

Relationship between the water resource plan and water sharing plan

Water resource plans (WRPs) are being prepared to meet the requirements of Chapter 10 of the Basin Plan 2012, made under the Commonwealth Water Act 2007.

Water sharing plans (WSPs), made under the NSW *Water Management Act 2000* (WM Act), will remain the primary mechanism for defining water-sharing arrangements in NSW and therefore a fundamental component of each WRP.

This fact sheet explores the relationship between the draft *Water Sharing Plan for the Macquarie–Castlereagh Alluvial Groundwater Sources 2019* and the draft *Macquarie Alluvium Water Resource Plan*.

Changes to existing WSPs will be made to accommodate relevant Basin Plan requirements. More information on proposed changes to the groundwater WSP of the Macquarie–Castlereagh alluvium is provided in the *Macquarie–Castlereagh Groundwater Water Sharing Plan Changes* fact sheet available from industry.nsw.gov.au/draft-macquarie-castlereagh-alluvium-wrp

Common management areas and extraction limits

The current water sharing plan for the Lower Macquarie groundwater sources is due to expire on 1 July 2019. It is being replaced in parallel with the water resource planning process. Its scope is also being expanded to include provisions relating to the Bell alluvial, Cudgegong alluvial, Talbragar alluvial and Upper Macquarie alluvial groundwater sources that are currently included in the *Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012* and the Castlereagh alluvial groundwater source currently included in the *Water Sharing Plan for the Castlereagh Unregulated and Alluvial Water Sources 2011*. The new plan will be the *Water Sharing Plan for the Macquarie–Castlereagh Alluvial Groundwater Sources 2019*.

The new Macquarie–Castlereagh alluvial water sharing plan area will align with the Macquarie–Castlereagh alluvium water resource plan area under the *Basin Plan 2012*. The Bell alluvial, Castlereagh alluvial, Cudgegong alluvial, Talbragar alluvial and Upper Macquarie alluvial groundwater sources will align with the sustainable diversion limit resource units in the *Basin Plan 2012*. The Lower Macquarie zones 1, 2 and 6 groundwater sources are alluvial groundwater sources, and combined, these align with the *Basin Plan 2012* Lower Macquarie alluvium SDL resource unit. Zones 3, 4 and 5 Lower Macquarie groundwater sources target the sandstones of the Great Artesian Basin and are not considered Basin water resources under the *Basin Plan 2012*.

The extraction limits established in the Basin Plan, known as ‘sustainable diversion limits’ generally equate to the long-term average annual extraction limits specified in the draft *Water Sharing Plan for the Macquarie–Castlereagh Alluvial Groundwater Sources 2019*. The exception to this is in the Lower Macquarie, where a single sustainable diversion limit applies, being the sum of the long-term average annual extraction limits for the Lower Macquarie Zones 1, 2 and 6 groundwater sources.

Details of these fundamental relationships between key elements of Basin Plan and the draft *Water Sharing Plan for the Macquarie–Castlereagh Alluvial Groundwater Sources 2019* are shown in Table 1.

Table 1. Macquarie–Castlereagh alluvium—relationship between the water resource plan and water sharing plan

Specified in Schedule 4 of the Basin Plan		Specified in Part 4 of the <i>Water Sharing Plan for the Macquarie–Castlereagh Alluvial Groundwater Sources 2019</i>	
SDL resource unit	SDL	Groundwater source	LTAEL
Bell Valley alluvium	3.29 GL/yr 3.29 GL/yr (groundwater) 0.01 GL/yr (basic rights)	Bell alluvium	3,299 ML/yr
Castlereagh alluvium	0.62 GL/yr 0.54 GL/yr (groundwater) 0.08 GL/yr (basic rights)	Castlereagh alluvium	621 ML/yr
Coolaburragundy-Talbragar Alluvium	3.47 GL/yr 3.40 GL/yr (groundwater) 0.07 GL/yr (basic rights)	Talbragar alluvium	3,473 ML/yr
Cudgegong alluvium	2.53 GL/yr 2.50 GL/yr (groundwater) 0.03 GL/yr (basic rights)	Cudgegong alluvium	2,533 ML/yr
Lower Macquarie alluvium	52.7* GL/yr 52.4 GL/yr (groundwater) 0.3 GL/yr (basic rights)	Lower Macquarie Zone 1	21,807 ML/yr
		Lower Macquarie Zone 2	22,761 ML/yr
		Lower Macquarie Zone 6	8,202 ML/yr
		Total Lower Macquarie alluvium	52,770 ML/yr
Not Basin groundwater sources		Lower Macquarie Zone 3	9,752 ML/yr
		Lower Macquarie Zone 4	5,326 ML/yr
		Lower Macquarie Zone 5	2,871 ML/yr
		Total Lower Macquarie sandstone	17,949 ML/yr
Upper Macquarie alluvium	17.9 GL/yr 17.9 GL/yr (groundwater) 0.3 GL/yr (basic rights)	Upper Macquarie alluvium	17,935 ML/yr

* 70.7 GL minus the limit under the *Water Sharing Plan for the Lower Macquarie Groundwater sources 2003* of NSW that applies to water taken from the Jurassic sandstone of the Great Artesian Basin.

Differences in managing compliance with extraction limits

The Basin Plan requires compliance with the five individual sustainable diversion limits. This is to be done by calculating the maximum volume of water permitted to be taken in a water year SDL resource unit, known as ‘annual permitted take’, and comparing it to the volume actually taken in that year. The difference is then recorded on a ‘register of take’ as a debit or a credit.

Annual permitted take is calculated retrospectively at the end of a water year, after assessing the volume of water that was allowed to be extracted in that water year under the water resource plan rules. It does not directly determine how much water a licence holder can take in any water year. It forms the benchmark against which total annual consumptive use from a sustainable diversion limit resource unit will be compared.

This is for the sole purpose of assessing compliance with the longer-term sustainable diversion limit over time. Until 2028, the amount taken is deemed non-compliant with a sustainable diversion limit when the cumulative balance is in debit by an amount that is equal to 20% (or more) of the sustainable diversion limits for that groundwater resource unit.

For the Bell alluvial, Castlereagh alluvial, Talbragar alluvial and Lower Macquarie alluvial groundwater sources, the annual permitted take for each is equal to the sustainable diversion limit, which, for all but the Lower Macquarie alluvial groundwater sources, is equal to the long-term average annual extraction limit.

For the Lower Macquarie zones 1, 2 and 6 groundwater sources there is a single annual permitted take equal to the sum of the long-term average annual extraction limits for these groundwater sources.

The annual permitted take for the Cudgegong alluvial and Upper Macquarie alluvial groundwater sources varies each water year based on the deviation of actual annual rainfall from the average annual rainfall measured at Mudgee and Dubbo respectively. The annual permitted take volume will not be more than 120% or less than 80% of the sustainable diversion limit. In both groundwater sources, the sustainable diversion limit equates to the long-term average annual extraction limit. This climate-adjusted annual permitted take recognises that in dry years, extraction will generally exceed the sustainable diversion limit, and in wet years it will be less.

Water sharing plans also require management to the long-term average annual extraction limits for each groundwater source, and specify that this be done by comparing the long-term average annual extraction limit to the average annual volume of water extracted over the proceeding five years.

Non-compliance with the long-term average annual extraction limit occurs when this calculated average annual extraction exceeds the long-term average annual extraction limit by either 5% in the Castlereagh alluvium and Lower Macquarie groundwater sources, or 10% in the Bell alluvial, Cudgegong alluvial, Talbragar alluvial and Upper Macquarie groundwater sources.

If non-compliance with a sustainable diversion limit or a long-term average annual extraction limit has occurred under either of the two assessment processes described above, future extraction from the groundwater source is to be restricted to achieve compliance by one or both of the following methods:

- restricting the water allocations that can be taken, assigned under section 71T of the WM Act, or otherwise debited or withdrawn, from a water allocation account in the following water year
- announcing available water determinations of less than 100% (or 1 ML/unit share) for lower-priority access licences in the following year.

The extent of any extraction restrictions will be that necessary to return average annual extractions in the relevant groundwater source to the long-term average annual extraction limit specified in the WSP for the groundwater source, or to meet the requirements of Division 3 of Part 4 of Chapter 6 of the Basin Plan.

More information

See the following fact sheets on the NSW Department of Industry's website, industry.nsw.gov.au/water-resource-plan-consultation:

- *Water resource plans in NSW*
- *Groundwater available water determinations*
- *Groundwater-dependent ecosystems*
- *Compliance with sustainable diversion limits.*