

15 September 2021

NSW Murray and Lower Darling

Water allocation update

There is a 14% increase to general security water allocations in the NSW Murray regulated river water source. The total cumulative allocation to general security licences in the NSW Murray is now at 44% of entitlement for this water year. Incorporating carryover, average general security water availability is now approximately 87% of entitlement. All **Lower Darling** regulated river entitlements, including **general security**, received their full allocation (100%) on 1 July 2021.

Rainfall continues to provide significant inflows into the River Murray System. The resource available to NSW has improved by approximately 335,000 megalitres (ML) since the last assessment. Airspace releases have resulted in approximately 120,000 ML of the Barmah-Millewa Environmental Water Allowance (BMEWA) spilling, with the revised balance now 230,000 ML. With the BMEWA liability now settled, general security allocation can continue to accrue.

General security water users have been exercising their uncontrolled flow access provisions taking water without-debit. This will further boost allocations as they become available. This is because the usage, coupled with private carryover already credited to accounts, causes account limits to be reached earlier and therefore allocations to go further.

It is estimated that future improvements equating to around 22% increase in general security is all that is needed to reach full general security allocations. This statement includes indicative forecast improvements to general security under various inflow conditions.

Airspace releases and tributary inflows continue to create unregulated flow conditions across the Murray Valley and provide supplementary access. The unregulated flows are also being used to meet Additional Dilution Flow requirements to South Australia, as required by the Murray Darling Basin Agreement. Supplementary access details can be found at: waterinsights.watarnsw.com.au/

Menindee Lakes System (MLS) has filled for the first time since 2012, with the current combined storage holding around 1,760,000 ML (as of 14 September 2021). Inflows from the upstream systems are expected to continue for the coming months. Under current forecasts, the MLS will be surcharged and then drawn down to full supply level (100%) during summer. Where possible, any drawdown releases will be used to meet demands. Updates can be found on the WaterNSW website at: waterinsights.watarnsw.com.au/

2021-22	High Security	General Security	Average Carryover
Murray	97%	44%	43%
Lower Darling	100%	100%#	2%

Availability of allocation on individual licences is subject to account limits as per the rules in the Water Sharing Plan

Murray storage levels (as at 14 September 2021)*

- Dartmouth Dam is 77% full – rising – holding 2,965,000 megalitres (ML).

- Hume Dam is 97% full – falling – holding 2,910,000 ML.
- Lake Victoria is 97% full – stable – holding 655,000 ML.
- Menindee Lakes System is 101% full – rising – holding 1,760,000 ML.

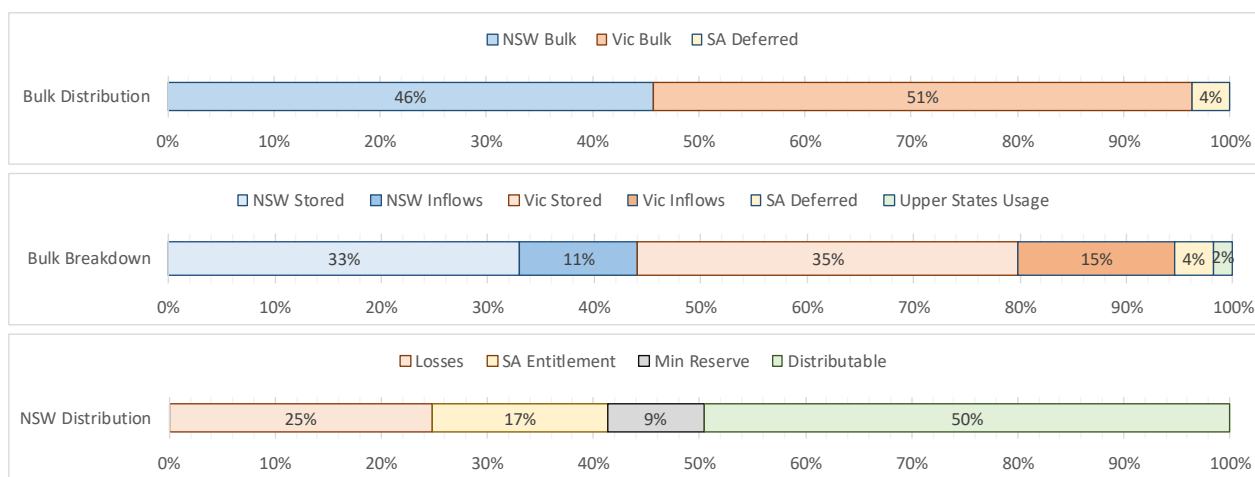
* The NSW share of this water is approximately 35%, 49%, 42% and 39% for these storages respectively, or 42% in total (averaged across all storages).

State sharing of the Murray resource

The bulk accounts assessment indicates that around 9,960 gigalitres (GL) of total shared Murray resource is available in the extreme dry (99th percentile) case. The NSW share of this resource is approximately 4,580 GL based on the rules in the Murray-Darling Basin (MDB) Agreement. After removing commitments required under the MDB Agreement, including losses in operating the River Murray System, South Australia’s entitlement flow and the minimum reserve, the assessment results in a volume of **Murray resource for NSW to allocate of 2,270 GL**.

The bulk resource assessed by the Murray Darling Basin Authority (MDBA) includes supplementary and uncontrolled flow diversions in the NSW usage. Therefore, the assessed share of the Murray resource must be reduced by this unregulated use to account for water used from unregulated water sources. The unregulated water usage does not adversely impact regulated allocations. In this assessment, the notional resource of 2,300 GL has been adjusted down to an actual resource of 2,270 GL.

Distribution of Murray resources



The breakdown of the Murray resources is provided in the graphs above. It is provided on a trial basis to provide NSW Murray water users with more information on the distribution of resources within the Murray regulated system. The breakdown is based on the 99% inflow scenario, which is the scenario used by NSW for its allocations and water sharing framework. The NSW government’s acceptable risk, on behalf of all water users including towns and the environment, is given in the water sharing plan. NSW is required to work to the minimum inflow scenario prior to the commencement of the plan (2004). The MDBA’s 99% scenario closely aligns with the minimum pre-Millennium drought scenario. Therefore, NSW distributes the volume provided by the MDBA’s 99% scenario to satisfy the water sharing plan.

It is important to note that other jurisdictions make allocations based on their own water sharing framework and risk appetite. Therefore this 99% (extreme dry) scenario should not be used to infer allocation announcements by other jurisdictions.

Additional notes for the graphs are provided below:

- **Bulk Distribution Graph** – distribution of bulk resource into NSW’s bulk share, Victorian bulk share and South Australia’s deferred storage. **Of the total resource available in the Murray under the 99% scenario, NSW is entitled to approximately 46% of it.**
- **Bulk Breakdown** – breakdown of distribution of bulk resource, as per the Bulk Distribution Graph, by state and resource source (i.e. stored water vs future inflow). **Of the 46% of the total bulk resource which NSW is entitled to (under the Bulk Distribution Graph), approximately 33% is sourced from stored water and 11% is sourced from future inflows, with the remainder coming from usage to date.**
 - Future inflow includes minimum inflows into major storages, expected tributary inflows and un-delivered IVT balance.
 - As the distributable resource is comprised of usage to date, usage in NSW and Victoria contributes to the total resource made available to date. Note, other jurisdictions may report on remaining account balances, which does not require the incorporation of usage to date. NSW reports on total water made available to date, which must include water which has been used to date.
- **NSW Distribution** – breakdown of the resource which NSW is entitled to (i.e. the 46% component of the bulk resource under the Bulk Distribution Graph).
 - 25% of the resource NSW is entitled to is required for losses.
 - 17% of the resource NSW is entitled to is required to meet commitments to South Australia (dilution and non-dilution) as per the Murray Darling Basin Agreement.
 - 9% of the resource NSW is entitled to is required to meet minimum reserve requirements as per the Murray Darling Basin Agreement.
 - Leaving **50% of the resource NSW is entitled to for distribution amongst its water users as per the Water Sharing Plan. Distributable resource includes usage to date.**

Climatic outlook

The Bureau of Meteorology’s seasonal outlook for October to December indicates that rainfall is likely to be above average across the catchment. Temperatures are likely to be near or warmer than average.

The Bureau’s El Niño-Southern Oscillation is neutral. Models indicate that negative Indian Ocean Dipole (IOD) conditions have developed and may persist until summer. Negative IOD conditions increase the chances of above average rainfall in winter-spring.

For further details at: www.bom.gov.au/climate/outlooks/#/overview/summary

Trade

In the Murray, trade across the Barmah choke remains restricted to ‘**no net trade downstream**’. Downstream trade opens to the extent of the volume of any upstream trade. Water users are advised to monitor the Murray-Darling Basin Authority (MDBA) website (www.mdba.gov.au) for information about the trade balance and status of trade across the Barmah choke.

Temporary trade between the Lower Darling and the Murray is now open and will likely remain open until the system next falls below 480 GL. Trade within the Lower Darling regulated river water source remains open.

The normal operating range for the Murrumbidgee IVT account is between 0 GL and 100 GL. Trade **out** of the Murrumbidgee is **closed**, while trade **into** the Murrumbidgee Valley is **open** (as of 14 September 2021). Water users should monitor the WaterNSW website (www.waternsw.com.au) for daily information about the IVT account balance, the status of trade, and other information. The IVT account balance at the end of the previous water year has carried forward into this water year.

Next announcement

The next water allocation statement will be published on **Friday 1 October 2021**. It will be a short statement, updating any improvements in resource and allocations.

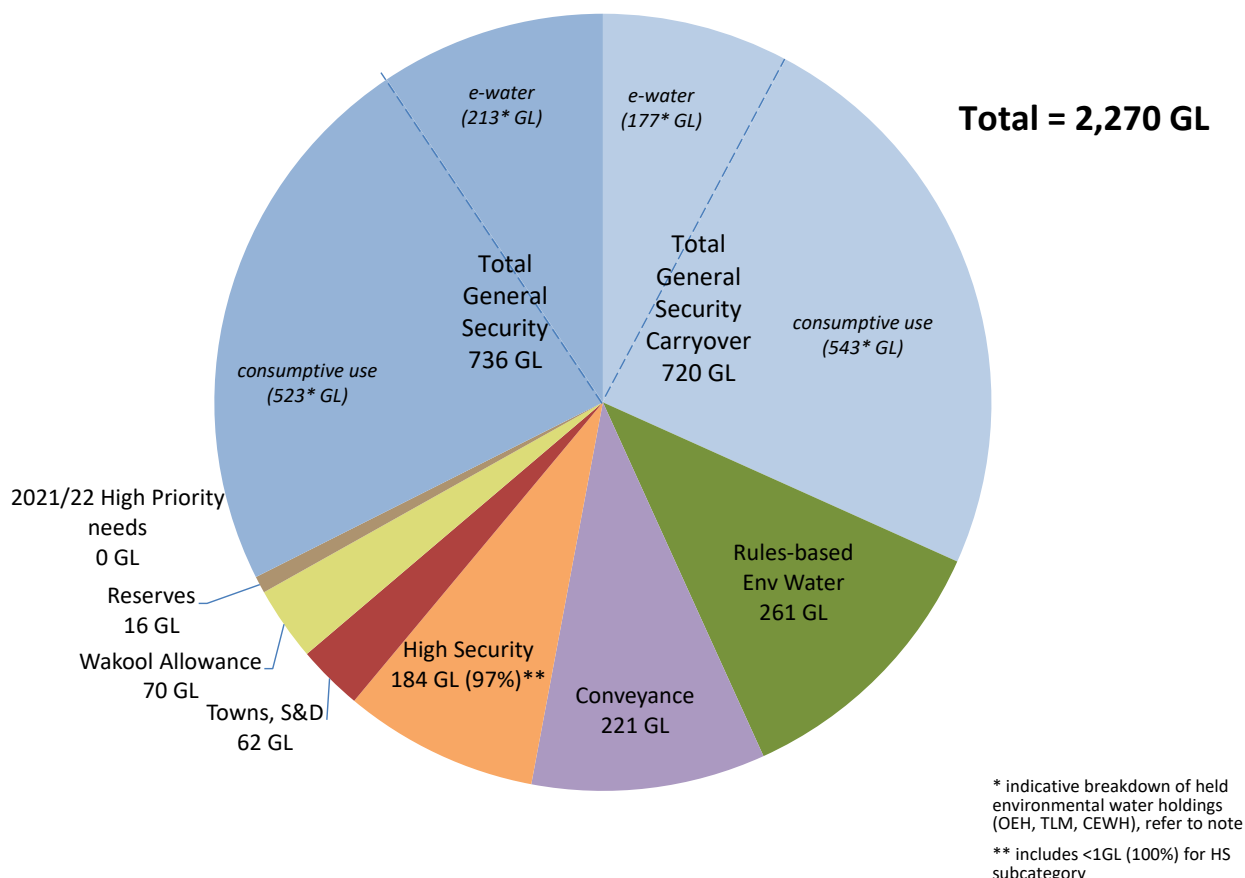
The next comprehensive statement, including likely improvements in general security allocations under various inflow scenarios, will be published on Friday 15 October 2021.

NSW Murray resource assessment data sheet

Resource Distribution* (15 September) for 2021-22	Volume (GL)
Total Available Resource ⁽¹⁾	2,270
<i>less</i>	
Carryover ^{(2), (8)}	720
Rules based Environmental Water ⁽³⁾	261
Towns, Stock, Domestic ⁽⁴⁾	62 (100%)
Announced High Security subcategory ⁽⁴⁾	<1 (100%)
Announced High Security ⁽⁴⁾	184 (97%)
Conveyance ⁽⁵⁾	221 (67%)
Wakool Allowance ⁽⁶⁾	70
Reserves ⁽⁷⁾	16
Announced General Security ⁽⁸⁾	736 (44%)
Year 2 (2022-23) high priority needs ⁽⁹⁾	0

*See notes below

NSW Murray resource distribution 2021-22 – 15 September 2021

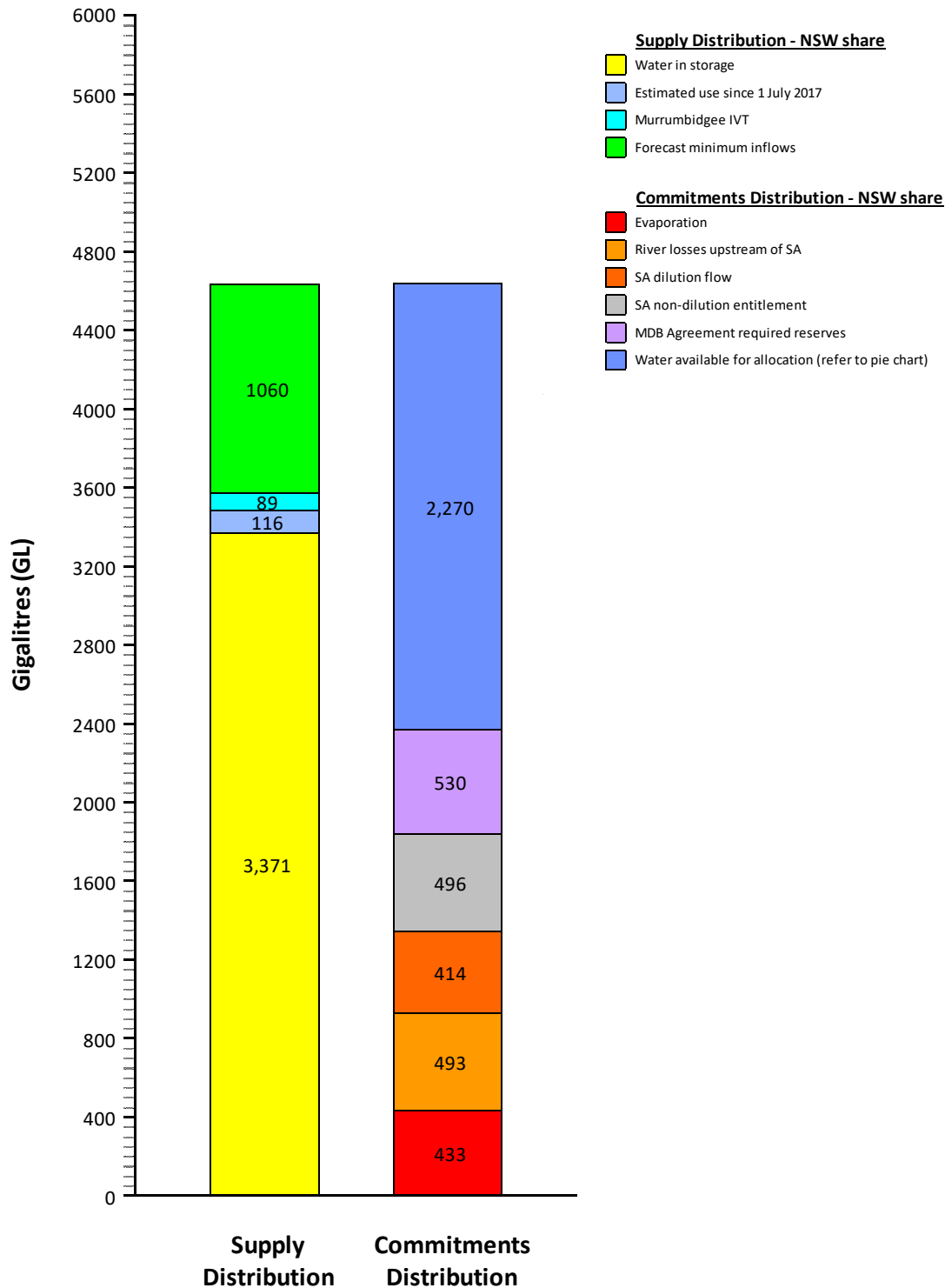


Data sheet notes

- (1) Total available resource - NSW's state share of active storage volume (Hume, Dartmouth, Menindee and Lake Victoria) as assessed and accounted for under the Murray-Darling Basin Agreement at the time of the assessment plus any usable flows in transit plus assumed (99%ile) inflows for the rest of the year plus Snowy Hydro's assured Required Annual Release (RAR) (including any flex (pre-release) from the prior year), as well as estimated usage to date. Snowy Hydro's M1 releases to date for this water year (2021-22) is estimated to be about 425 GL. NSW is not in Special Accounting with South Australia (SA) as of 15 September 2021. The details of Special Accounting can be found in the MDB Agreement clauses 123-129. Special Accounting is triggered when forecasts indicate that NSW will have an end of year reserve of less than 1,250 GL.
- (2) Carryover – NSW Murray General Security water users can carryover a maximum account balance of 50% of their entitlement into the following water year. The account limit is 110% of entitlement, meaning that account credits from allocation and/or carryover cannot exceed 110% of entitlement in any water year. The limit does not include allocation trade.
- (3) Primarily rules-based planned environmental water (PEW) – water required to be set aside to provide for riverine environments, as per the Water Sharing Plan and other inter-jurisdictional agreements. In the NSW Murray this includes the Murray Additional Allowance (MAA) (about 6 GL) and the Barmah-Millewa Allowance (B-MA) (230 GL – fully paid back). It also includes River Murray Increased Flows (RMIF) in Hume, accrued as part of the Snowy Water Initiative (currently 25 GL). The total commitments to B-MA and RMIF will decrease over the water year as they are released from Hume for use. Excludes 'licence-based' environmental water, known as held environmental water (HEW).
- (4) The *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016* has subcategories of High Security licences in the Murray Water Source. High Security subcategory licences under *Part 7 Division 2 Clause 46(2)* that are present in the Murray include community and education, research, and town water supply. At the commencement of each water year, these licences are to receive 100% allocation, while remaining High Security licences are to receive 97% allocation. For the purposes of this water allocation statement, the High Security town water supply allocation volume has been grouped as "Towns, S&D".

- (5) Conveyance entitlement – a category of access licence originally issued to Irrigation Corporations to facilitate delivery of water through their channel systems. Allocation to this category is prescribed in the Water Sharing Plan and is a function of current High and General Security allocation.
- (6) Wakool Allowance – a conveyance volume necessary for NSW to operate the Edward-Wakool system. Typically up to 70 GL.
- (7) Reserves – required primarily under statutory plans, up to 61GL; set aside for critical human needs in accordance with Clause 11.03 of the Basin Plan.
- (8) Held environmental water (HEW) – water administered by environmental water holders is reported here, with the associated portions of general security allocation and carryover also identified in the above pie chart. This reporting of held environmental water is limited to only NSW entitlements, reporting of credits to accounts (not usage or trade), and estimated to be 213 GL of GS, 177 GL of GS carryover, 24 GL of HS, 34 GL of conveyance allocation. These entitlements are held and/or managed either singly or jointly by various environmental holder groups, including the NSW Department of Planning, Industry and Environment (DPIE), The Living Murray (TLM) and the Commonwealth Environmental Water Holder (CEWH). Details on environmental holdings can be found on individual agency websites.
- (9) 2022-2023 high priority needs on 1 July 2022 - volume set aside to cover high priority needs on 1 July 2022, for 'Year 2'.

NSW Murray water balance – 15 September 2021



Water balance notes:

Supply and Commitments Distribution – The volumes in the categories shown are only those relating to NSW’s share of the resource, at the end of the preceding month. The categories include the following:

- Water in storage: Volumes in the dams at the end of the previous month. (Excludes water in storage unavailable to NSW under the water sharing arrangements of the Murray Darling Basin Agreement).
- Estimated use since 1 July: Estimated NSW usage to-date, reconciled periodically with hydrographic updates (meter

- readings).
- **Forecast inflows:** NSW's share of forecast inflows into the River Murray System based on assumed extremely dry future conditions (includes Snowy Hydro's guaranteed inflows for the water year, and Murrumbidgee end of system flows).
 - **IVT:** Total tributary system water bought by Murray system users that is yet to be delivered.
 - **Evaporation:** Water set aside for evaporation for the remainder of the year. This reduces as the year progresses.
 - **River losses upstream of SA:** Water budgeted for transmission losses from the River Murray system upstream of the South Australian border for the remainder of the year. Generally reduces as the water year progresses.
 - **SA non-dilution entitlement:** Water to supply South Australia's entitlement flow, as required under the Murray-Darling Basin (MDB) Agreement. Generally reduces as water year progresses.
 - **SA dilution flow:** Water to provide South Australia's dilution and conveyance component of flow, as required under the MDB Agreement. Reduces as the year progresses, unless Additional Dilution Flow (ADF) is triggered.
 - **MDB Agreement required reserves:** Includes conveyance reserve and minimum reserve to be set aside for use in the next water year, as required by the MDB Agreement in clause 102D and 103, respectively.
 - **Water available for allocation:** NSW's bulk share of the resource that can be assigned to NSW Murray entitlement holders based on the Water Sharing Plan. Allocation of this volume is provided in the above table and pie chart.

Comparison with 2020-21

Item	Mid-September 2020 (GL)	Mid-September 2021 (GL)	Comments
NSW Share of total resources	1,165	2,270	Wet conditions boosting resources in 2020/21.
less			
Carryover	350	720	Higher carryover in 21/22 due to higher allocations in 20/21.
Environmental	7	261	230 GL of the BMEWA has been paid back in 2021.
Towns, Stock, Domestic	68	62	Approximately 6 GL of temporary critical conveyance licences are no longer required in 2021/22 due to improved conditions.
Conveyance	184	221	Commensurate with general security allocations.
Wakool Loss	70	70	
High Security	184	184	
General Security	251	736	44% allocation in 2021/22 vs 15% in 2020/21.
Reserves	51	16	Lower reserves required in 2021/22.

Chances of improvement

Each resource assessment assumes that current river flows will reduce to extreme dry (99% AEP) conditions. This is a safe assumption, but water users can use the following inflow scenarios to plan for potential future allocation announcements. The chances of improved general security allocations, based on a repeat of historical inflows, are provided in the following table under a variety of conditions. The forecast is based on all available historical data, which is appropriate given the seasonal outlook, and gives a better outlook than using just the driest years on record

(dry tercile). To be clear, the analysis considers historical data and does not explicitly consider the likely wet conditions in the seasonal rainfall forecast.

It is important to note that these estimates are indicative improvements only and are not guaranteed allocations. Estimates may change based on weather conditions, water management decisions and river operations. This means water users should use this information with caution and at their own risk.

Forecast general security allocations (%)

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

Repeat of historical inflow conditions	1 Nov 2021	1 Feb 2022
99 chances in 100 (extreme) (99%)	44%	44%
9 chances in 10 (very dry) (90%)	44%	44%
3 chances in 4 (dry) (75%)	44%	57%
1 chance in 2 (mean) (50%)	51%	100%
1 chance in 4 (wet) (25%)	59%	100%

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

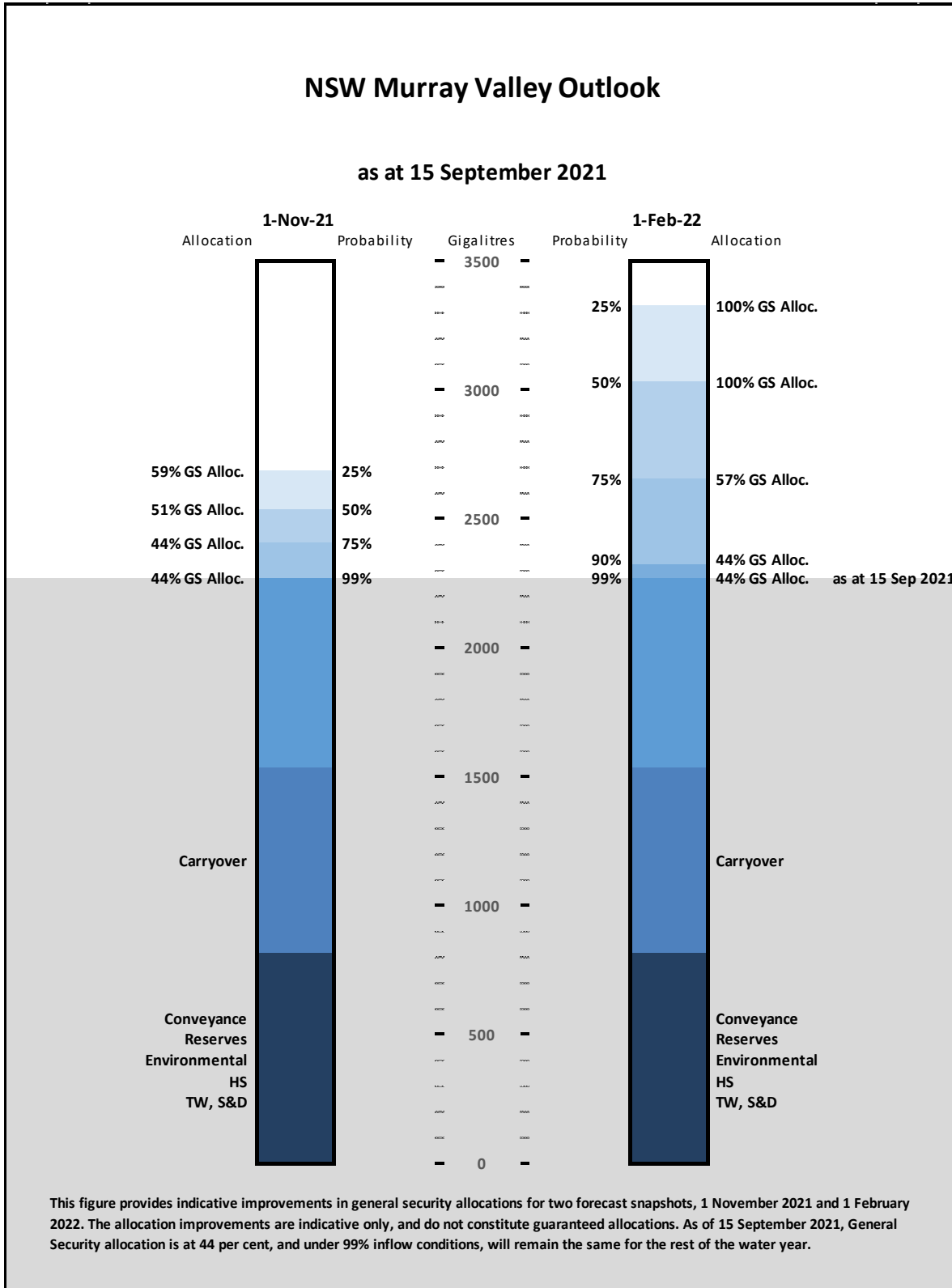
Note 2: Statistical values reflect NSW share of inflows, not whole of system inflows.

Note 3: Forecast assumes 43% general security carryover.

Note 4: Forecast incorporates Murrumbidgee regulated end of system flows.

Note 5: Physical spills limit resource improvements as inflows are unable to be captured. Actual resource improvements will be highly dependent on the pattern of inflows and demands experienced over the coming months. With storages full, and future inflows at high risk of partial spill, there is high uncertainty in the numbers provided above.

Note 6: In the NSW Murray valley, general security (GS) account limit is 110% and carryover limit is 50%. Once allocations reach 60%, accounts start spilling, aiding in rapid allocation increases, resulting in 100% GS announcement for 50% and 75% inflow conditions by 1 February 2022.



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