

Greater Sydney Operations Plan

March 2020

Contents

1. Highlights	3
2. Dam storage	4
2.1 Greater Sydney total system storage	4
2.2 Wingecarribee Dam storage	5
2.3 Oberon Dam storage	6
3. Water quality	7
4. Demand	8
4.1 2018/19 Demand vs five-year average	8
5. NSW rainfall	9
6. Sydney catchment area rainfall	12
7. Flow at Penrith weir	13
8. Storage forecast	14
9. Outage planning	15

1. Highlights

Heavy rainfall was recorded across all Greater Sydney catchments from Friday 7 February to Sunday 9 February resulting in large inflows. Subsequent rainfall has resulted in further inflows to storages. As at 18 February total system storage is 80.9%, an increase of 39.2% since Thursday 6 February. Shoalhaven transfers have ceased as total system storage now exceeds 80%.

As expected, with heavy rainfall and runoff from some bushfire affected catchments, inflows into the dams carried highly turbid plumes into Warragamba, Nepean and Woronora Dams. These are being managed by changing outlet screen positions to ensure that the water quality provided to downstream water filtration plants is selected from the best quality water available in the lake. At Warragamba, screens were moved as deep as possible in the water column below the turbid plume and Prospect WFP was supplied exclusively by Prospect raw water pumping station as a precautionary measure. Warragamba Dam is now back online as the primary supply to Prospect WFP.

The current BoM outlook indicates average rainfall for the next three months, which is a welcome improvement to the long term forecast following the drought. With wet catchments following the rain in February, any further rainfall over the next three months could provide valuable inflows.

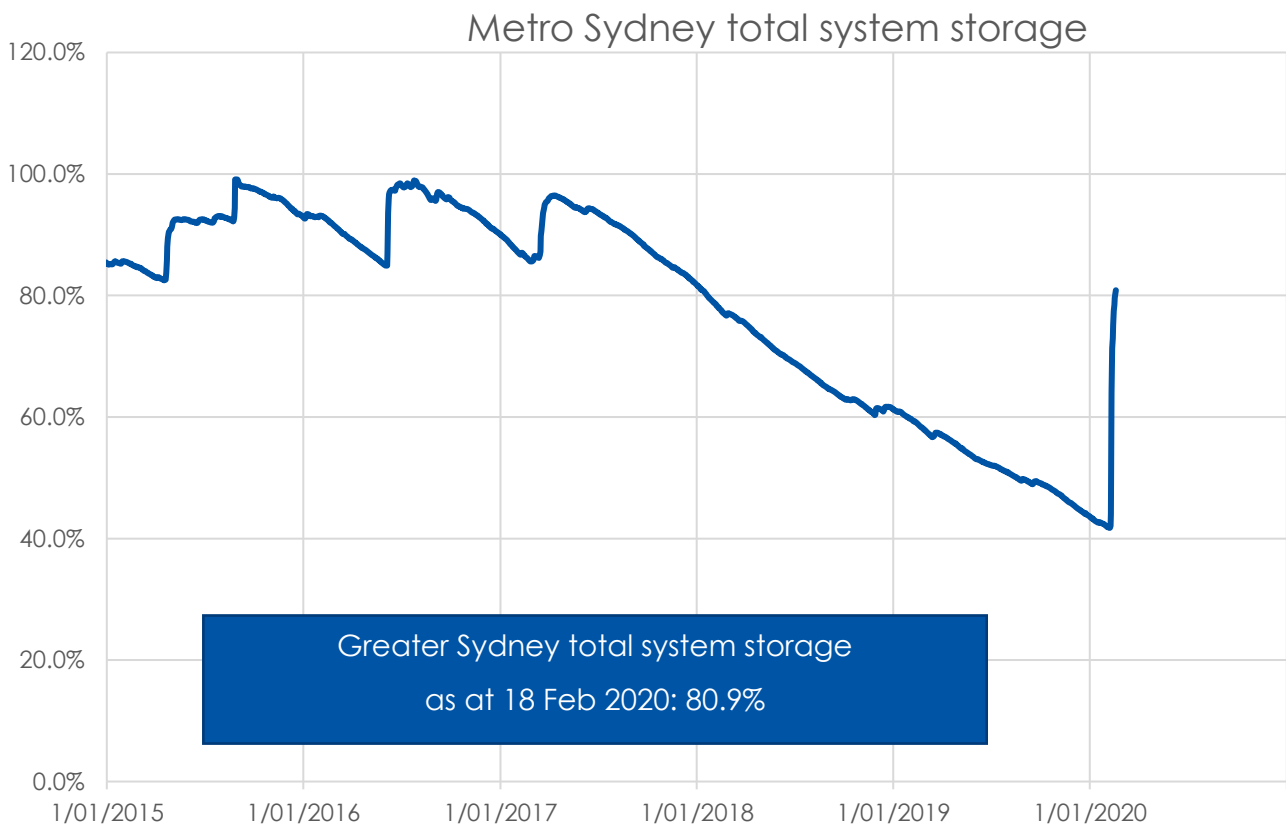
The Sydney Desalination Plant began producing water in March 2019 and is still at full capacity of approximately 250ML/D. This additional water supplied directly into Sydney's drinking water system (administered by Sydney Water Corporation) assisted WaterNSW to meet demand while Warragamba Dam was taken offline during the recent rainfall event. With the total system storage now above 70%, the desalination plant is due to be ramped down to a 'pre-drought' operational state. The current Level 2 water restrictions are expected to be relaxed from March 1.

Unfortunately, the rain in Sydney did not extend to Oberon Dam and the trigger to implement Level 4 Water Restrictions for the Fish River Water Scheme has now been reached. The Blue Mountains system received heavy rainfall in February and will not require water from the FRWS for some months.

2. Dam storage

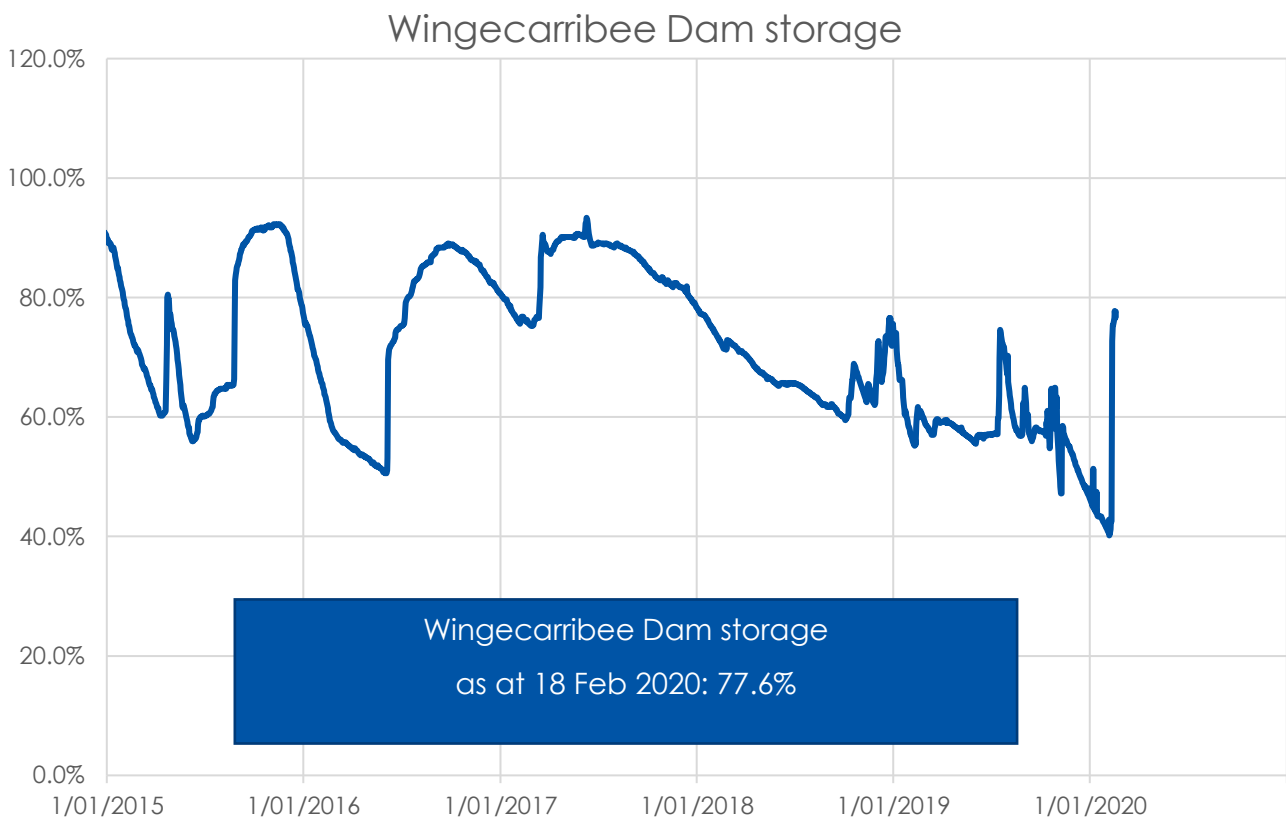
2.1 Greater Sydney total system storage

The figure below shows the Greater Sydney total system storage level, with historical perspective, comparing levels since 1 January 2015. The current total system storage as at 18 February 2020 is 80.9%.



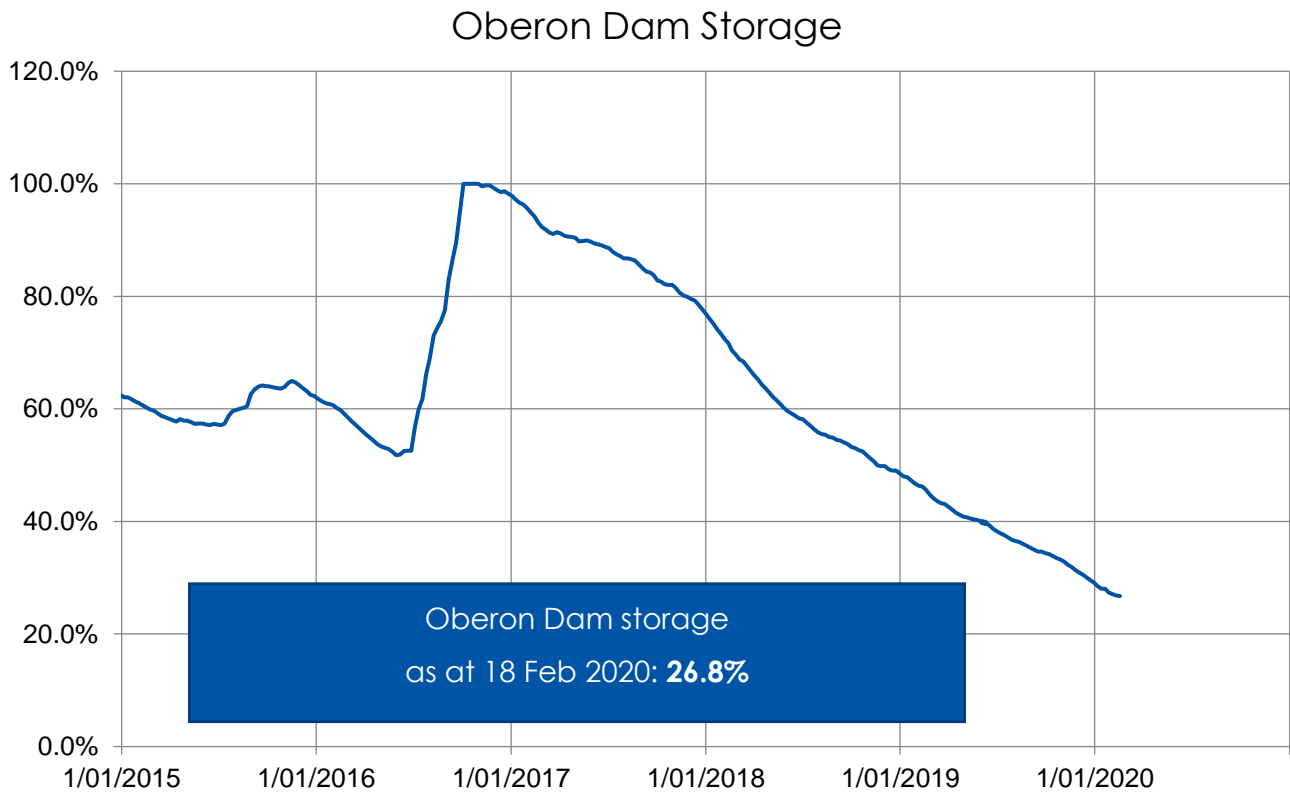
2.2 Wingecarribee Dam storage

The figure below shows the Wingecarribee Dam storage level, with historical perspective, comparing levels since 1 January 2015. The current total system storage as at 18 February 2020 is 77.6%.



2.3 Oberon Dam storage

The figure below shows the Oberon Dam storage level, with historical perspective, comparing levels since 1 January 2015. The current total system storage as at 18 February 2020 is 26.8%.



3. Water quality

Heavy rainfall was recorded across all Greater Sydney catchments from Friday 7 February to Sunday 9 February resulting in large inflows. Subsequent rainfall has resulted in further inflows to storages.

The intrusion plume at Warragamba is steady at the dam wall, with declining levels of turbidity in the upper water column. The recently opened deeper outlet is around 17m below the turbid intrusion and showing stable water quality. Currently there is no evidence of significant turbidity in the plume progressing further down the gorge, however daily profiling will continue. Warragamba and Orchard Hills WFPs continue to be supplied with good quality water from Warragamba Pipelines and plants are performing well. Prospect WFP is now being supplied exclusively from Warragamba dam with no issues.

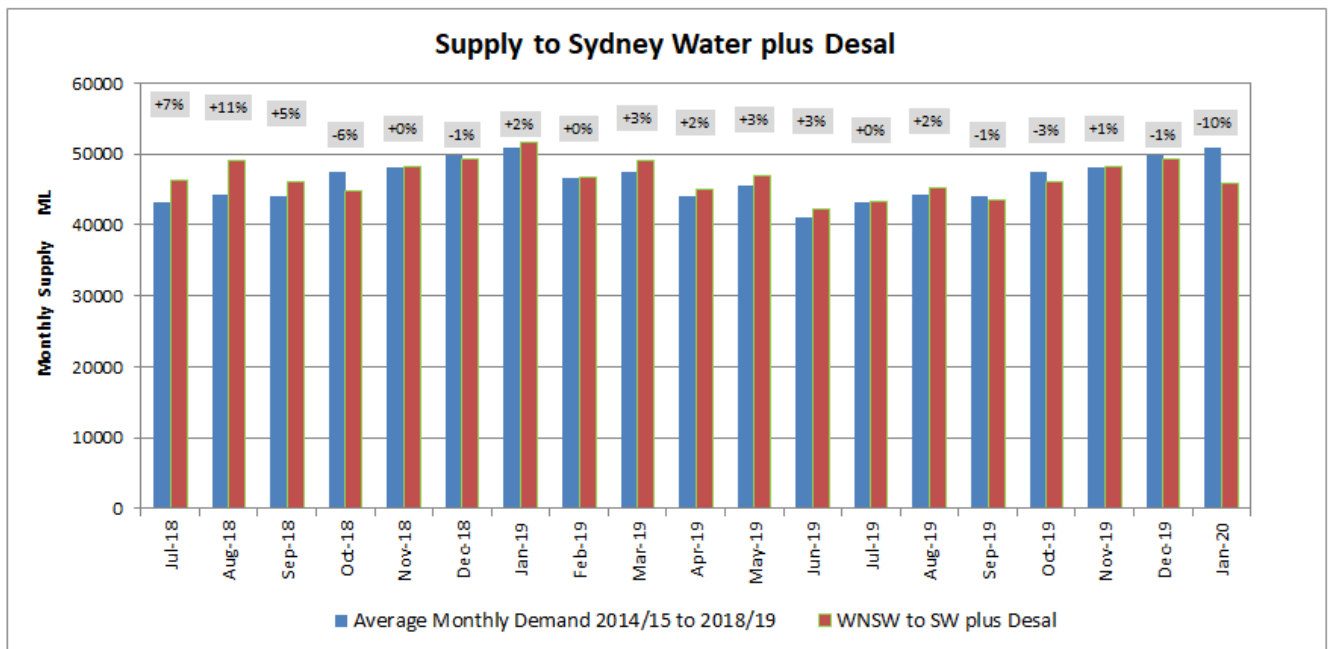
Significant amounts of work were undertaken in preparation for this event. The low storage levels and impacts of bushfires in the catchment meant that there was an elevated risk to water quality. Preventive measures such as booms and curtains, alternative supplies and offtake selection allowed WaterNSW to avoid most of the impacts of the inflows into Warragamba Dam.

Raw water quality was adversely affected due to significant inflow but is continuing to improve at the remaining dams in the metropolitan area. WFPs are performing adequately, with no impacts to drinking water supply.

4. Demand

4.1 2019/20 Demand vs five-year average

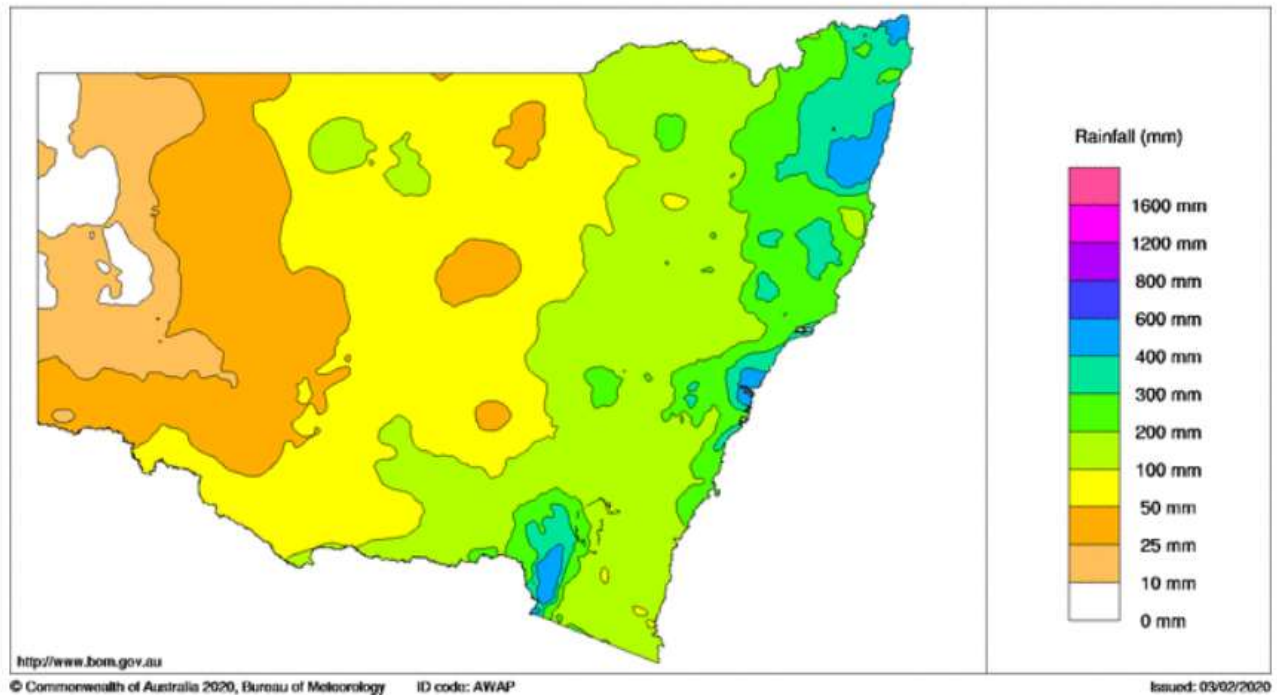
Water supplied for Sydney was slightly lower than the 5-year average for October, December and especially in January, when the impact of Level 2 restrictions can be clearly seen. Supplementary water was also being supplied by the Sydney Desalination Plant (SDP). The SDP are still at full capacity producing approximately 250ML/D. The rainfall event in February will have also reduced demand on the system. The current Level 2 water restrictions are expected to be relaxed from March 1.



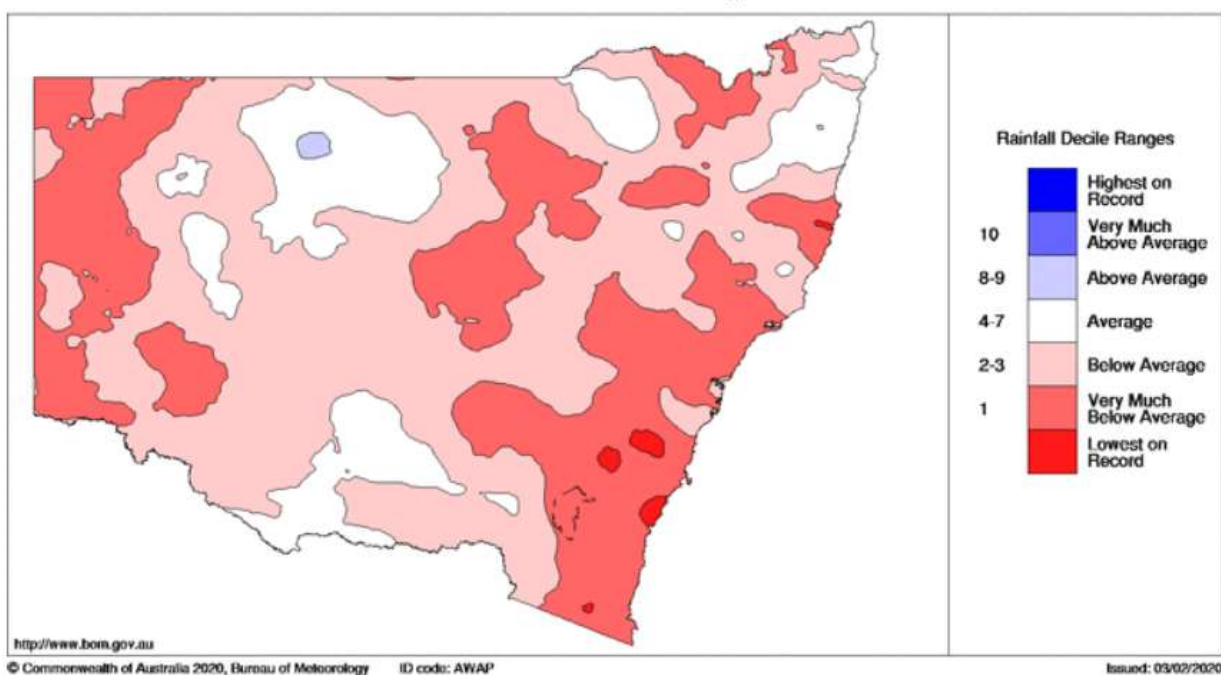
5. NSW rainfall

5.1 6-month rainfall

New South Wales Rainfall totals (mm) 1 August 2019 to 31 January 2020
Australian Bureau of Meteorology

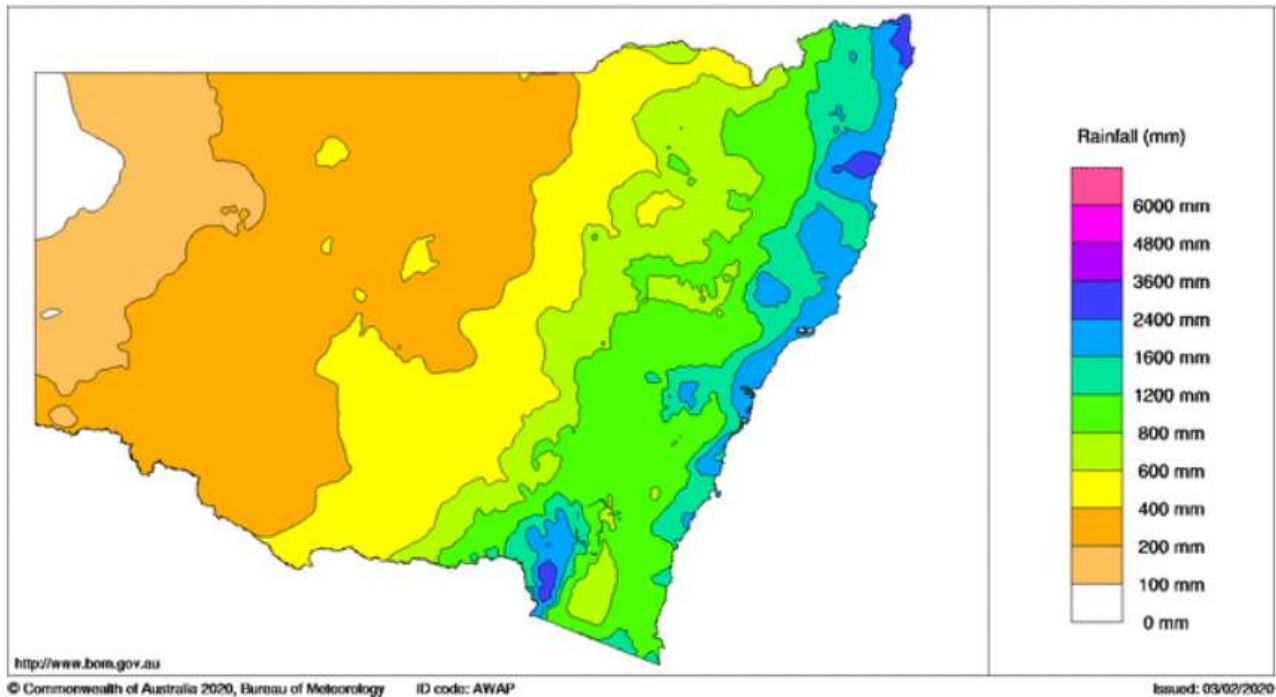


New South Wales Rainfall Deciles 1 November 2019 to 31 January 2020
Distribution Based on Gridded Data
Australian Bureau of Meteorology

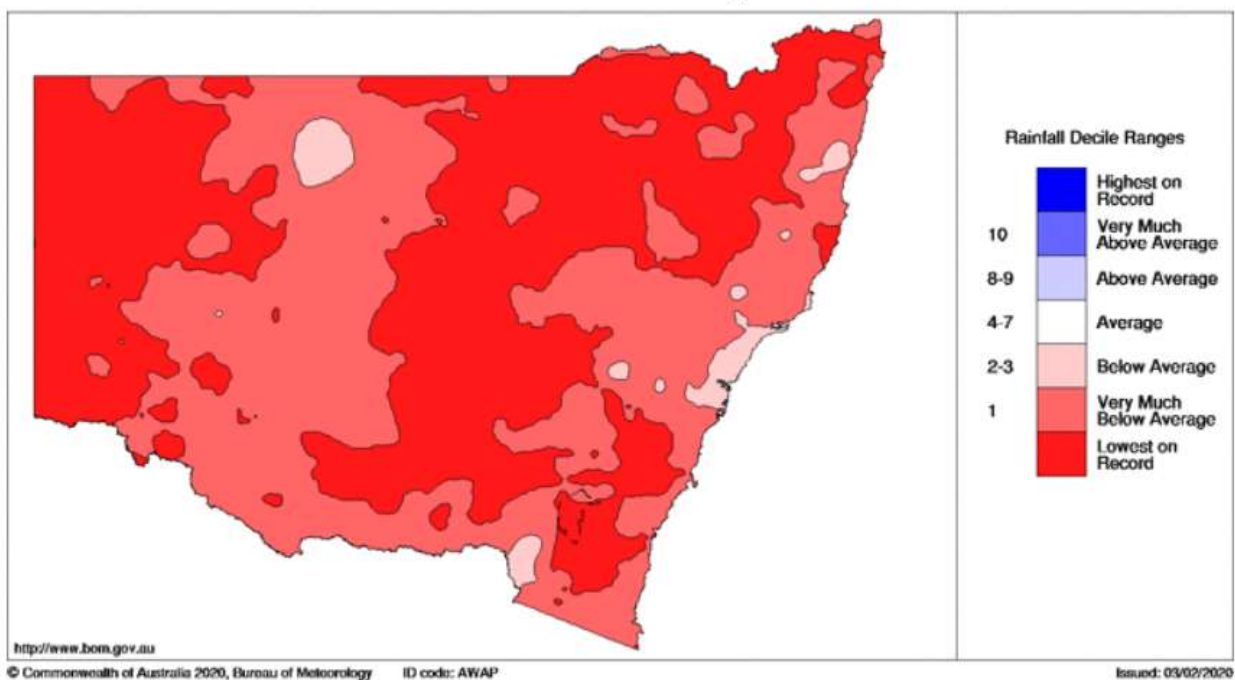


5.2 24-month rainfall

New South Wales Rainfall totals (mm) 1 February 2018 to 31 January 2020
Australian Bureau of Meteorology

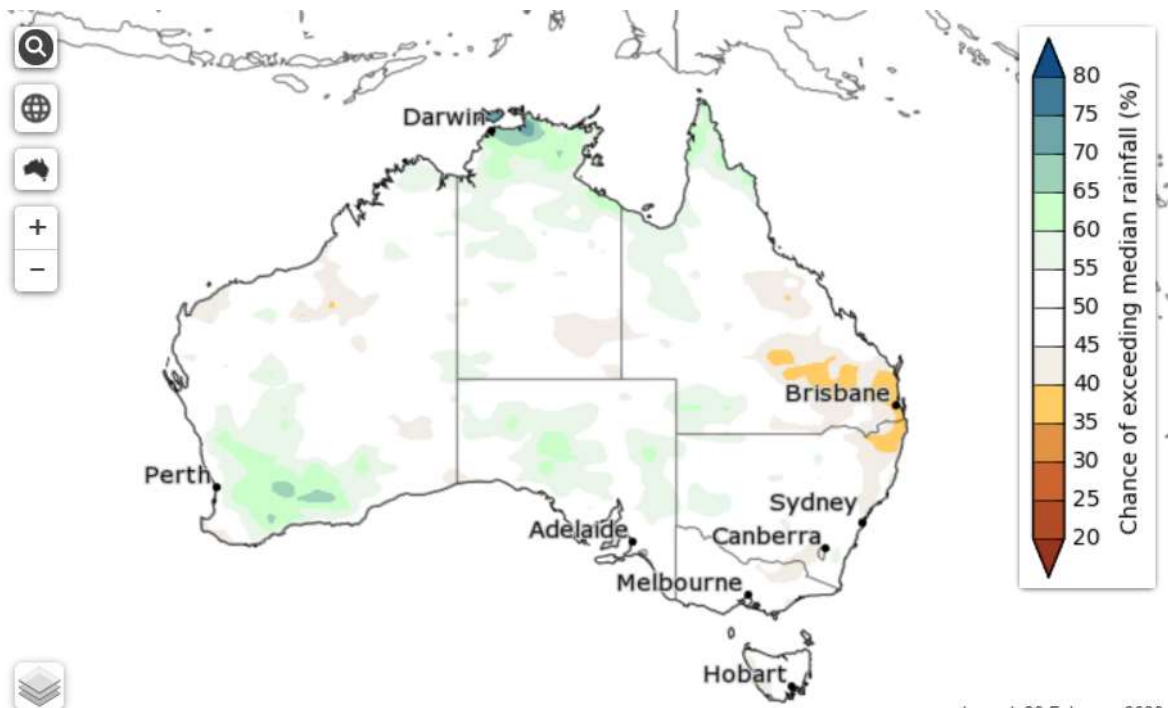


New South Wales Rainfall Deciles 1 February 2018 to 31 January 2020
Distribution Based on Gridded Data
Australian Bureau of Meteorology

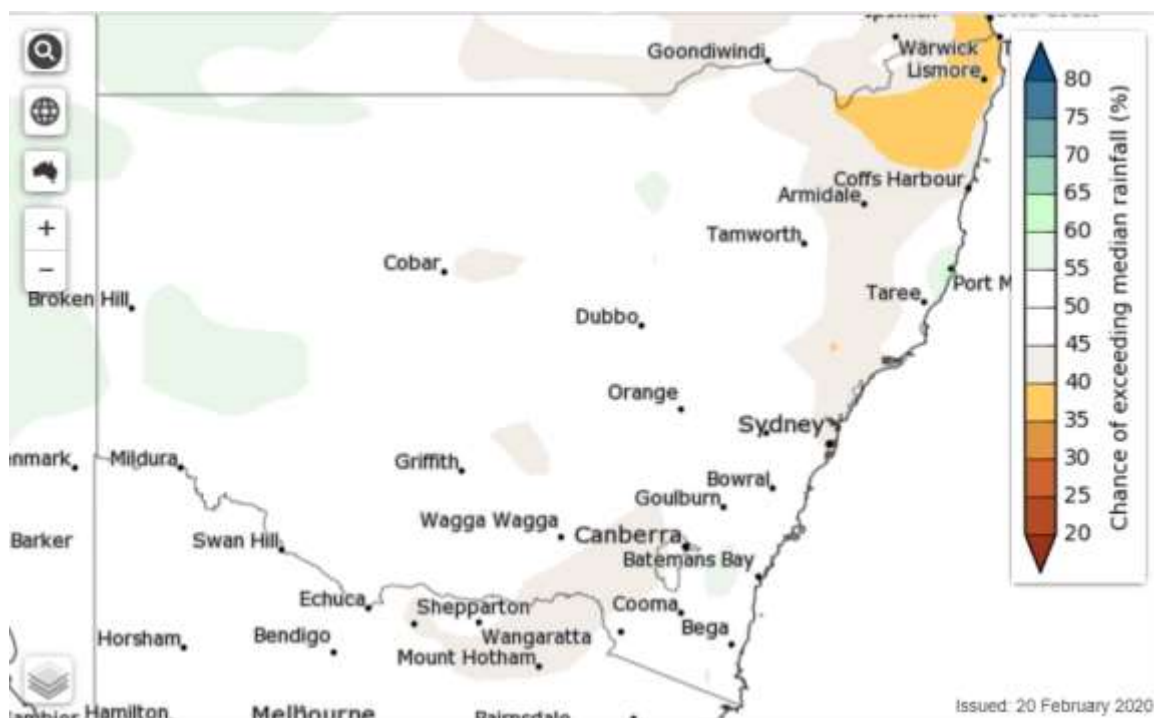


5.3 Rainfall outlook

The Bureau of Meteorology maps below show a neutral chance of exceeding median rainfall in NSW from March 2020 to May 2020.



Issued: 20 February 2020.

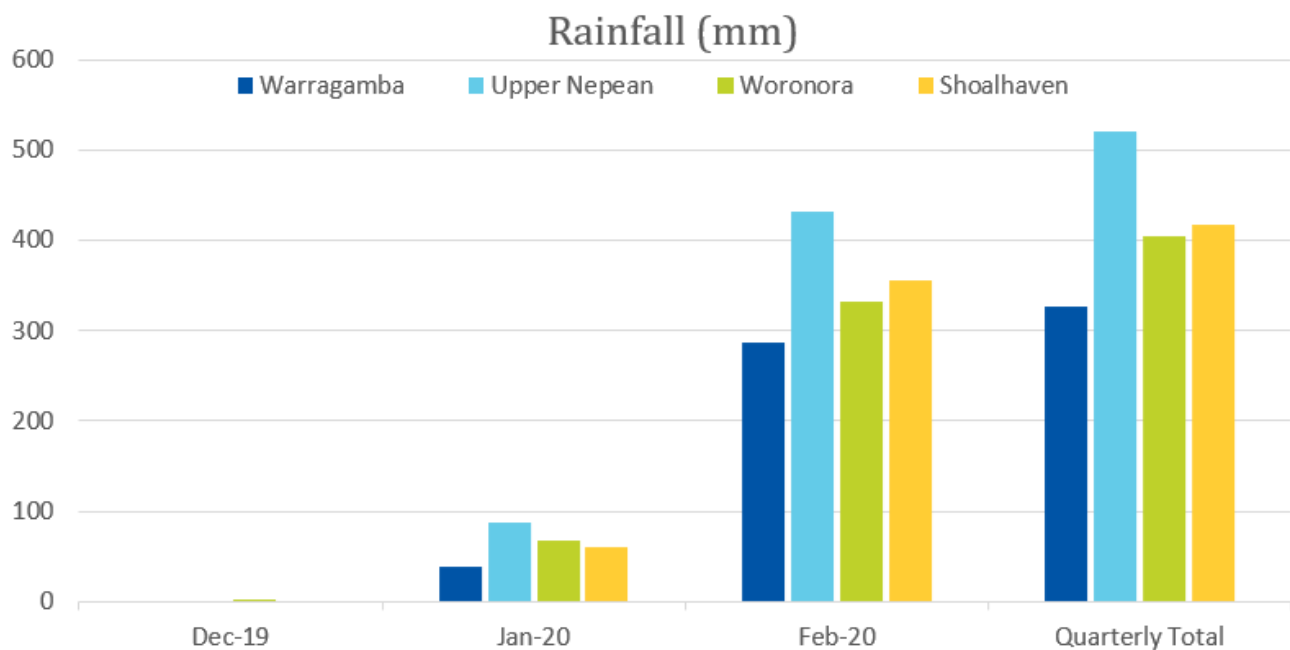


Issued: 20 February 2020.

6. Sydney catchment area rainfall

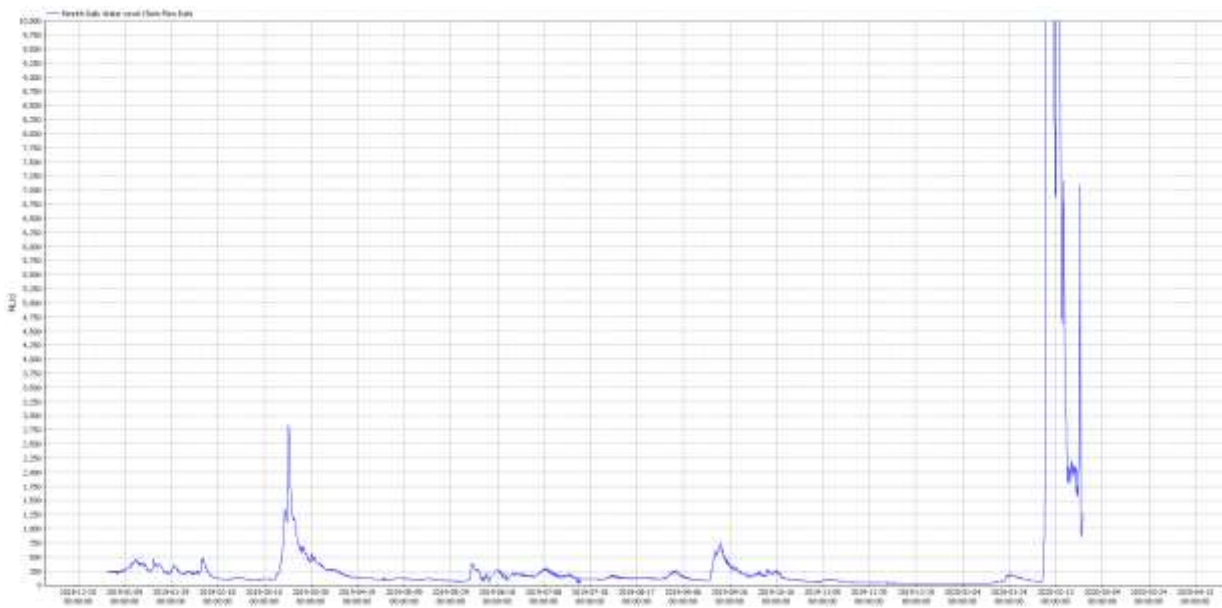
6.1 Rainfall recorded within the Sydney catchments - 01/12/19 to 18/02/20

Month	Warragamba	Upper Nepean	Woronora	Shoalhaven
Dec-19	1	1	4	2
Jan-20	39	88	68	60
Feb-20	286	432	332	356
Quarterly Total	326	521	404	417

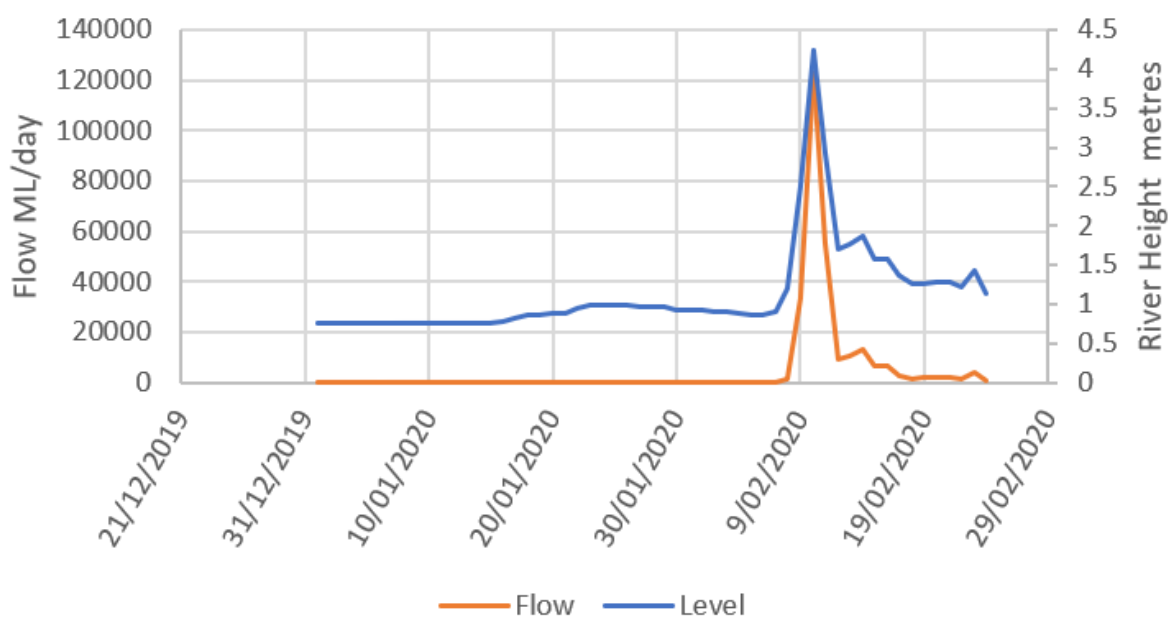


7. Flow at Penrith weir

Flows at Penrith weir for the past 12 months are shown below, with a peak of approximately 120 000 ML/D on 10 February 2020 following the major rainfall event. Flows have otherwise been low due to current drought conditions.



Penrith Weir

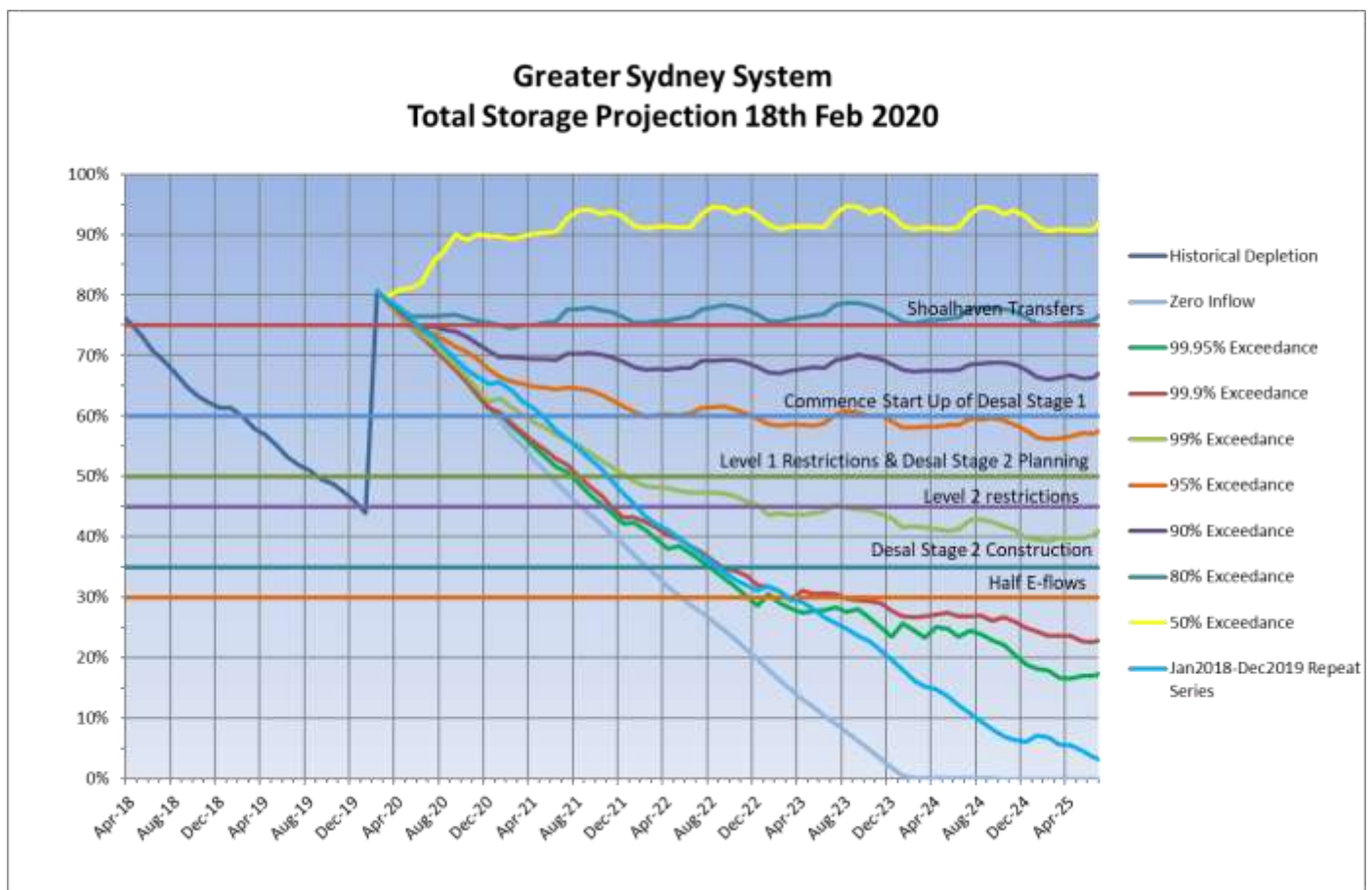


8. Storage forecast

Greater Sydney system - total system storage projections February 2020

This model assumes:

- SWC forecast demand (dry conditions) to June 2025
- Metro Water Plan (MWP) drought response mechanisms



9. Outage planning

Item	Time	Description
Upper Canal Outage	March 2020 to be re-scheduled pending system configuration	Bridge rectification works / aqueduct relining / control gates / canal cleaning and routine maintenance
Prospect RWPS	March 2020 dates TBC pending system configuration	Scheduled routine maintenance of pumps and VSDs

More information

Subscribe to our customer information (weekly water availability reports, e-newsletters, etc.) at water.nsw.gov.au/subscribe.