

Namoi Peel Operations Plan

November 2018

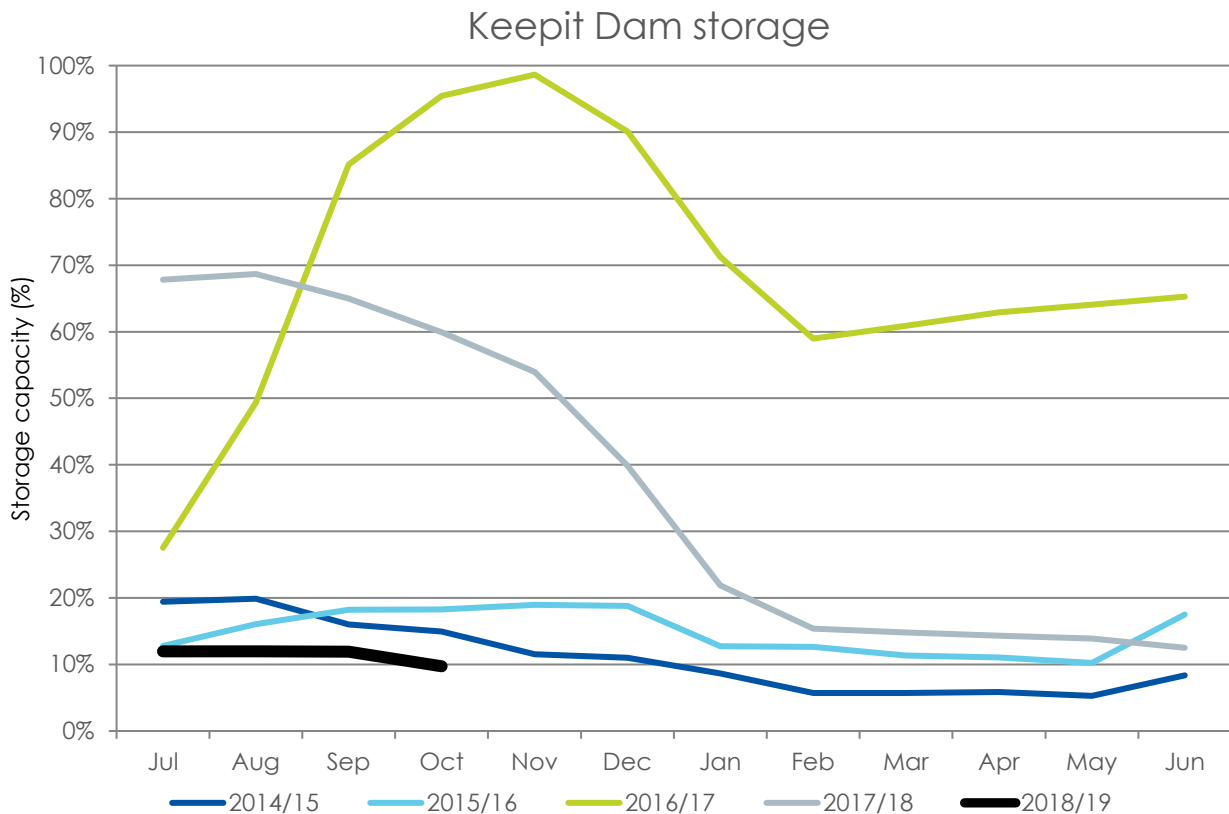
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2. Dam storage

2.1 Keepit Dam storage

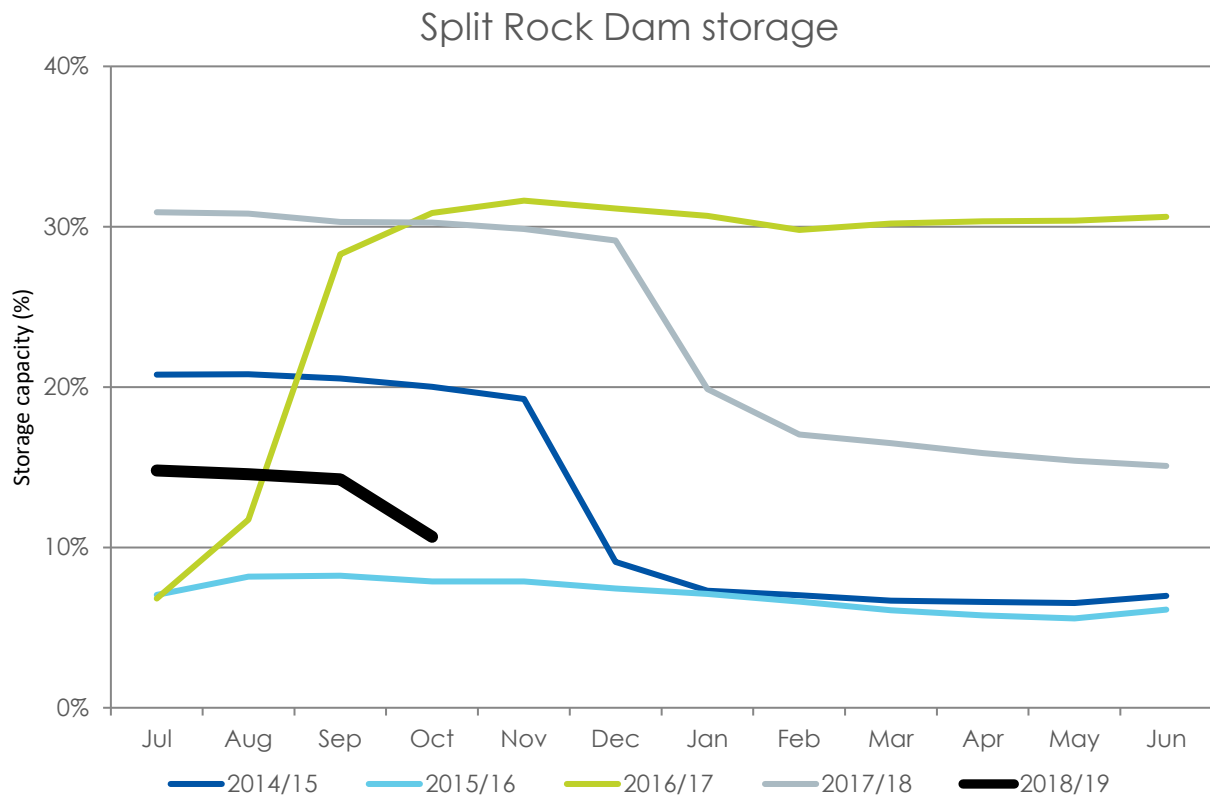
The below figure shows the Keepit Dam behaviour for the 2017-18 water year compared to the last four water years.



From the above figure it can be seen that Keepit Dam was around 12% at the start of this water year and it is now just slightly under 10% of active capacity. The storage was drawn down only by releases for minimum flows, and it did not rise as there were no significant inflows. A Bulk Water Transfer from Split Rock to Keepit was required to deliver water in the Lower Namoi. The Bulk Water Transfer was undertaken from mid-October.

2.2 Split Rock Dam storage

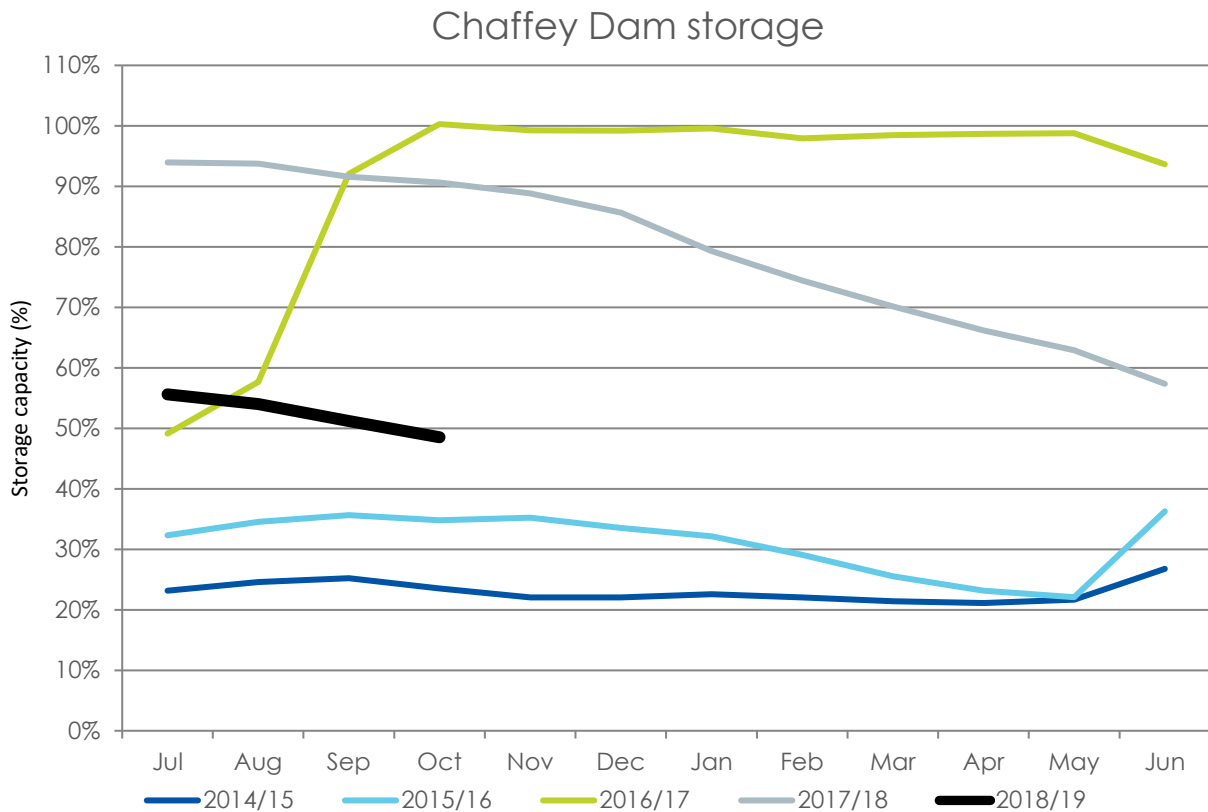
The below figure shows the Split Dam behaviour for the 2018-19 water year compared to the last four water years.



- From the above figure it can be seen that Split Rock Dam was under 15% at the start of this water year and it is now close to 10% of active capacity. The change in storage levels was primarily impacted by a Bulk Water Transfer to Keepit Dam.

2.3 Chaffey Dam storage

The below figure shows the Chaffey Dam behaviour for the 2018-19 water year compared to the last four water years.



- From the above figure it can be seen that Chaffey dam volume was around 55% at the start of the water year and it is now close to 48% of active capacity.

3. Supplementary access

3.1 Commentary

There have not been any supplementary events in the Lower Namoi since the start of the 2018/19 water year.

3.2 Explanation

No supplementary access was available since the start of the 2018/19 water year due to lack of high flow runoff events entering the system.

4. Water availability

4.1 2018/2019 water availability for Peel as of 31 October 2018

Licence category	Share component	Carryover in	AWD volume	Allocation assignments in	Allocation assignments out	Usage	Balance
Domestic and stock	77	-	77	-	-	9	68
Domestic and stock (domestic)	66	-	66	-	-	1	65
Domestic and stock (stock)	20	-	20	-	-	-	20
Local water utility	16,400	-	16,400	-	-	3,343	13,057
Regulated river (general security)	29,635	- 273	11,261	1,470	1,470	2,714	8,275
Regulated river (high security)	801	-	801	110	110	12	789
Regulated river (high security) [research]	3	-	3	-	-	-	3
Grand total	47,002	- 273	28,628	1,580	1,580	6,079	22,276

Peel River valley

AWD (ML/share, %)	Licence category	Date of allocation
0.38 / 38%	General security	4 October 2018, latest AWD
1.00 / 100%	High security	1 July 2018
1.00 / 100%	Domestic and stock	1 July 2018
1.00 / 100%	Local water utilities	1 July 2018

- Currently Chaffey Dam volume is about at 48.5%.
- In this current water year, Available Water Determinations (AWD) are the equivalent of 38% for General Security (GS). For other water users (e.g. High Security and Town Water Supply), the AWD is 100%. No carryover applies in the Peel.
- Further general security AWD's are possible throughout the year.

- The sum of account balance refers the amount of water available to the account of the users after trades and usage.

4.2 2018/2019 water availability for Upper Namoi as of 31 October 2018

Licence category	Share component	Carryover in	AWD volume	Allocation assignments in	Allocation assignments out	Usage	Balance
Domestic and stock	74	-	74	-	-	2	72
Domestic and stock (domestic)	11	-	11	-	-	-	11
Domestic and stock (stock)	5	-	5	-	-	5	-
Local water utility	515	-	515	-	-	86	429
Regulated river (general security)	11,454	743	10,928	354	2,913	1,801	7,015
Regulated river (high security)	80	-	80	-	-	16	64
Grand total	12,139	743	11,613	354	2,913	1,910	7,591

Upper Namoi

AWD (ML/share %)	Licence category	Date of allocation
1.00 / 100%	General security	1 July 2018
1.00 / 100%	High security	1 July 2018
1.00 / 100%	Domestic and stock	1 July 2018
1.00 / 100%	Local water utilities	1 July 2018

- General Security water users in the Upper Namoi have access to unused water in their account carried over from the previous year, up to 50% of share component.
- However, the account limit rule for General Security licences of 100% of share component means there is an immediate forfeit of the carryover volume when the AWD is 100%.
- Towns, domestic and stock, and high security licence categories cannot carryover allocations.
- The Available Water Determinations (AWD) for all Upper Namoi licenses is 100%.
- Currently Split Rock Dam volume is at 10.7%, and may be lower than 5% at the end of June 2019.

4.3 2018/2019 water availability for Lower Namoi as of 31 October 2018

Licence category	Share component	Carryover in	AWD volume	Allocation assignments in	Allocation assignments out	Usage	Balance
Domestic and stock	1,665	0	1,665	-	-	65	1,600
Domestic and stock [domestic]	20	-	20	-	-	-	20
Domestic and stock [stock]	257	-	257	-	-	20	237
Local water utility	2,271	-	2,271	-	-	-	2,271
Regulated river (general security e)	13,548	5,947	-	-	-	-	5,947
Regulated river (general security)	231,527	41,415	-	8,250	5,740	2,784	41,131
Regulated river (high security)	3,418	-	3,418	-	-	518	2,900
Regulated river (high security) [research]	486	-	486	-	50	175	261
Supplementary water	115,480	-	115,480	-	-	-	115,480
Grand total	368,671	47,362	123,597	8,250	5,790	3,562	169,846

Lower Namoi

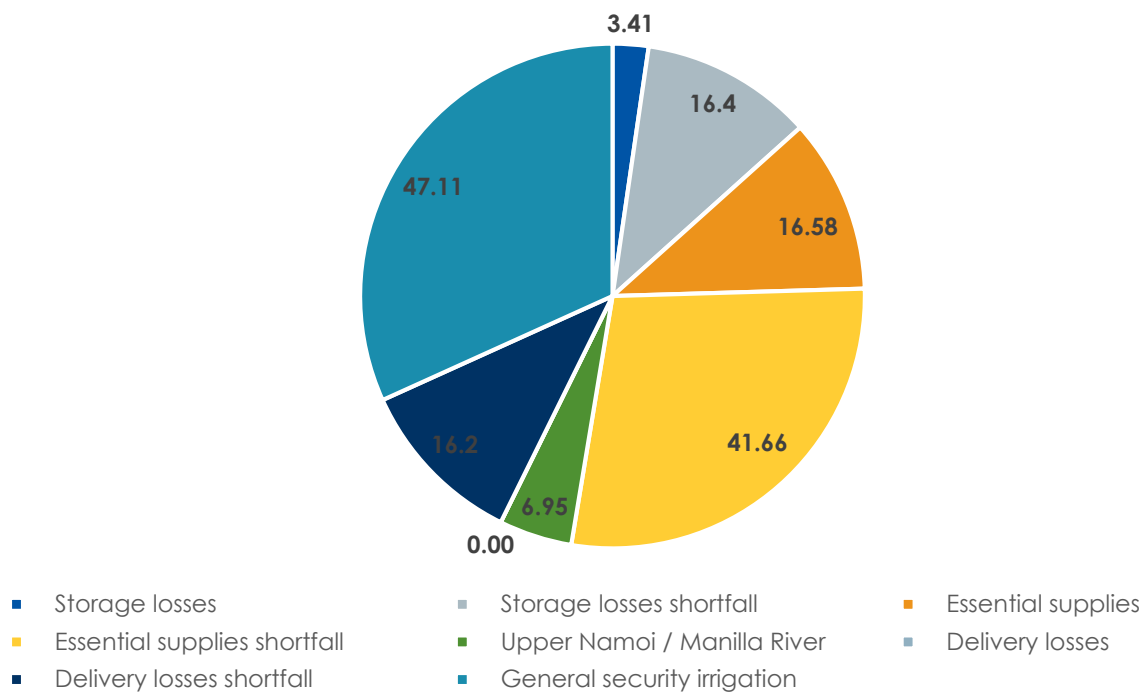
AWD (ML/share, %)	Licence category	Date of allocation
0.00 / 0%	General security	1 July 2018
1.00 / 100%	High security	1 July 2018
1.00 / 100%	Domestic and stock	1 July 2018
1.00 / 100%	Local water utilities	1 July 2018

- The initial Available Water Determinations (AWD) for the Lower Namoi are 100% for towns and high security, while general security is zero. Carryover into 2018-19 is estimated to be equivalent to 19% of general security share components.

- Currently Keepit Dam is at 9.7% capacity, without significant inflows no further AWD announcement will be made in 2018-19. Assuming minimum inflows, Keepit will be drawn down to close to dead storage level by end Jan 2019.

4.4 Resource assessment

Namoi Valley resource assessment distribution
1 November 2018



Water balance in the Namoi October 2018



End of October Namoi Valley storage volume: Keepit 41.38 (8.3 %), Split Rock 42.37 (9.9 %). Total shortfall 74.28 GL.

4.4.1 Significance of this resource assessment

The current resource assessment at 1 November 2018 indicates that 74.28 GL of inflow is required to make up for the shortfall before any future AWD announcements are possible.

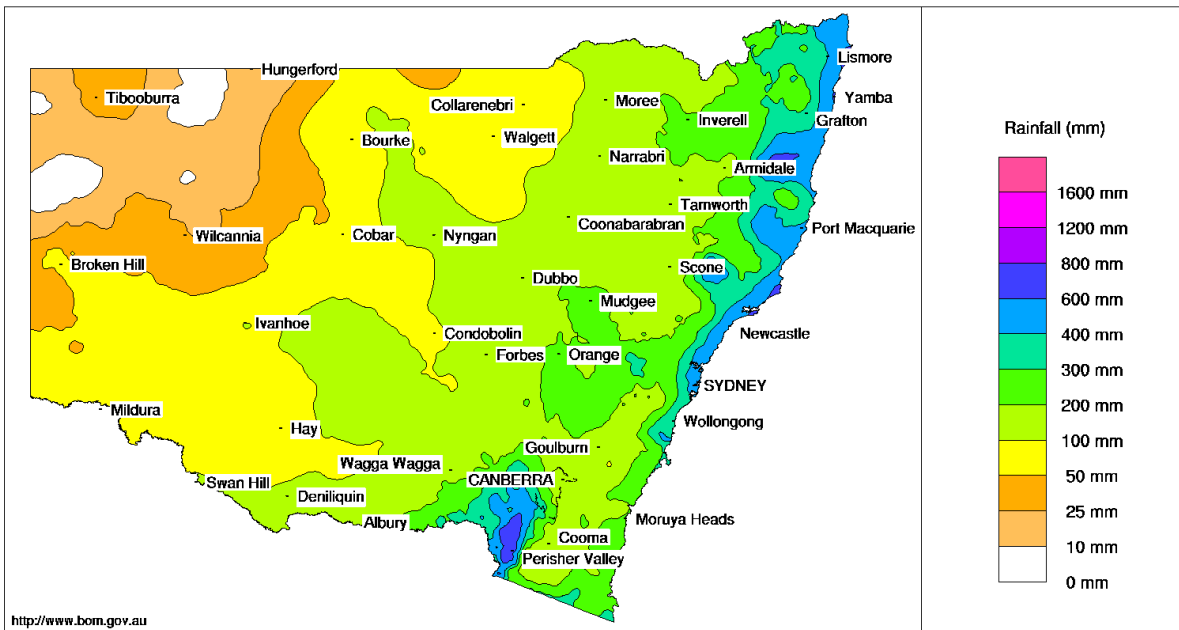
4.4.2 Resource assessment process

The Resource Assessment is the process of calculating how much water is available based on the rules of the Water Sharing Plan (WSP). This is done at the end of the month and when any significant inflow event happens. The above resource assessment table is for the planning horizon from 1 November 2018 to 31 October 2020.

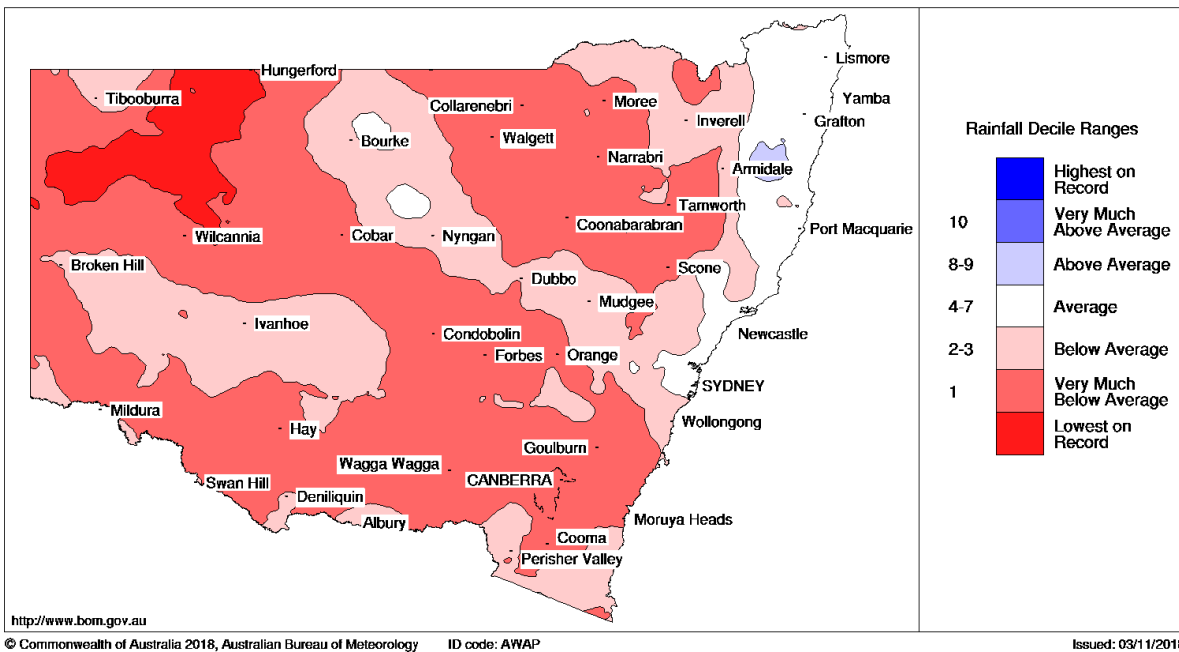
5. Rainfall

5.1 6-month rainfall

New South Wales Rainfall totals (mm) 1 May to 31 October 2018
 Australian Bureau of Meteorology



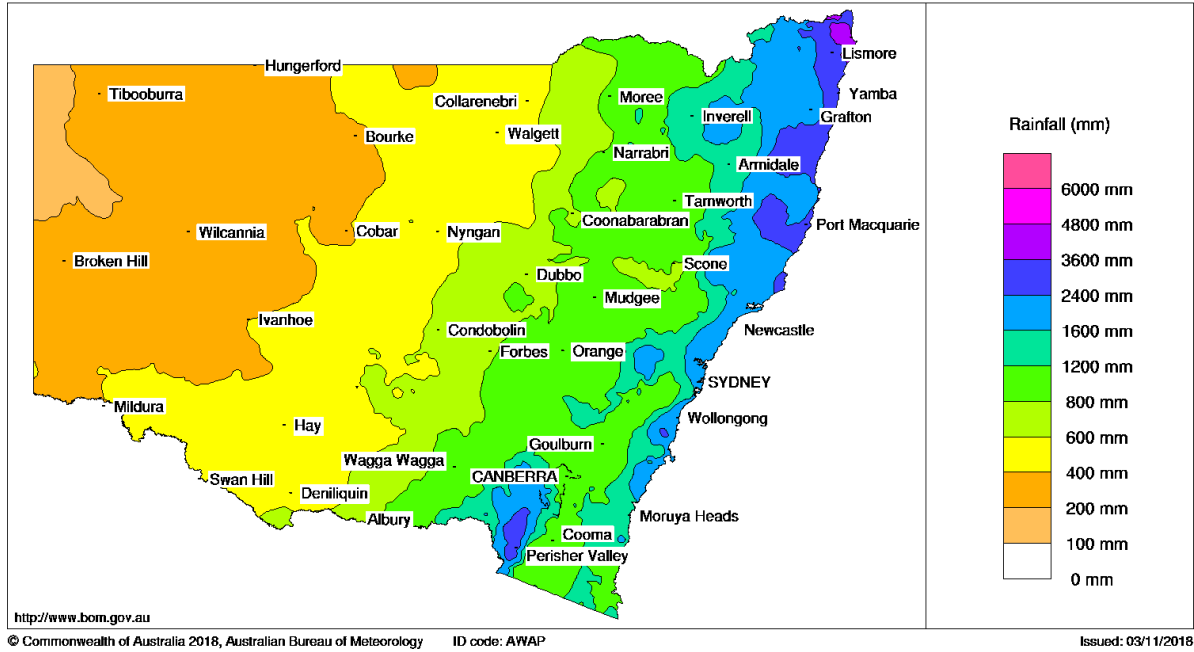
New South Wales Rainfall Deciles 1 May to 31 October 2018
 Distribution Based on Gridded Data
 Australian Bureau of Meteorology



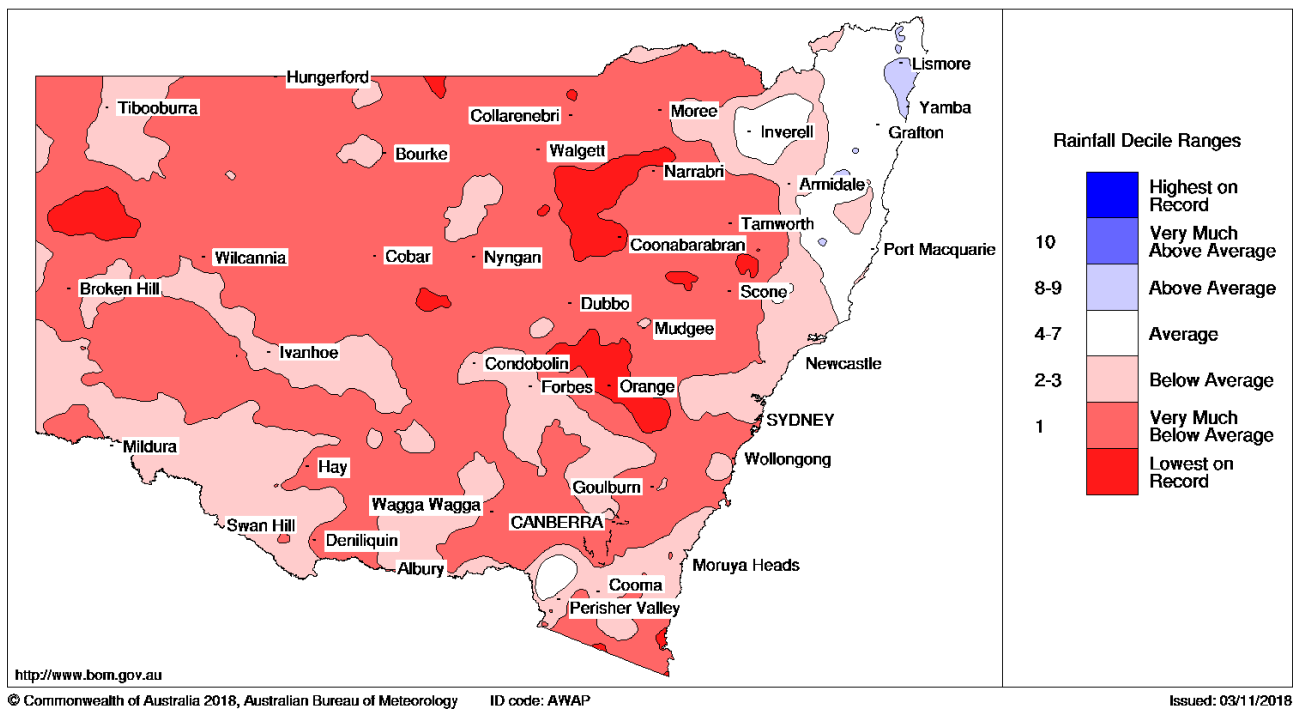
From the above figures the last 6-month total rainfall lies in the range of 50mm to 300mm, which is below average.

5.2 24-month rainfall

New South Wales Rainfall totals (mm) 1 November 2016 to 31 October 2018
Australian Bureau of Meteorology



New South Wales Rainfall Deciles 1 November 2016 to 31 October 2018
Distribution Based on Gridded Data
Australian Bureau of Meteorology

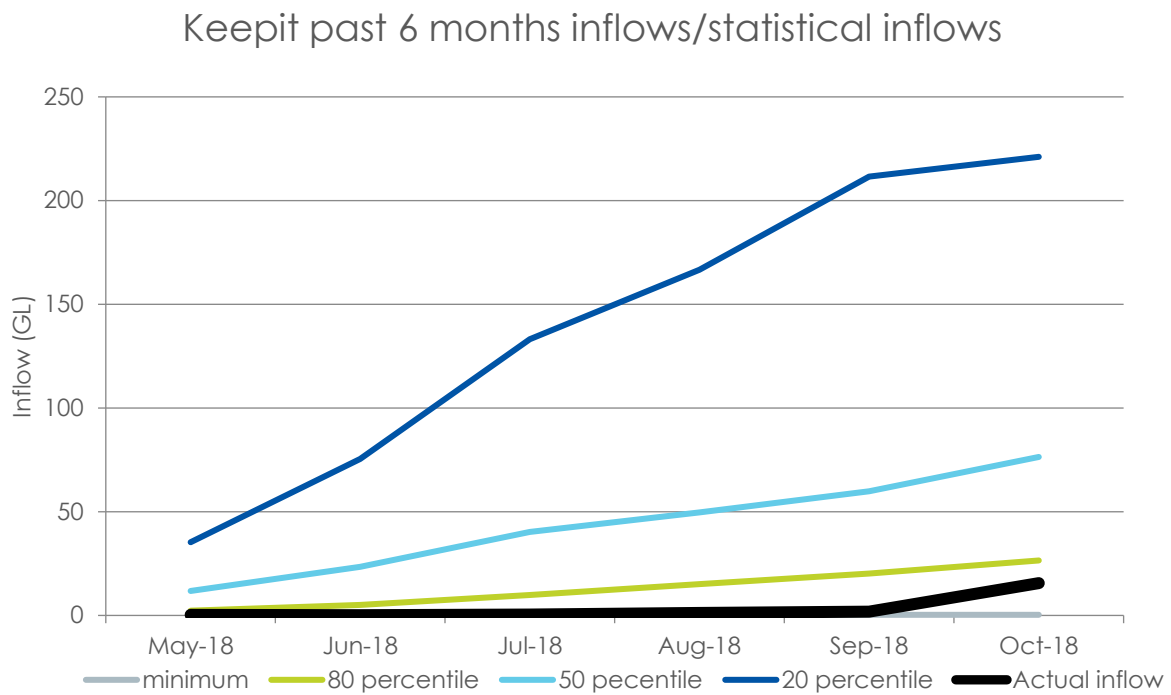


From the above figures the last 24-month total rainfall lies in the range of 600mm to 1600mm, which is below average to very much below average.

6. Inflows

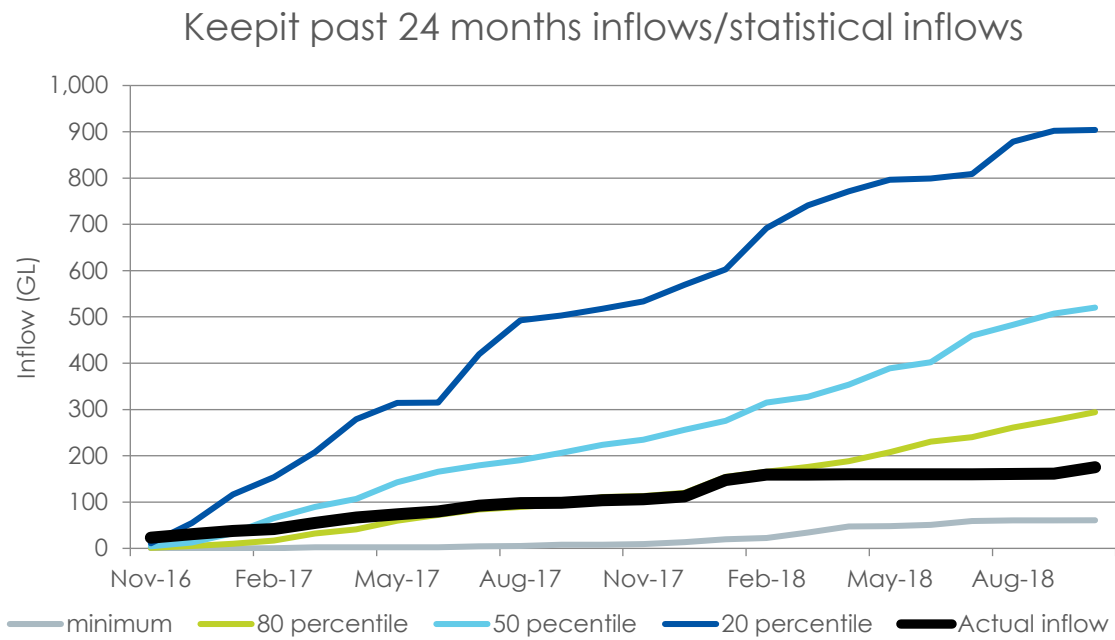
6.1 Keepit Dam inflows

6.1.1 Keepit Dam - past 6-month inflows/statistical inflows



Actual inflows for last 6 months were 15.5 GL (including 13 GL Bulk Water transfer from Split Rock Dam). Net inflow of 2.5 GL is higher than minimum observed/historic flows of 0.3 GL.

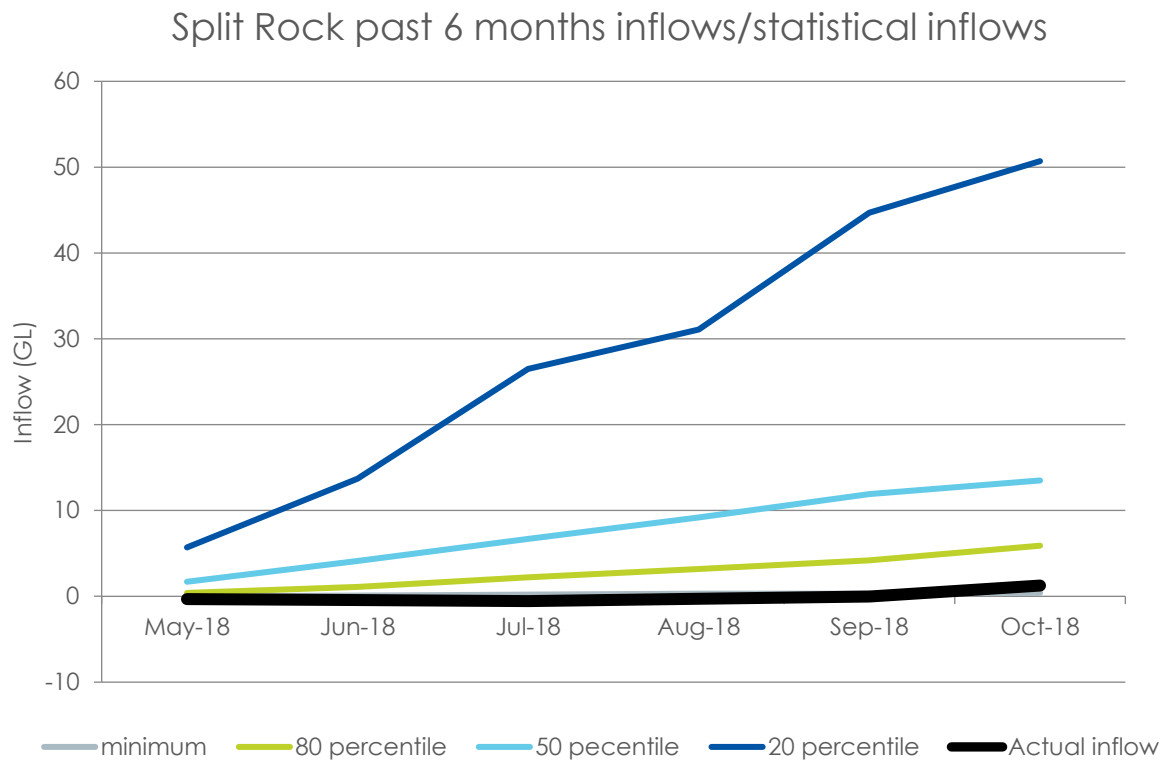
6.1.2 Keepit Dam - past 24-month inflows/statistical inflows



Actual inflows for last 24 months were 175.3 GL (including 59.6 GL Bulk Water transfer from Split Rock Dam). Net inflow of 115.7 GL is higher than minimum observed/historic flows of 60.7 GL.

6.2 Split Rock Dam inflows

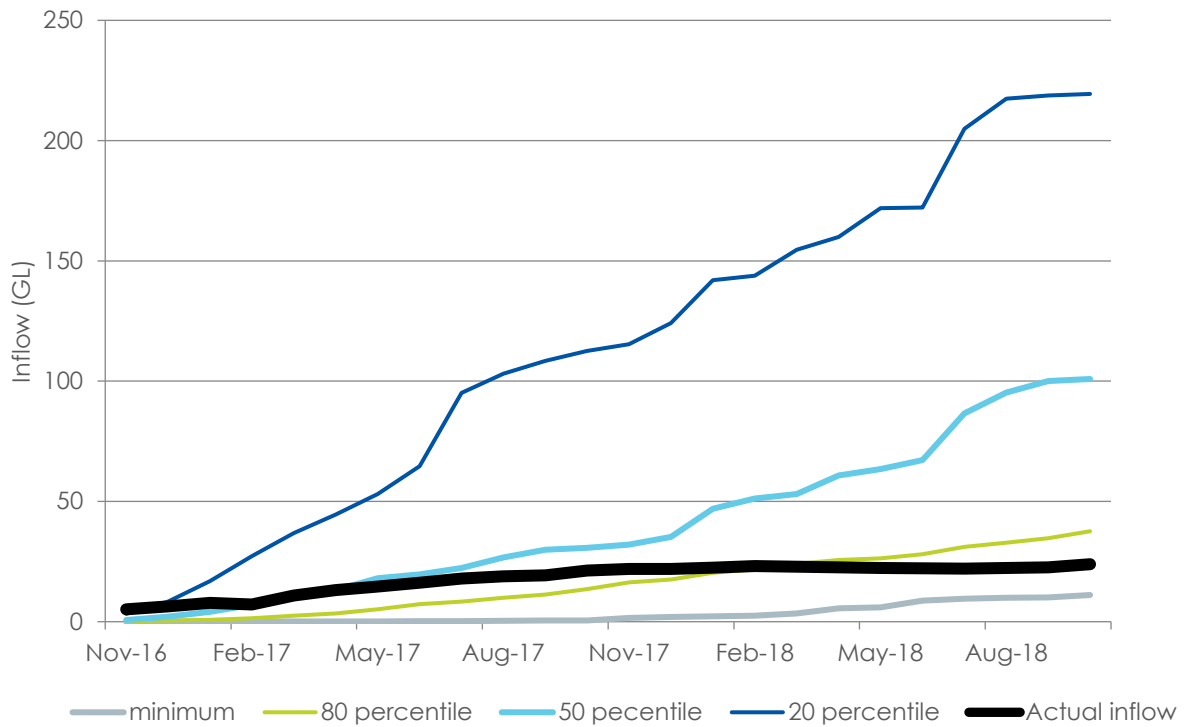
6.2.2 Split Rock Dam - past 6-month inflows/statistical inflows



Actual inflows for last 6 months were 1.25 GL which more than minimum observed/historic flows of 0.4 GL.

6.1.3 Split Rock Dam - past 24-month inflows/statistical inflows

Split Rock past 24 months inflows/statistical inflows

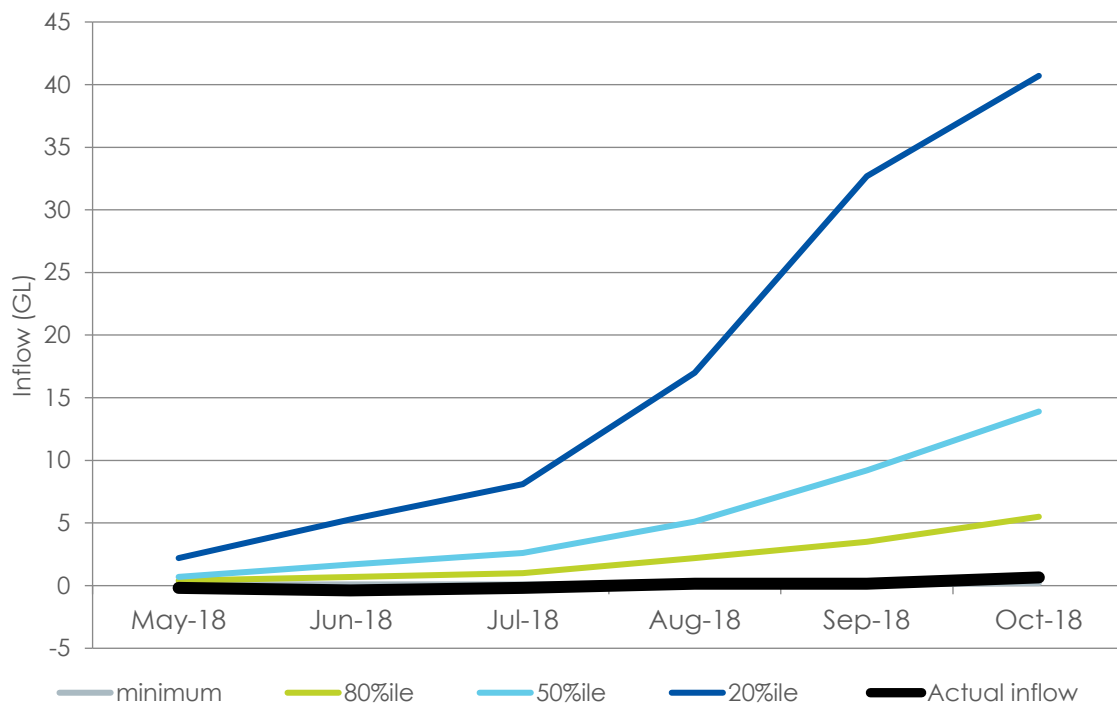


Actual inflows for last 24 months were 23.9 GL which is better than the minimum observed/historic flows of 11.1 GL and lower than the 80th percentile flows for the period of 37.6 GL.

6.3 Chaffey Dam inflows

6.1.4 Chaffey Dam - past 6-month inflows/statistical inflows

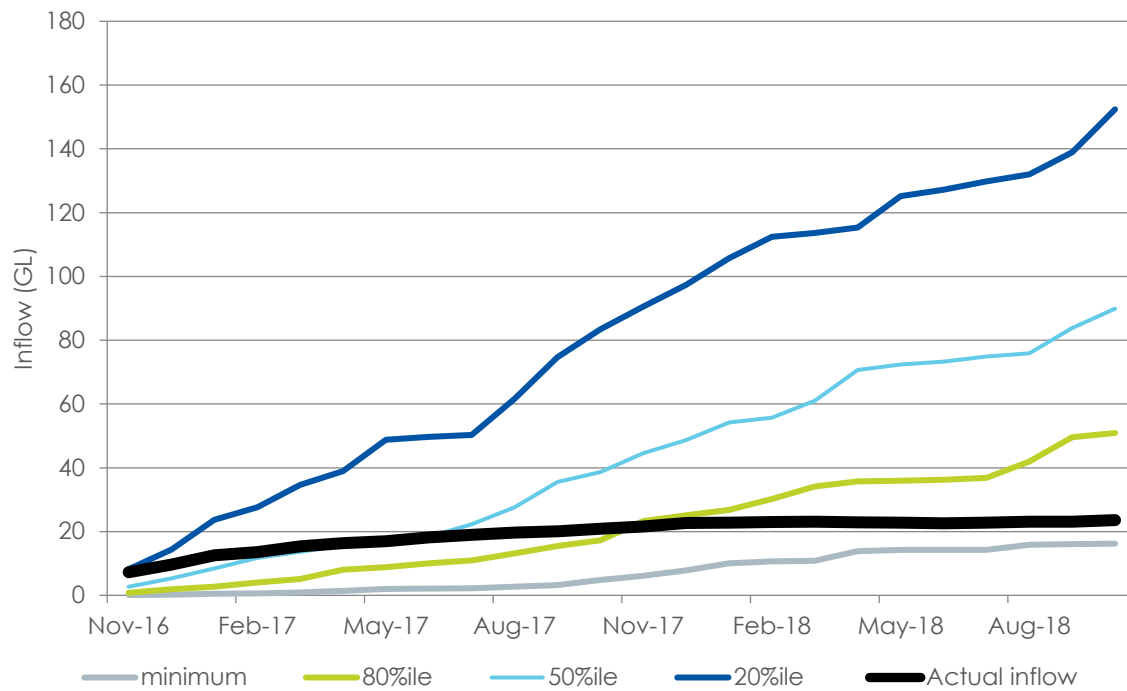
Chaffey Dam past 6 months cumulative inflow/statistical inflows



Actual inflows for last 6 months were 0.65 GL which is more than minimum observed/historic flows of 0.2 GL.

6.1.5 Chaffey Dam - past 24-month inflows/statistical inflows

Chaffey Dam past 24 months cumulative inflow/statistical inflows



Actual inflows for last 24 months were 23.6 GL which better than minimum observed/historic flows of 16.2 GL and lower than the 80th percentile flows for the period of 50.9 GL.

6.4 Downstream tributary inflows

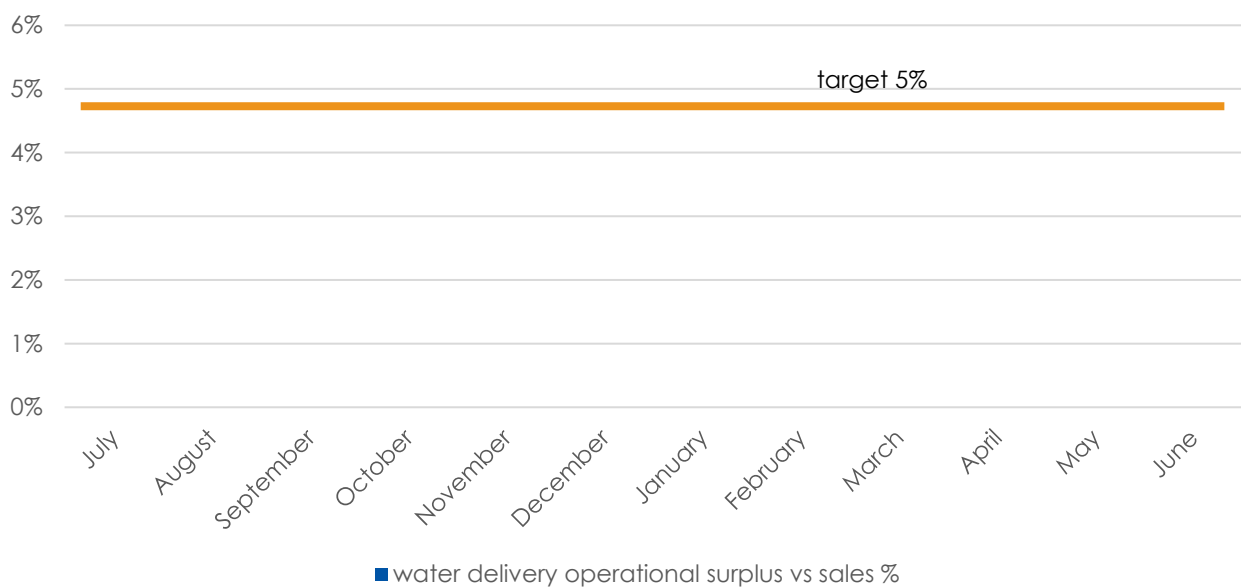
There are no significant downstream tributary inflows this water year.

7. Operational Losses

6.5 Operational losses for 2018-19

Operational losses – defined as water delivery operational surplus vs sales - for Namoi River valley are made of combined operational losses for Upper and Lower Namoi Valley and Peel Valley.

Namoi / Peel - water delivery operational surplus vs sales - 2018-19 cumulative %
(regulated licenced is included in sales)

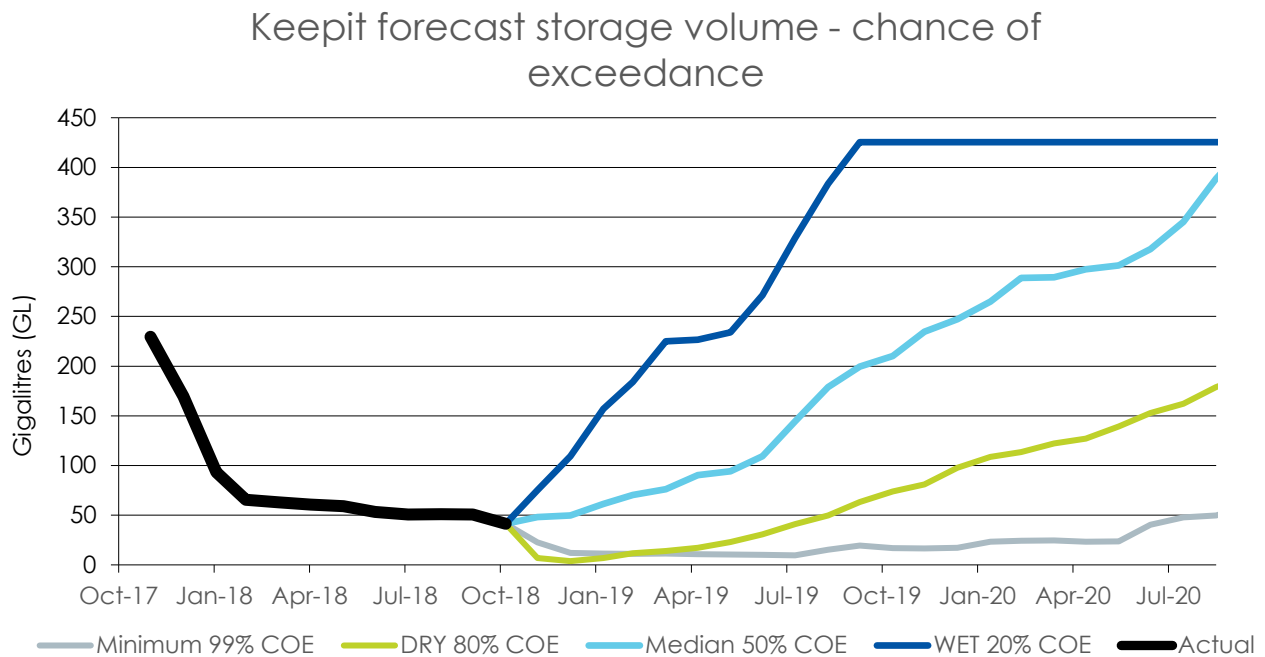


Namoi cumulative totals

Dates	Sales + environmental delivery	Operational surplus	Actual	Target
July	800	0	0%	5%
July-Aug	900	0	0%	5%
July-Sep	900	0	0%	5%
July-Oct	9,169	0	0%	5%

8. Storage forecast

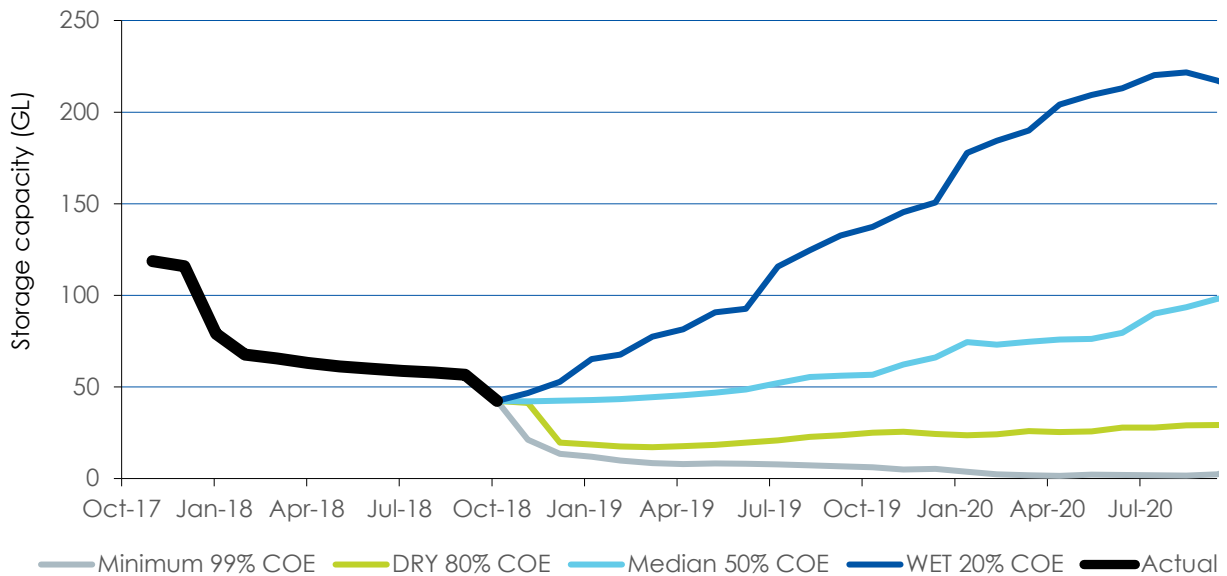
8.1 Keepit storage forecast



The above figure demonstrates the behaviour of Keepit Dam under different inflow conditions through to October 2020. For example, with 20th percentile inflows, the dam may reach 425 GL (100%) and spill before the end of August 2019.

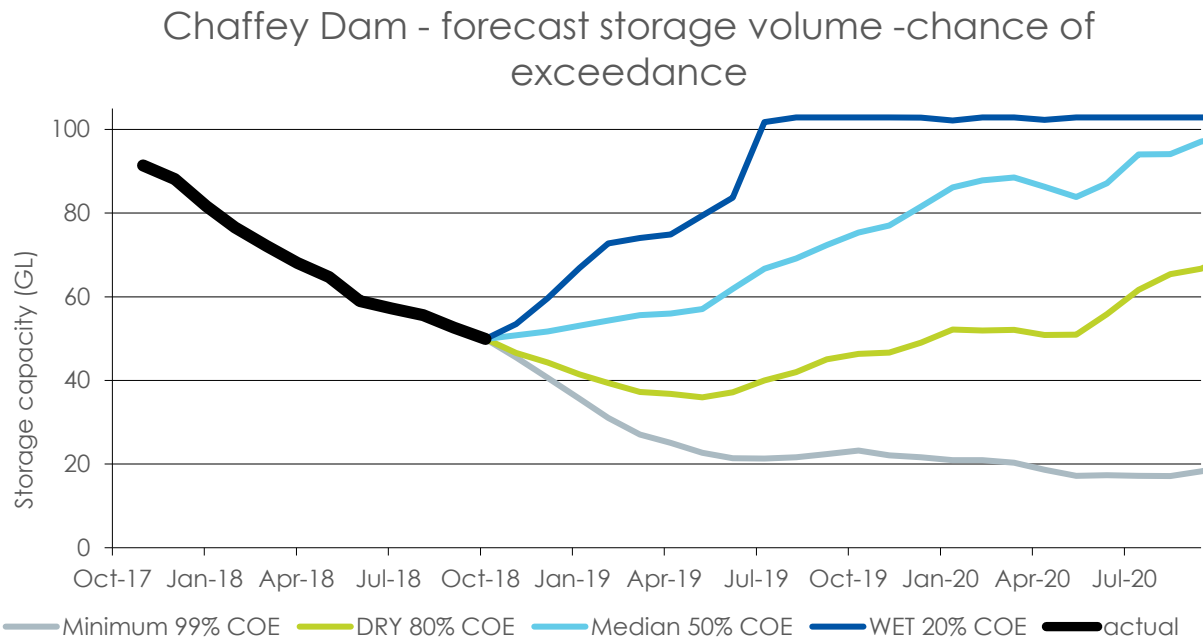
8.2 Split Rock storage forecast

Split Rock - forecast storage volume - chance of exceedance



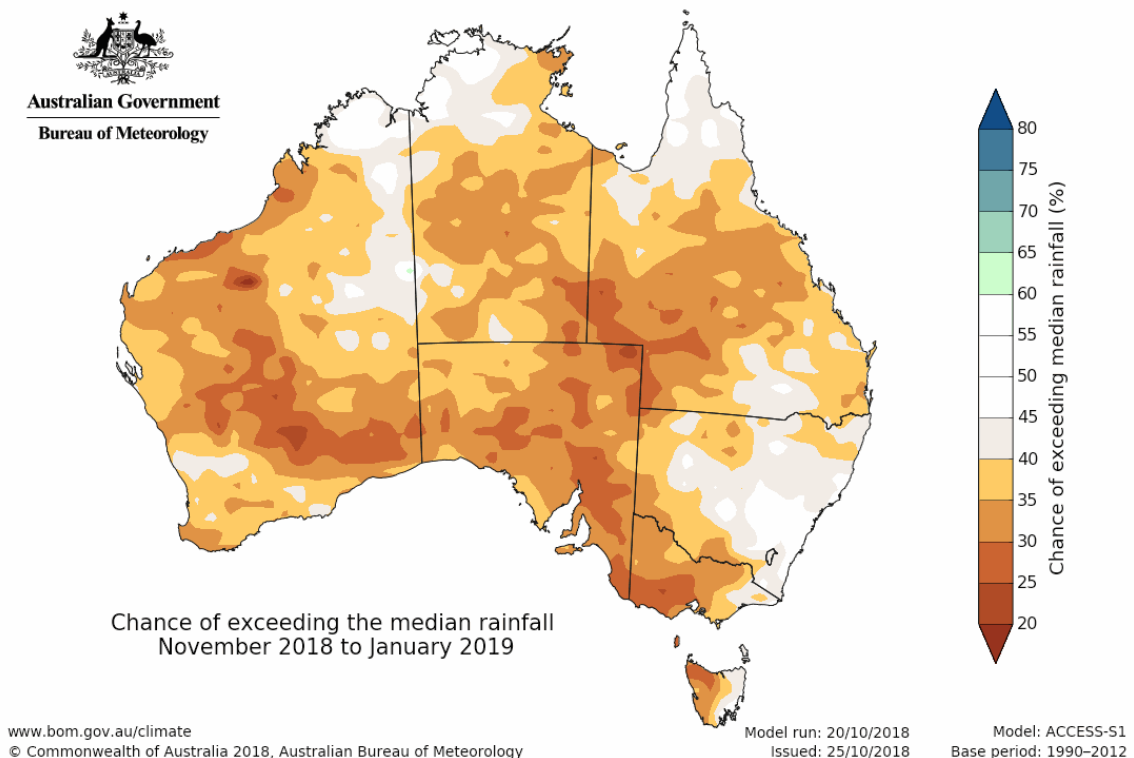
The above figure indicates the behaviour of Split Rock Dam under different inflow conditions through to October 2020. For example, with 20th percentile inflows the dam may reach 220 GL before the end of July 2020. The COE in the figure refers to the chance of exceeding these conditions in the time frame. For example, Wet 20% COE indicates that there is 20% of chance that the dam volume will be better than the projected volume, and there is 80% chance that the dam volume will be less than the projected volume.

8.3 Chaffey storage forecast



The above figure demonstrates the behaviour of Chaffey Dam under different inflow conditions through to October 2020. For example, with 20th percentile inflows, the dam may reach 102 GL (100%) and spill, by the end of August 2019.

8.4 Next 3 months scenario from the BOM forecast



9. Outage planning

Item	Time	Description
Chaffey dam (Peel)	N/A	None
Split Rock dam (Upper Namoi)	N/A	None
Keepit dam (Lower Namoi)	N/A	None
Mollee weir	N/A	None
Gunidgera weir	N/A	None
Knights weir	N/A	None
Weeta weir	N/A	None
Gunidgera regulator	N/A	None
Knights regulator	N/A	None

10. Prognosis

Possible General Security Allocations, based on different inflow scenarios are as follows:

	Extremely dry (minimum inflows)	Dry (80 th percentile inflows)	Average (50 th percentile inflows)	Wet (20 th percentile inflows)
3-month forecast to 31- Jan -19	0.0	0.0	0.0	31.0
6-month forecast to 31- Apr-19	0.0	0.0	8.4	56.8

If the dry conditions continue with 80th percentile inflows, then no AWD announcement is likely up to April 2019. If the conditions improve with 50th percentile inflows, then there is a 50% chance of an increased AWD of 8.4 % by April 2019.

More information

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