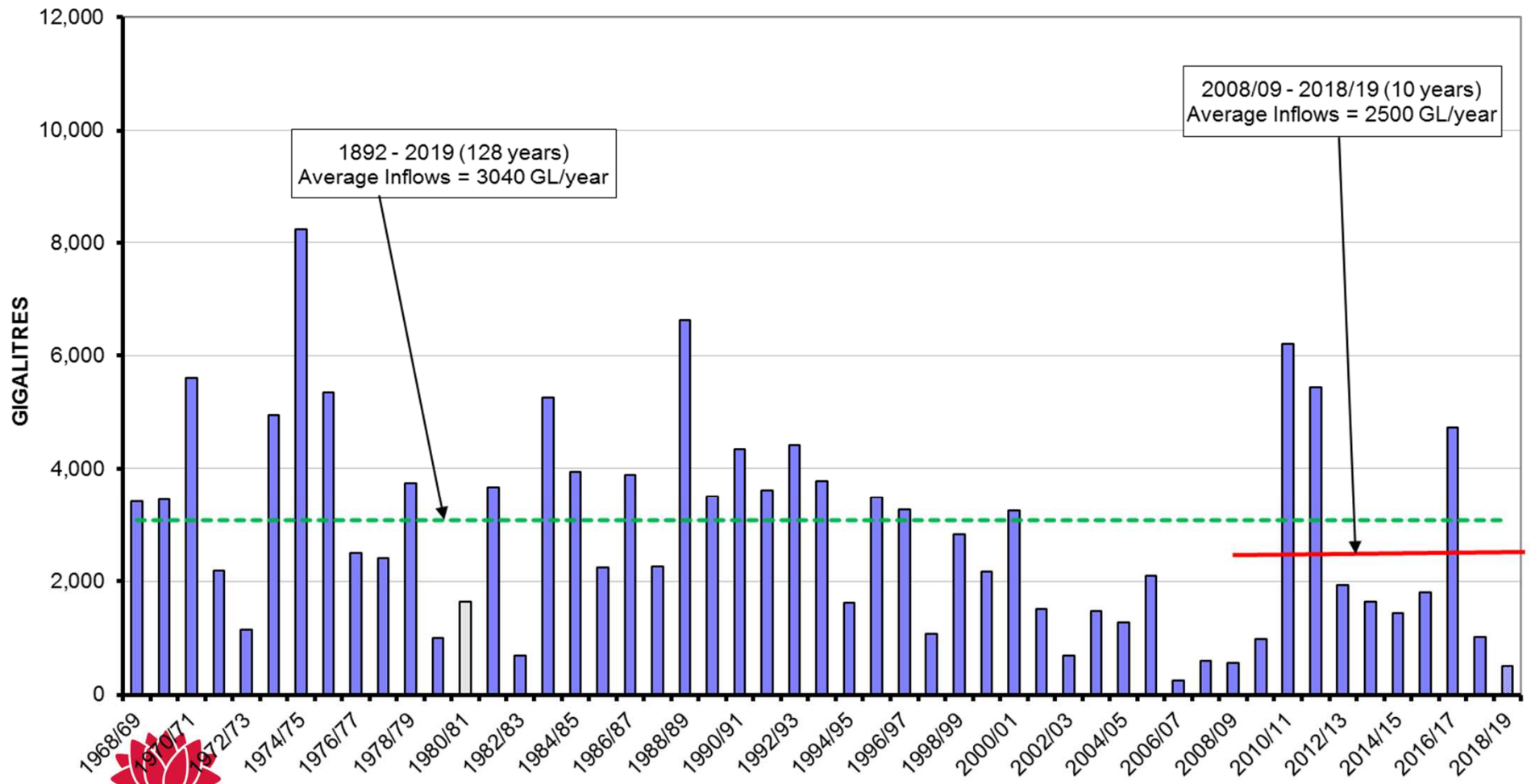
# Murrumbidgee Regulated River System

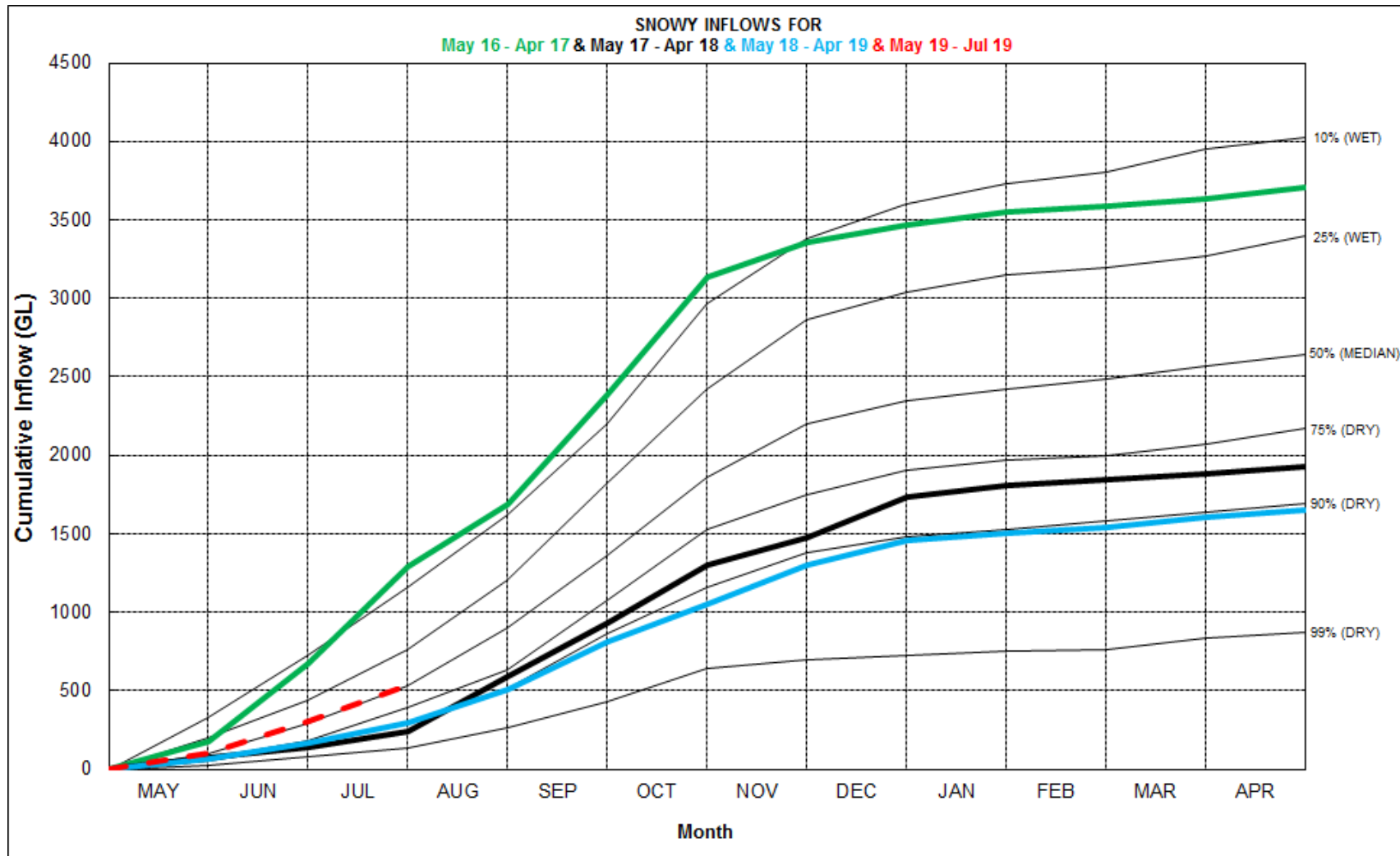


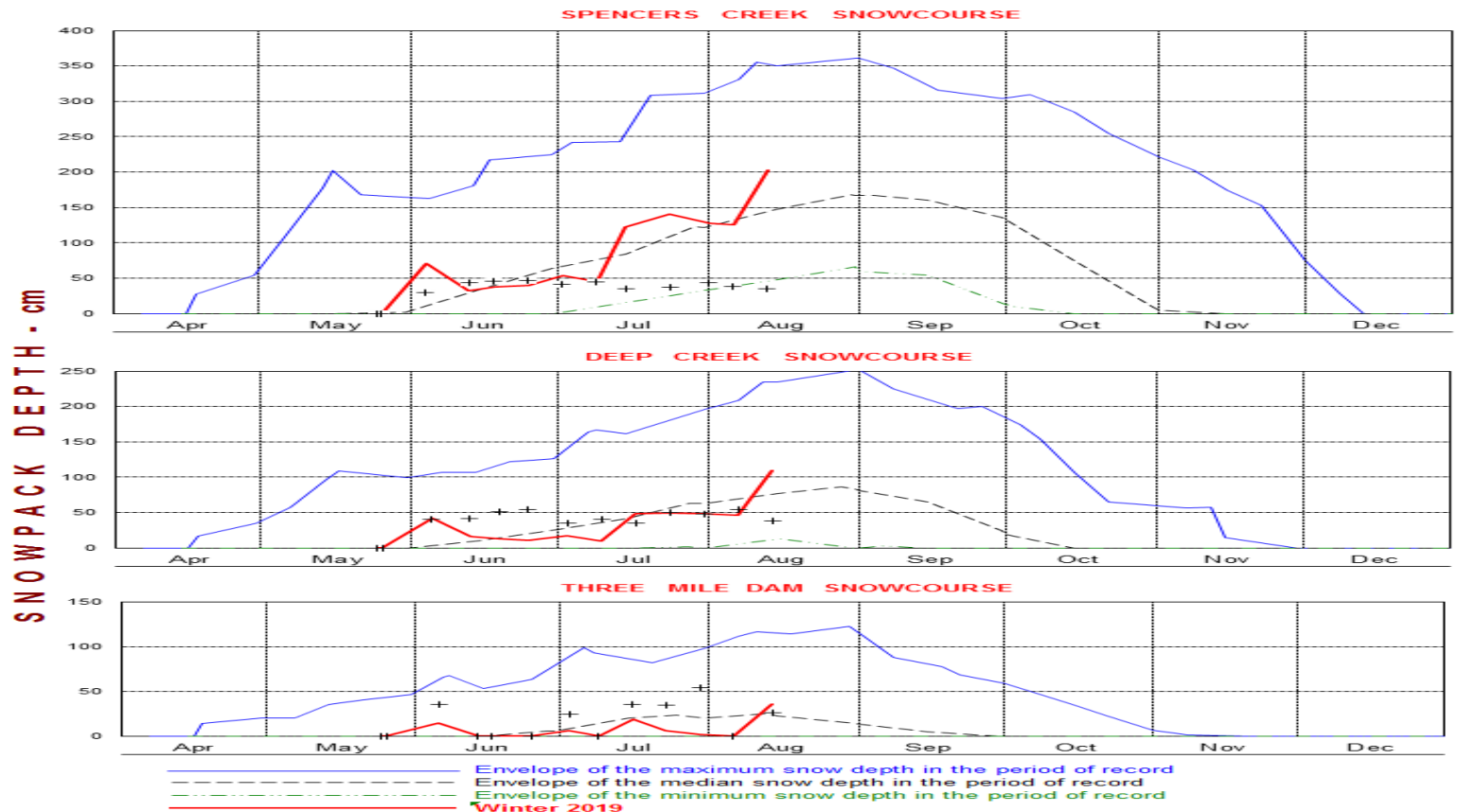
# Total Murrumbidgee Valley System Natural Inflows (excluding Snowy) Selected Drought Years-v-Long term average



**FIGURE 1: HISTORICAL MURRUMBIDGEE VALLEY INFLOWS (1968-2019)**  
 (Excluding Snowy Scheme Transfers)







Snowcourse	Elevation	Period of Record	Maximum Envelope Peak Year	Maximum Envelope Peak cm	Minimum Envelope Peak Year	Minimum Envelope Peak cm
Spencers Creek	1830 m	1954 - 2018	1981	361.0	1969	65.6
Deep Creek	1620 m	1957 - 2018	1981	252.0	1973	12.7
Three Mile Dam	1460 m	1955 - 2018	1956	122.4	1955	0.0

SNOWY HYDRO LIMITED

Water Resources Division

15 Aug 2019

SNOWPACK DEPTH AT SELECTED SHL SNOWCOURSES



# Snowy Storages

Total Snowy storage = 21.3%, Eucumbene = 17.0% @ 31/07/19

	Snowy Murray	Snowy Tumut	Total
BTW Including DISV Reserve	0	590	590
ATW (Including ATW Reserve)	323	219	542
Active Storage	323	809	1132

## Releases since 1 May 2019 to 31 July 2019:

Snowy-Tumut 309 out of 880 GL

Snowy-Murray 265 out of 782 GL (dependant on inflows)

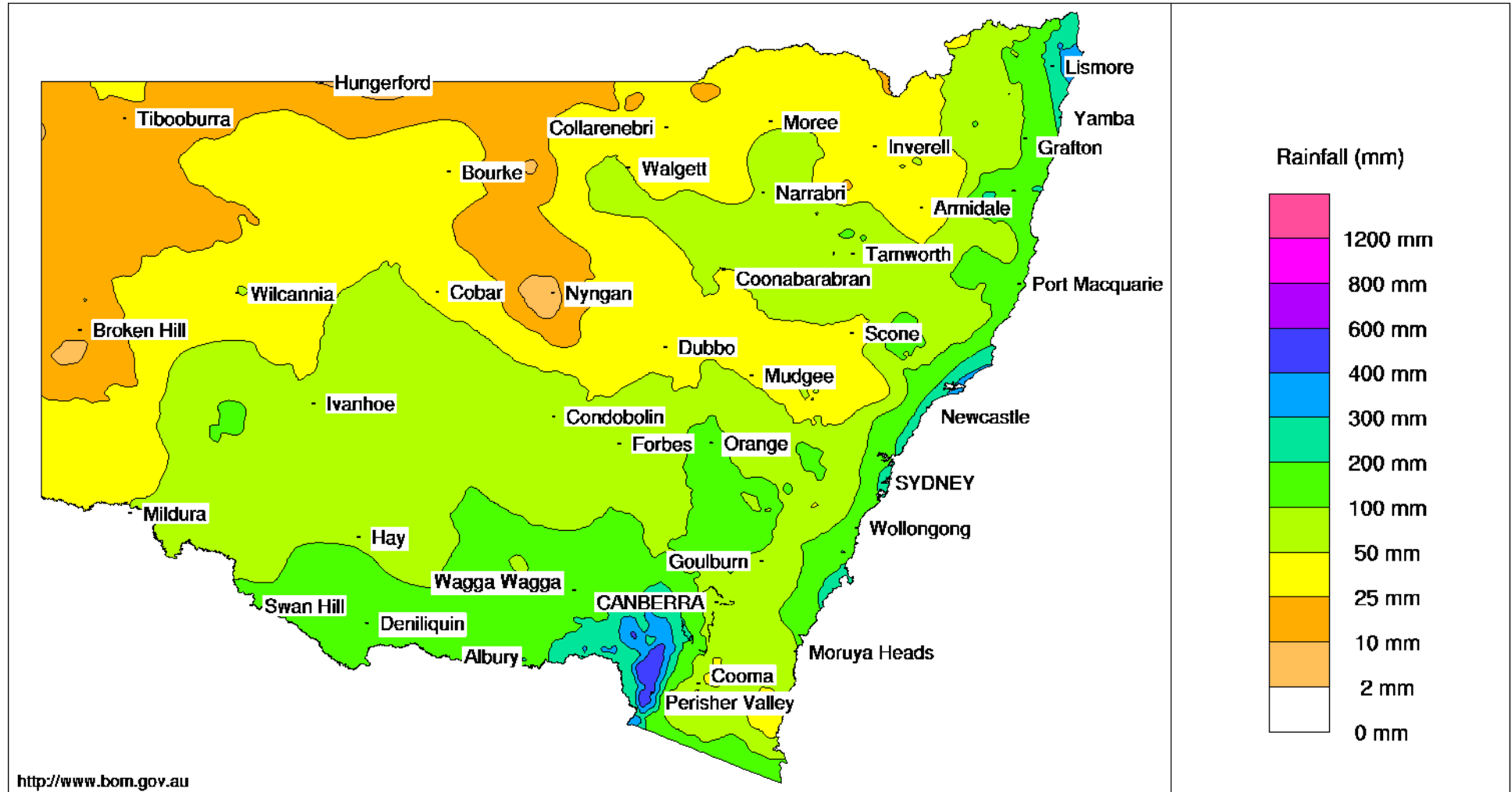


# Snowy 2020-21 Outlook

- Based on Minimum inflows, there will no little Below Target Water (BTW) left in the Snowy Tumut at the end of February
- August inflows are tracking better than minimum.
- Dry Inflow Sequence Volume (DISV) for next year (2020-21) depends on how much inflows are above minimums.

# New South Wales Rainfall totals (mm) 1 May to 31 July 2019

Australian Bureau of Meteorology



<http://www.bom.gov.au>

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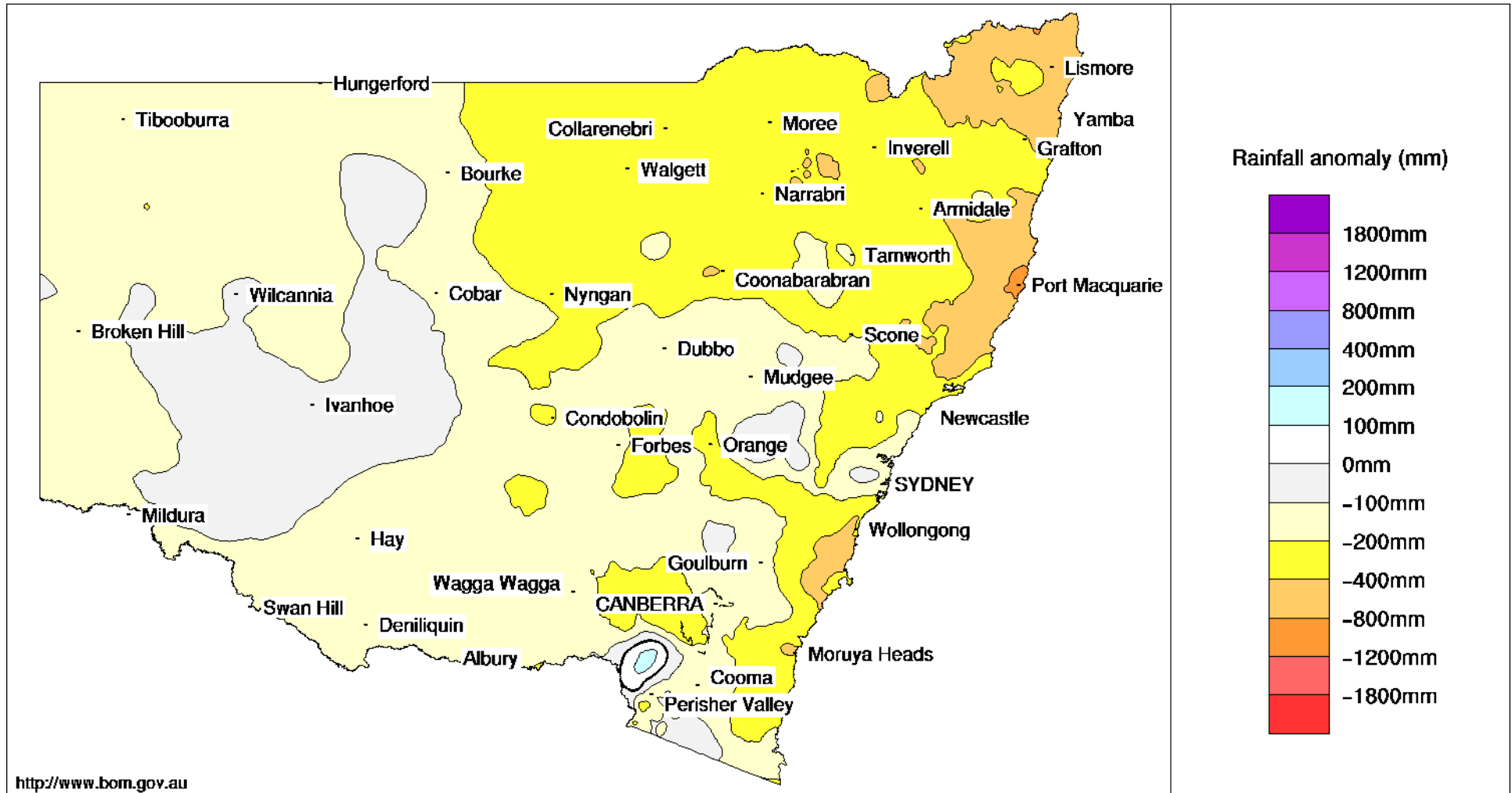
Issued: 21/08/2019



# Rainfall anomalies (mm)

1 August 2018 to 31 July 2019

Australian Bureau of Meteorology



<http://www.bom.gov.au>

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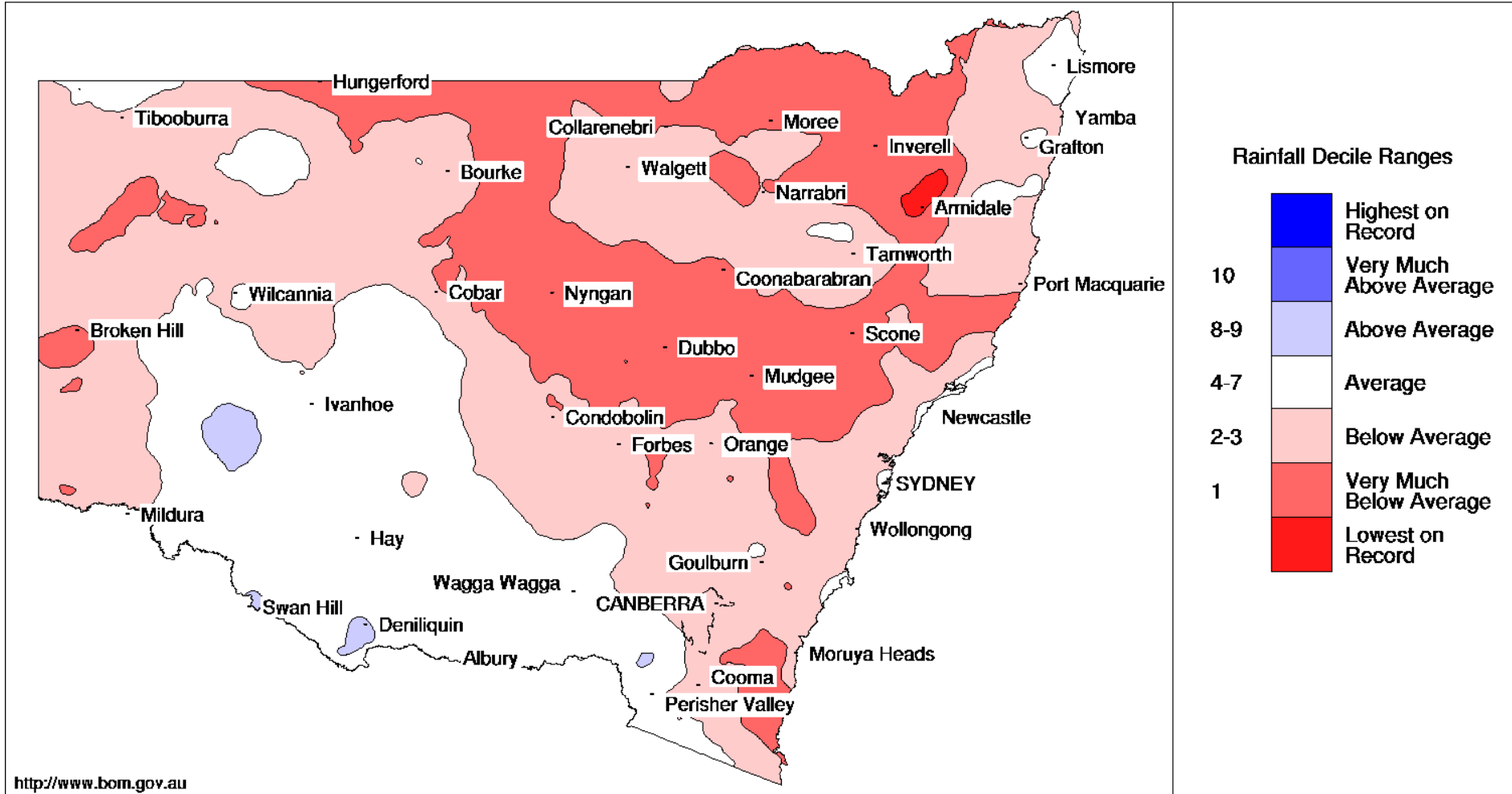
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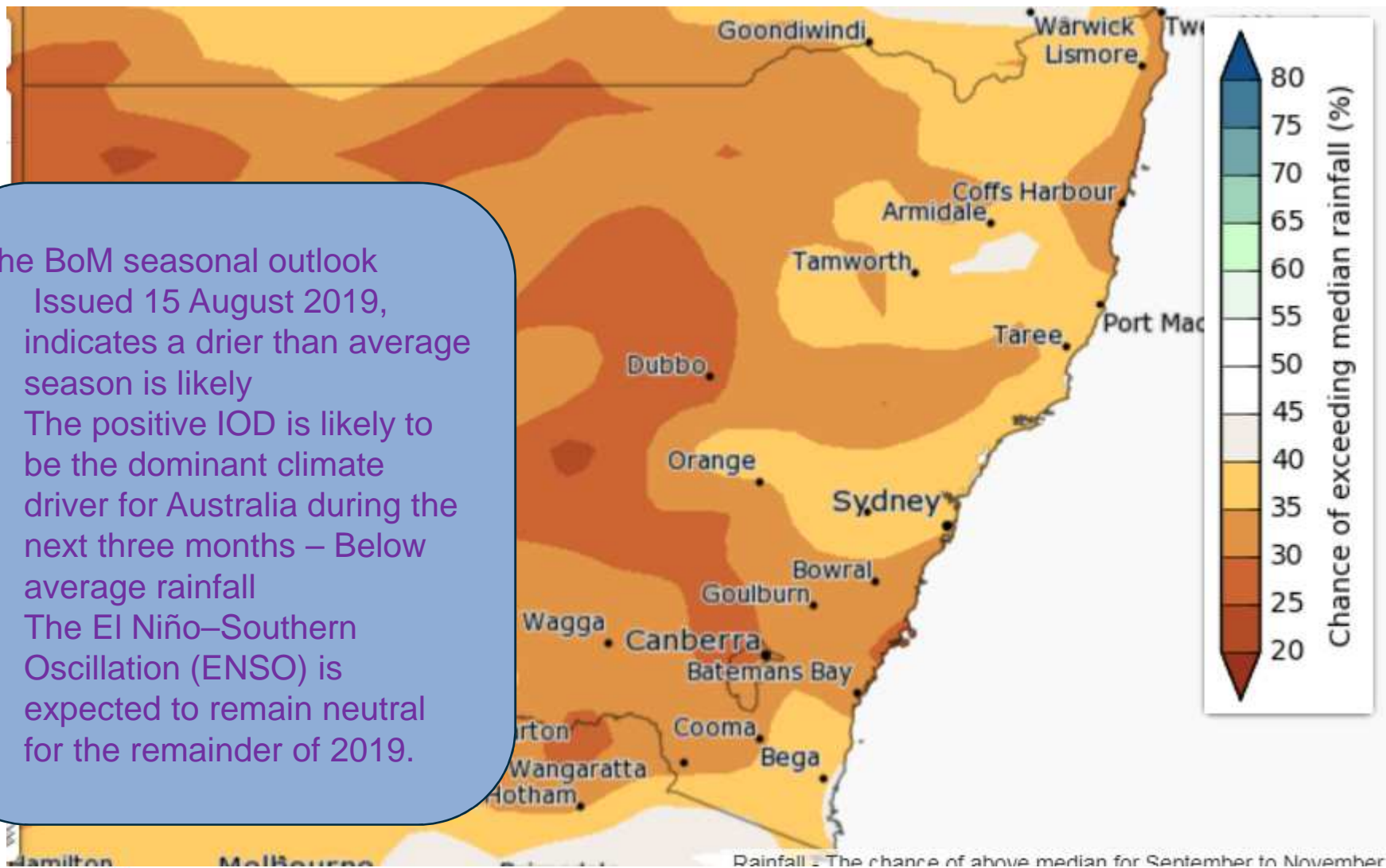
# New South Wales Rainfall Deciles 1 May to 31 July 2019

Distribution Based on Gridded Data  
Australian Bureau of Meteorology



### The BoM seasonal outlook

- Issued 15 August 2019, indicates a drier than average season is likely
- The positive IOD is likely to be the dominant climate driver for Australia during the next three months – Below average rainfall
- The El Niño–Southern Oscillation (ENSO) is expected to remain neutral for the remainder of 2019.



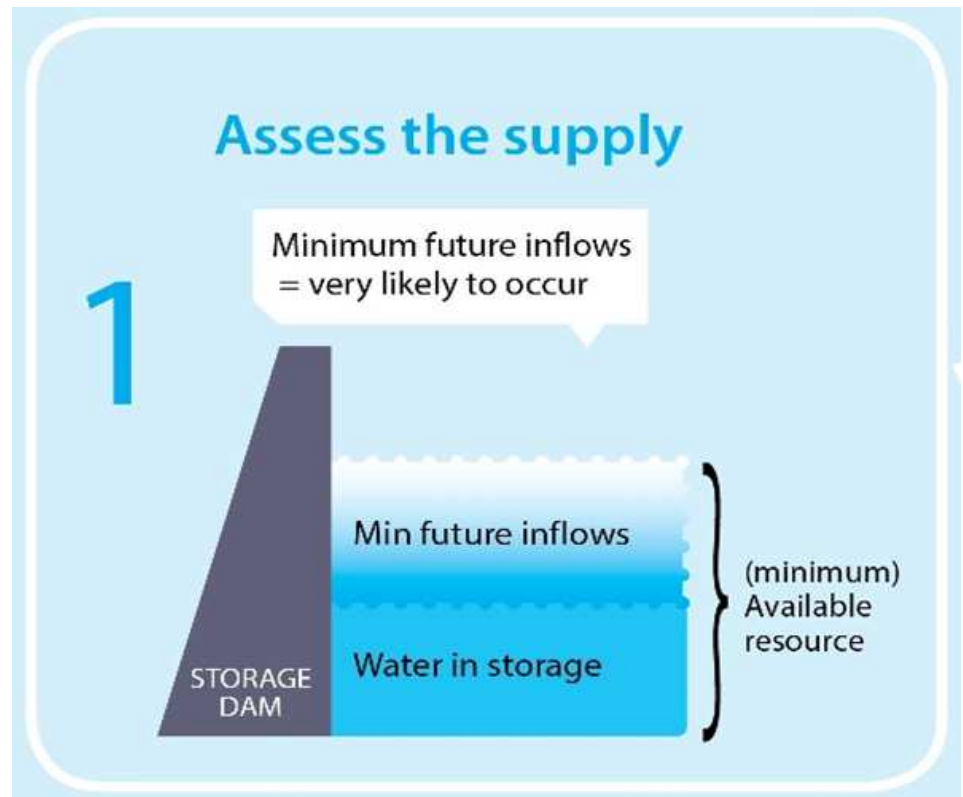
# NSW Water Allocation - Approach

- Government assumes an extremely dry outlook
  - Low risk
- Requirements codified in Water Sharing Plan
  - Priority of access to water (towns, domestic, stock, ...)
  - End of system flow requirements
  - Planned Environmental allowances
- Annual accounting (July - June)

# Step 1: Assess the supply – Future resources

Conservative estimate of future inflows for rest of year

- Water in storages (BJ+BL)
- Calculated inflow recession (from any recent rainfall)
- Snowy assured storage inflow
  - Required Annual Releases (RAR) – nominally 1026 GL.



# Step 2: Assess existing commitments

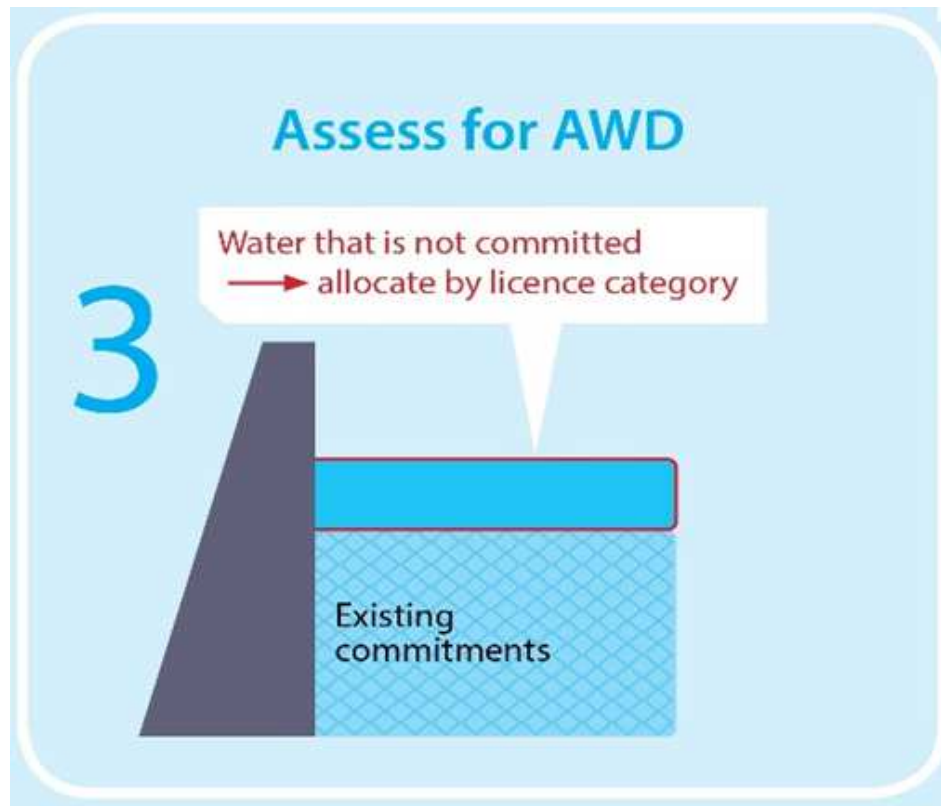
## Essential / Fixed Requirements

- Already allocated volumes
  - End of system targets
  - Environmental Water Accounts (EWAs)
  - Storage reserves (includes provisional storages - PSVs)
- System Losses
- Evaporation, Transmission, Operational
- Water committed at the start of the year
- Carry over
  - IVT

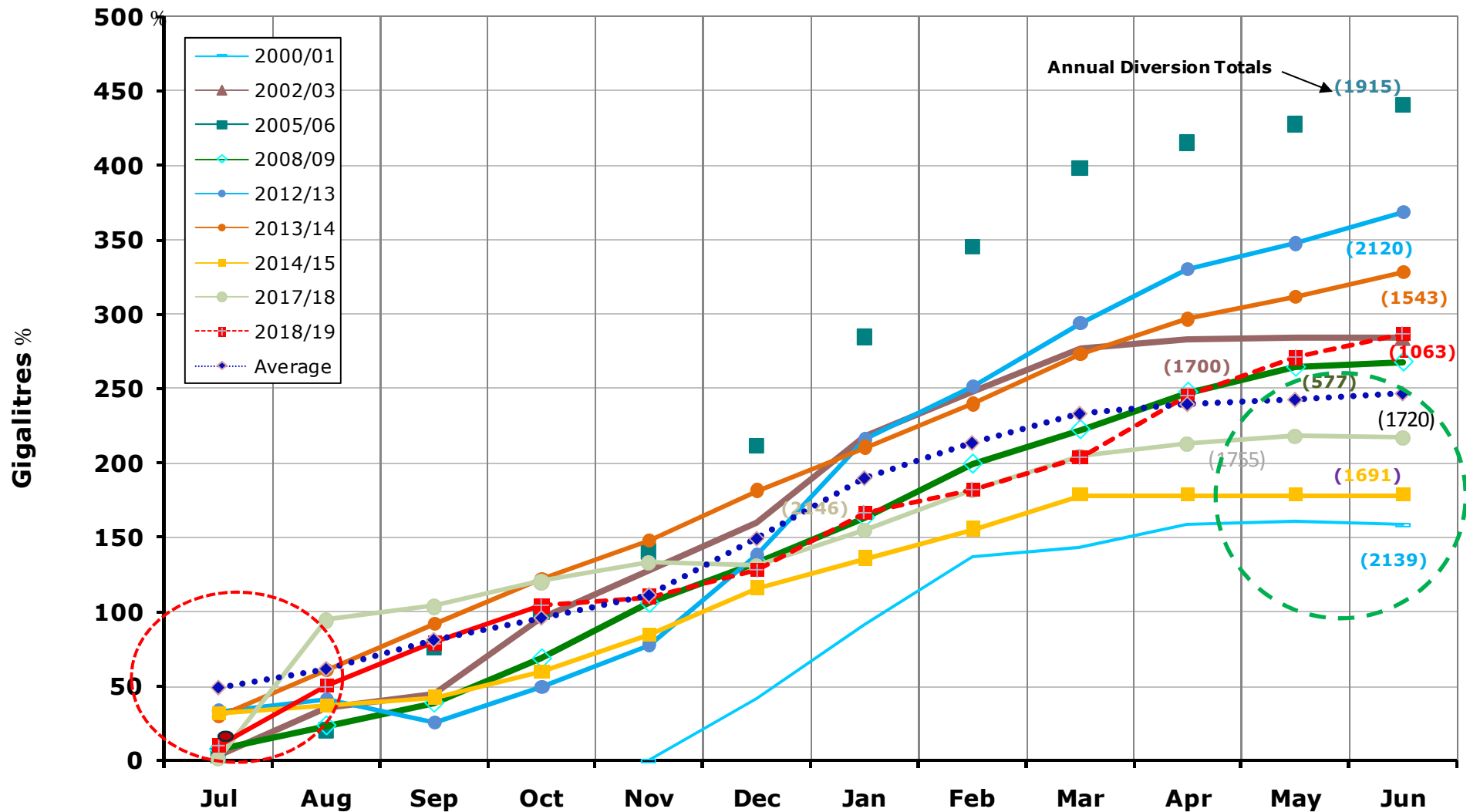




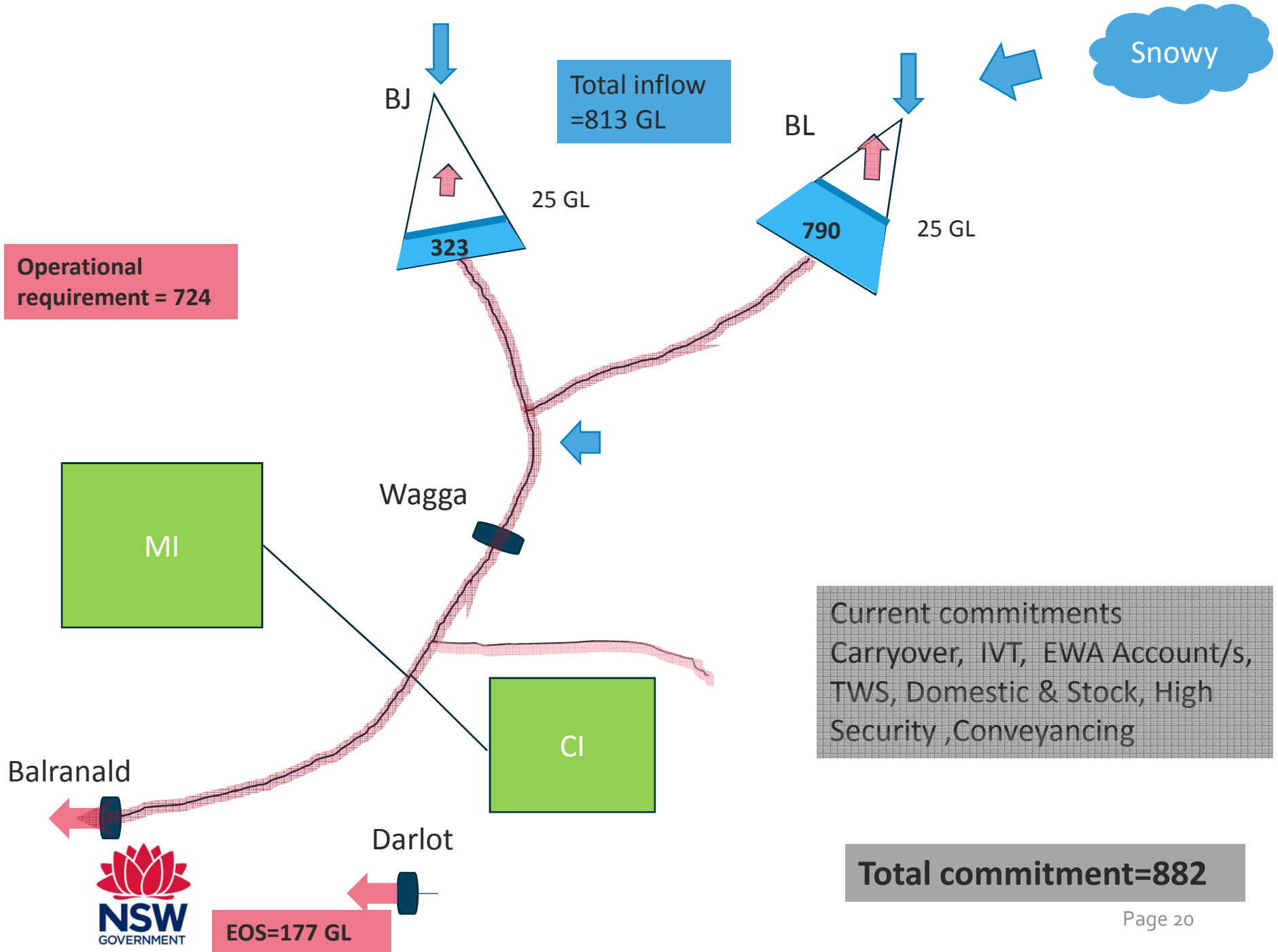
# Step 3 & 4 : Assess and announce



# Main river transmission losses



# Allocation update as of 15 August 2019



# Murrumbidgee resource assessment 15 Aug 2019

Items	Volume (GL)	Comments
Total resources	1,934	Active volume in storages, snowy RAR, Future inflows and recessions
<b>Operational Requirements</b>		
Volume required for system losses	497	Storage evaporation, transmission losses, Ops Loss main river & Yanco Ck.
EOS flow target	177	Flow committed to River Murray for rest of the year
Storage reserves	50	End of season reserve
Total operational requirements	<b>724</b>	

# Murrumbidgee resource assessment

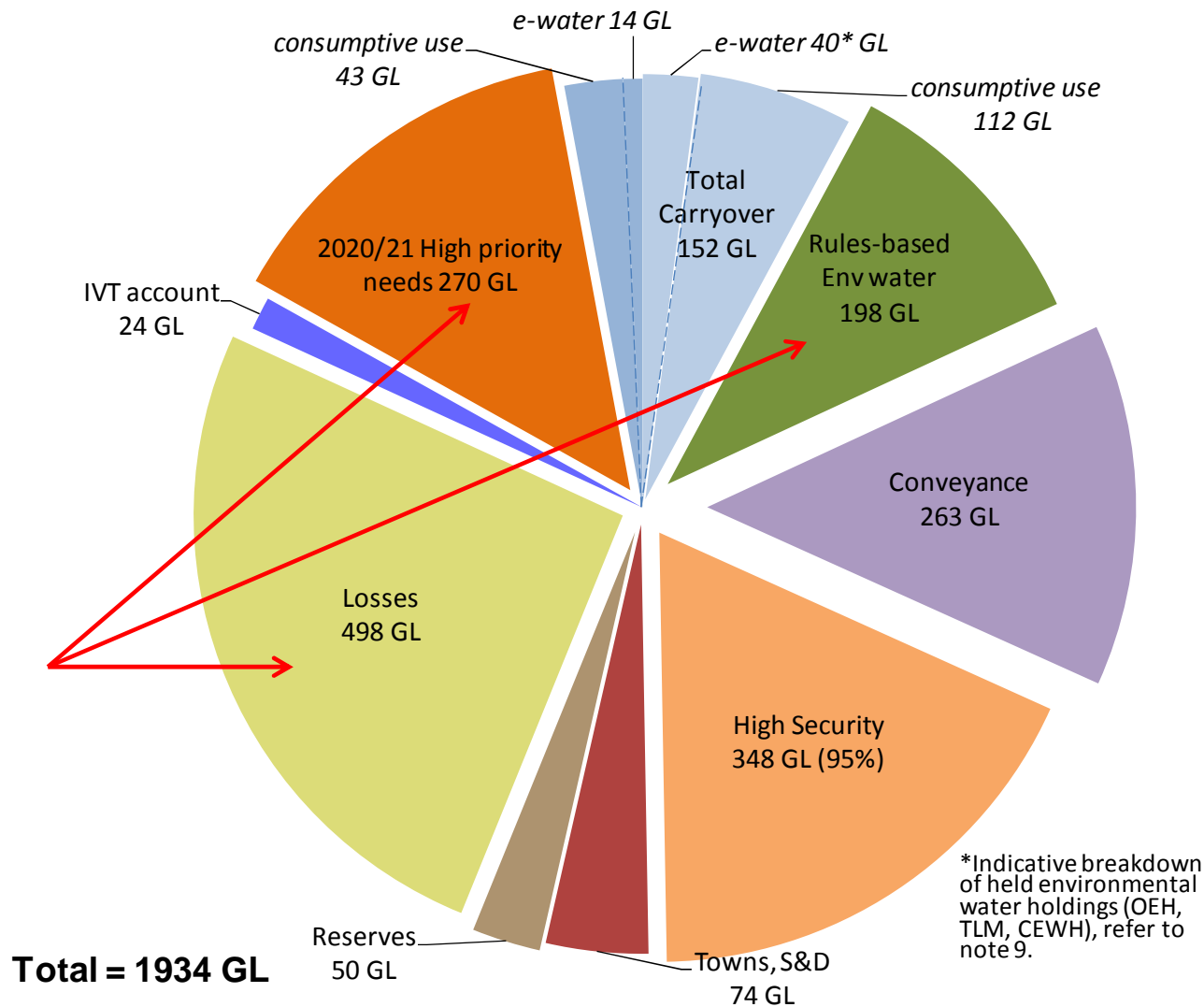
## 15 Aug 2019

Current Commitments	Volume (GL)	Comments
Carryover	152	From 2018/19 into 2019/20
IVT (carryover from previous year)	24	Undelivered IVT at start of the year
EWA Account/s	21	Accumulated
TWS	44	Town water allocation at 100% on 1 July 2019
Domestic & Stock	31	Domestic and stock at 100% 1 July 2019
High Security	348	95% HS announced on 1 July 2019
Conveyancing for IC's category	262	Conveyance licence
General Security allocations	0	GS allocation 0%
<b>Total current commitments</b>	<b>882</b>	

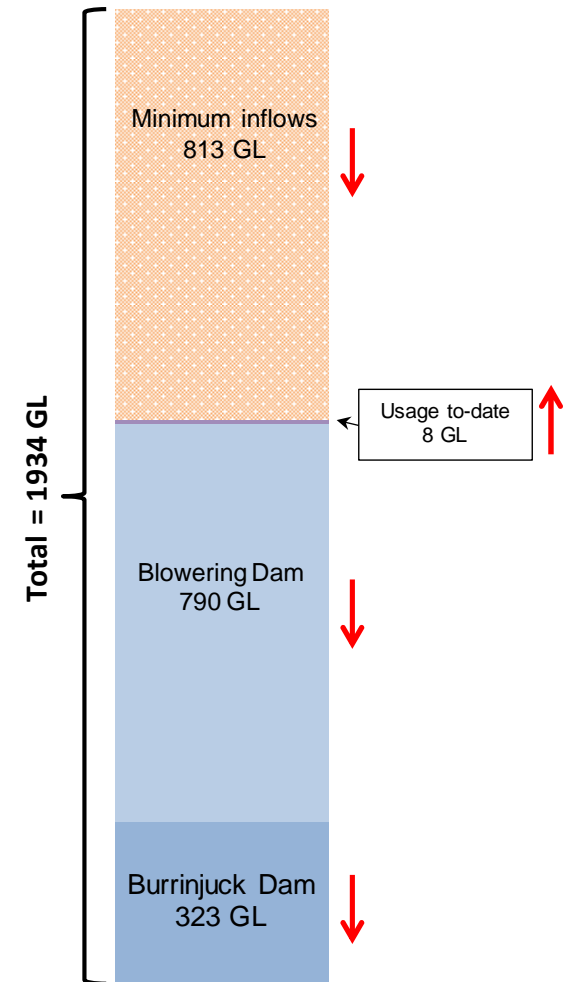
# Resource Distribution 15 Aug 2019

	Volume GL	Volume GL
Total resources		1934
<i>Less</i>		
Total operational requirements	724	
Current commitments	882	
<i>Equals</i>		
Water available		328
<i>Less</i>		
Reserved for Next year Essential supply	270	
Water Available for allocation		58
Proposed General Security 3%	57	
Conveyancing to Irrigation Corps	1	
Uncommitted water		0

# Murrumbidgee resource distribution 2019-20 – 15 August 2019

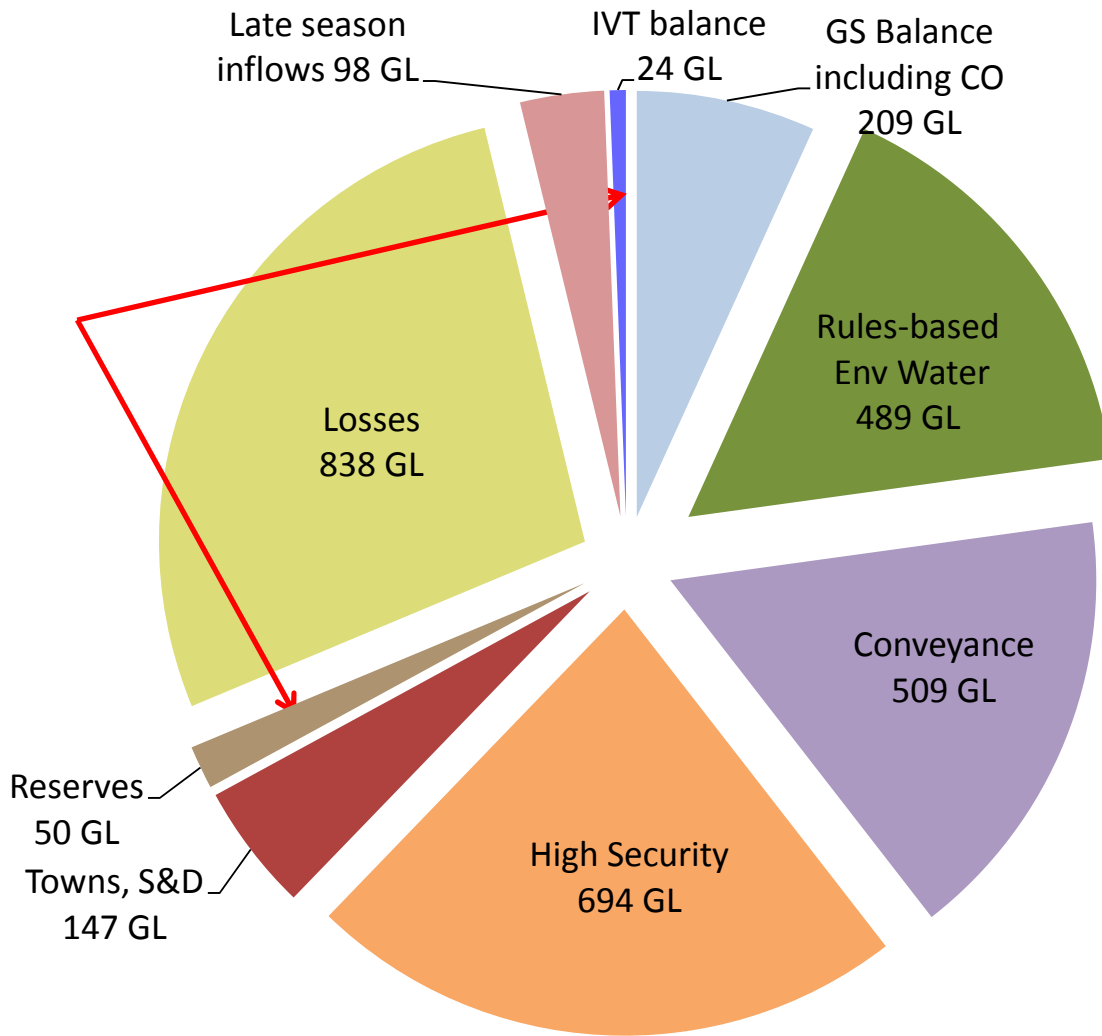


## Supply Distribution<sup>(10)</sup>

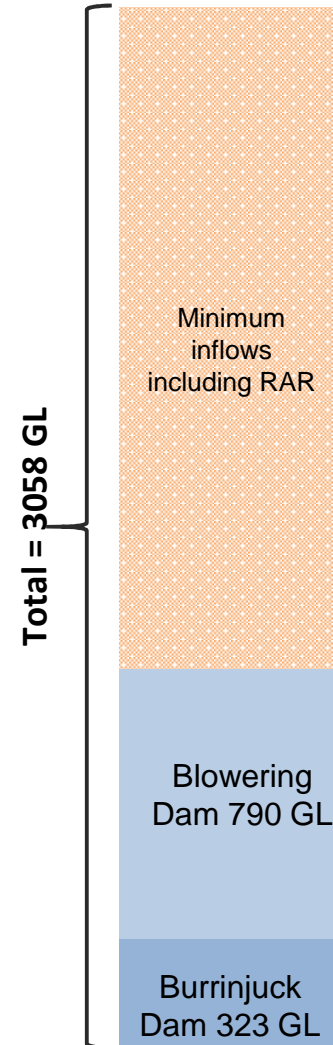




# Two Year Resource Distribution 2019-21



## Supply Distribution

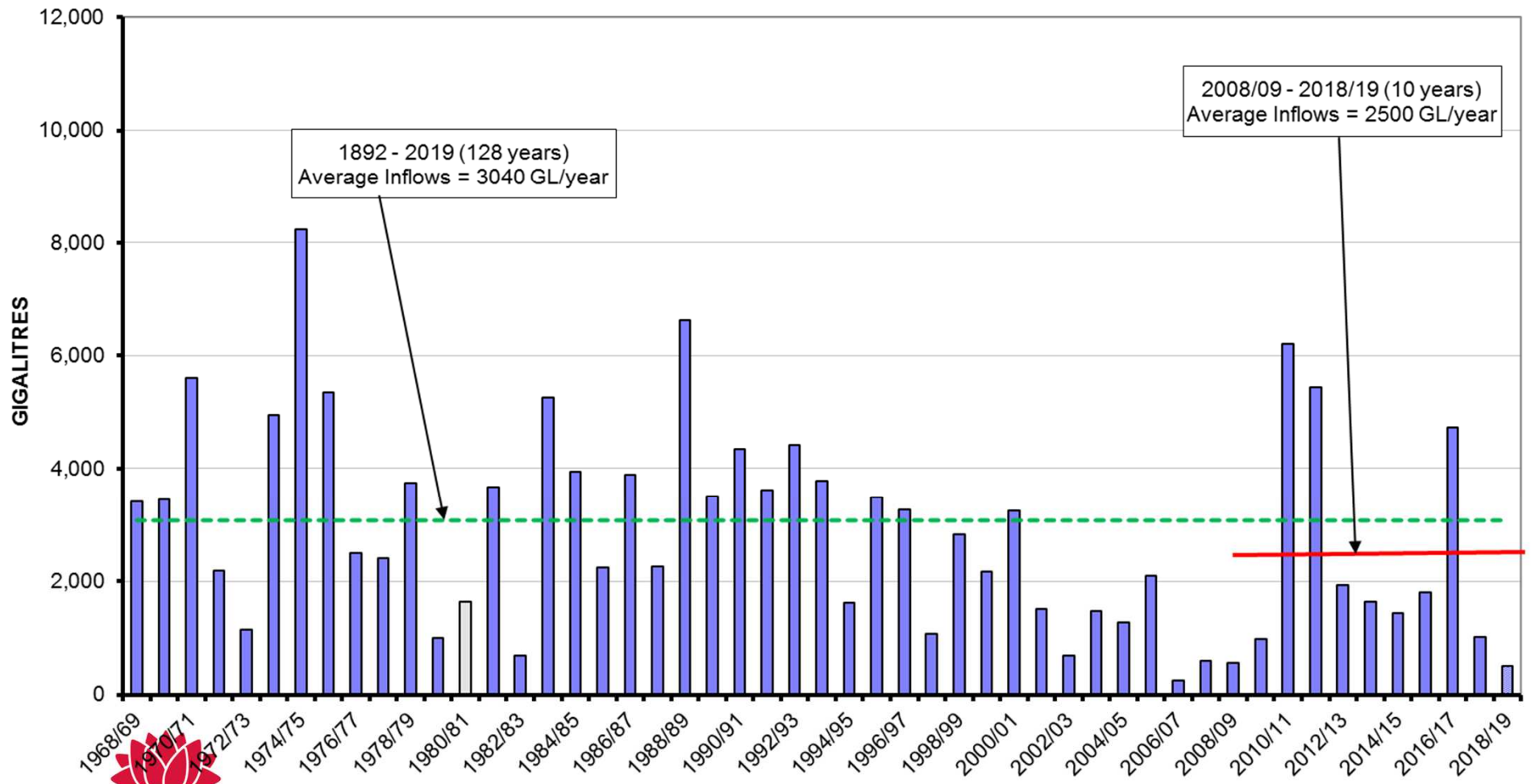


**Total = 3058 GL**

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
NSW GOVERNMENT												Year 1											
												Year 2											



**FIGURE 1: HISTORICAL MURRUMBIDGEE VALLEY INFLOWS (1968-2019)**  
 (Excluding Snowy Scheme Transfers)



# Forecast General Security allocation (per cent)

## Forecast General Security allocation (per cent)

(Any carryover water can be added to these indicative allocations)

<b>Historical Inflow Scenario</b>	<b>1 Oct 2019</b>	<b>1 Feb 2020</b>
99 chances in 100 (extreme) (99%)	3	3
9 chances in 10 (very dry) (90%)	3	3
3 chances in 4 (dry) (75%)	5	8
1 chance in 2 (median) (50%)	14	32

Note 1: Estimated values indicative only, not guaranteed and subject to change based on actual events unfolding.

Note 2: Storage behaviour modelling using all years and general security carryover of 8%.

Note 3: Currently tracking about 90<sup>th</sup> percentile in the last 2 months (June to July).

# Forecast General Security allocation

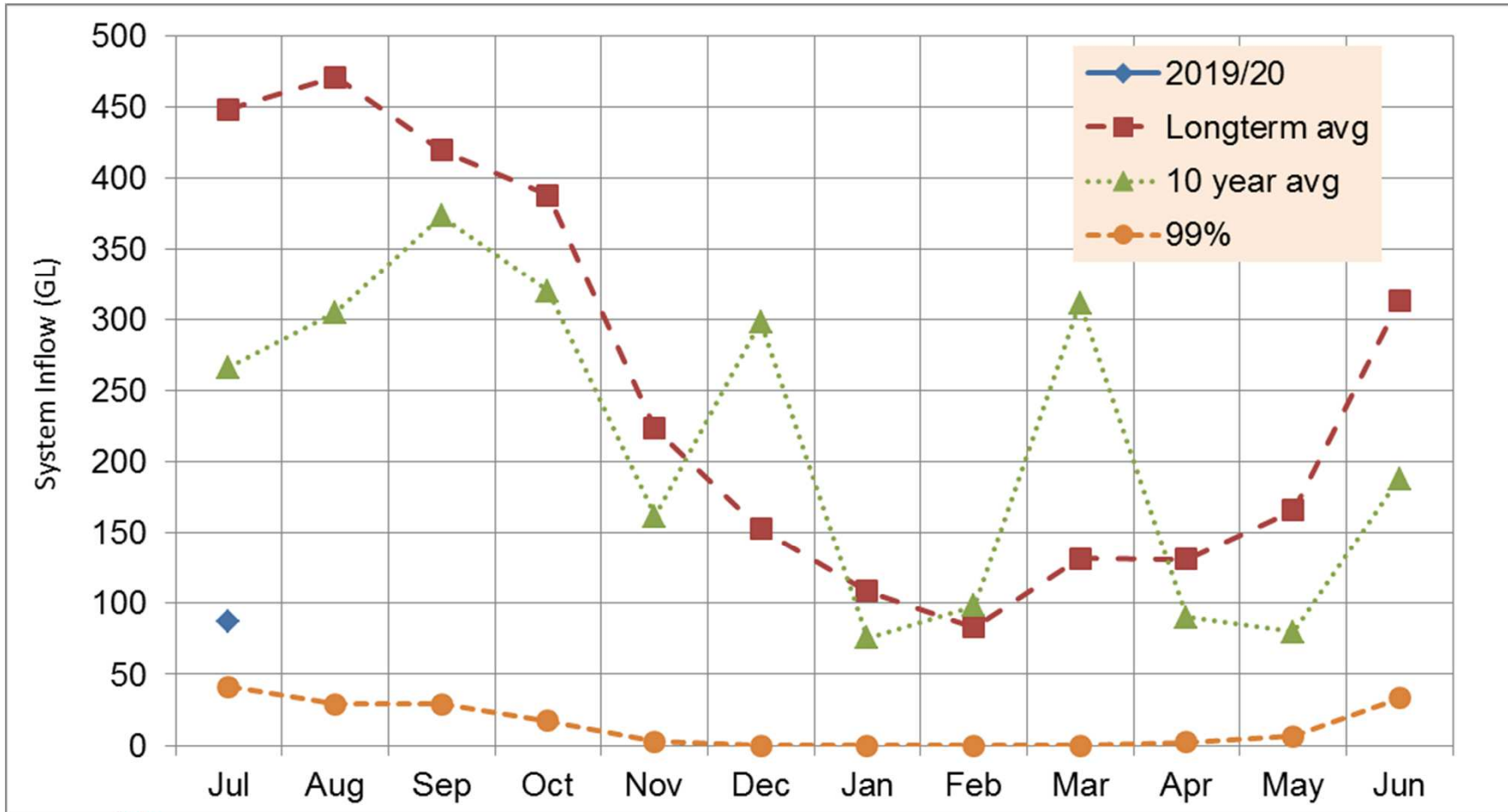
Exceedance	Water Year 2019/20												Allocation on 1 October	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
99 chances in 100 (extreme) (99%)	90%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	<b>3%</b>
9 chances in 10 (very dry) (90%)	90%	98%	90%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	<b>3%</b>
3 chances in 4 (dry) (75%)	90%	98%	75%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	<b>5%</b>
1 chance in 2 (median) (50%)	90%	98%	50%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	<b>14%</b>
Exceedance	Water Year 2019/20												Allocation on 1 Feb	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
99 chances in 100 (extreme) (99%)	90%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	<b>3%</b>
9 chances in 10 (very dry) (90%)	90%	98%	90%	90%	90%	90%	90%	99%	99%	99%	99%	99%	99%	<b>3%</b>
3 chances in 4 (dry) (75%)	90%	98%	75%	75%	75%	75%	75%	99%	99%	99%	99%	99%	99%	<b>8%</b>
1 chance in 2 (median) (50%)	90%	98%	50%	50%	50%	50%	50%	99%	99%	99%	99%	99%	99%	<b>32%</b>

# Murrumbidgee resource assessment – comparison with this time previous years

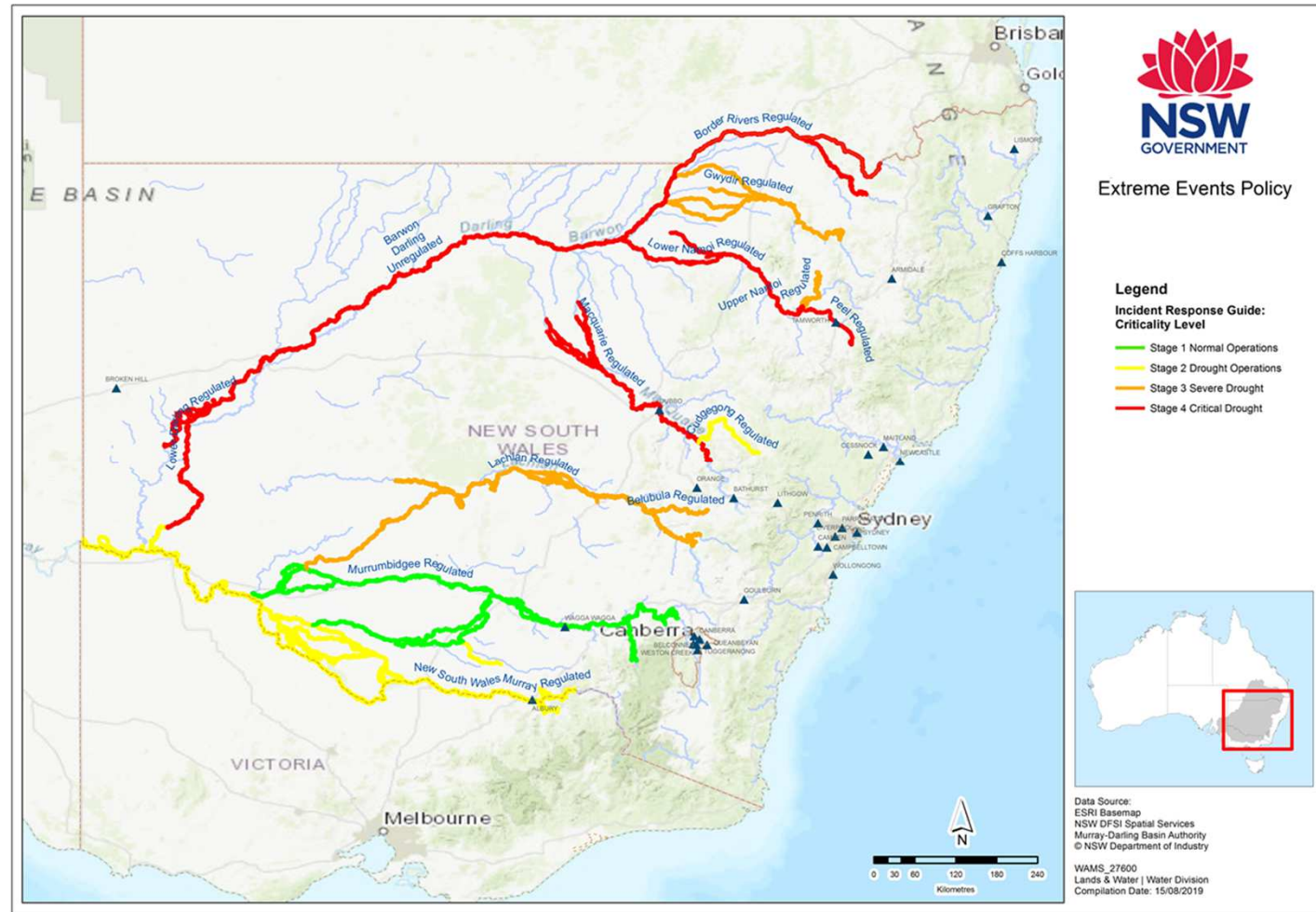
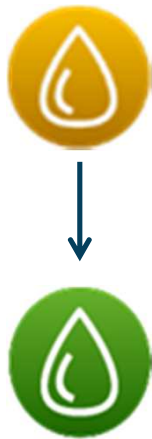
Item		Mid Aug 2016 (GL)	Mid Aug 2017 (GL)	Mid Aug 2018 (GL)	Mid Aug 2019 (GL)
Storage Volume (GL)	Burrinjuck	899	566	417	325
	Blowering	1,259	1,279	1,191	815
	Total	2,158	1,845	1608	1,140
Losses (trans, evap, opes)*		580	571	558	498
1 July IVT carryover balance		100	89	-14	24
GS Available		50%	23%	6%	3%
Average GS Carryover		19%	27%	22%	8%



# Average inflows- excluding Snowy transfers



# Drought Criticality from Stage 2 to Stage 1





Thank you

Any feedback for the water allocation statement :  
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