



## Reductions to Water Allocations – Tintinara and Tolmer Management Areas (Tintinara Coonalpyn Prescribed Wells Area)

### How much water can we extract?

The National Water Initiative, of which South Australia is a signatory, requires that water allocations be reduced to an environmentally sustainable level. In over-allocated resources where a considerable percentage of allocation is not being extracted (pumped), reductions to allocation may prove ineffective in reducing signs of stress in the resource. Currently, in the Tintinara and Tolmer Management Areas, actual extraction is well below the level of allocation. As a result, the management approach discussed in the *Hydrogeological Review of the Tintinara Coonalpyn PWA* recommends that allocations be reduced to current levels of extraction so that if the future need arises, extraction can be reduced.

The current Water Allocation Plan for the Tintinara Coonalpyn Prescribed Wells Area (PWA) was adopted in 2003. At the time, it was identified that the volumetric allocation methodology applied would require review. The review of the current volumetric conversion model has been recently completed, taking into account 5 years of metered data collected since 2003, and the results of a 4-year project carried out in the Lower Limestone Coast, Padthaway and Tatiara area to develop a volumetric conversion model. This project reviewed the climatic conditions of the entire South East region, and indicates that the Tintinara-Coonalpyn area is in a similar climatic band and therefore has similar crop water requirements as most of the Tatiara region.

As a result, crop water requirements in Tintinara Coonalpyn have been updated, and the current base allocation found to be sufficient in all cases except wine grapes.

In addition, volumes pumped over the last 5 years have been reviewed and indicate that delivery components of 11% for drip and 18% for spray would be sufficient. Previously on a licence, base allocation and delivery component were itemised separately. It is proposed that the sum of the base allocation and the delivery components now be called a **Tradeable Component** (proposed to be fully tradeable). Flood irrigators were found to require an additional volume, described as a **Delivery Supplement**, equivalent to 85% of the tradeable component and which is assumed to return to the aquifer through deep drainage past the root zone of the crop. This volume will be available to eligible flood irrigators in the Tintinara Management Area (MA) upon application. The *Hydrogeological Review of the Tintinara Coonalpyn PWA* indicates that the volume that can be removed from the system (ie water pumped that does not return to the system through deep drainage) should be limited to 26,000 ML/year for the Tintinara MA and 6,000 ML/year for the Tolmer MA. As a result, it is proposed that the sum of all the Tradeable Components in each MA be reduced to a sustainable level, known as the Target Management Level (TML). The TML is equal to the losses from the system and does not include delivery supplements (but does include an allowance for unlicensed stock water use and domestic water use (S & D water use)). See Table 1 for the new TMLs and the reduction in allocations required to meet the new TML (minus S & D water use). The TML is similar to the Permissible Annual Volume (PAV) set under the 2003 Plan in that it accounts for all licences plus stock water use and domestic water use.

Table 1: New Target Management Levels and reduction in allocations needed.

Management Area	Current Total Allocations (ML)	Sum of new Tradeable Components (ML)	Target Management Level (TML)(ML)	% Reduction required to meet TML (Minus S & D Water Use)
<b>Tintinara</b>	32,835	26,917	26,500	3.4
<b>Tolmer</b>	7,690	6,849	6,350	12

### How are reductions proposed to be met?

Discussions to date propose that reductions commence at the start of the second year of the new Plan, in order to provide licensees with one year in which to adjust to their new volumetric allocations. A method for reducing allocations to TML has been developed in discussion with a large number of licensees in the Tintinara and Tolmer MAs. In order to ensure licensees are affected as equally as possible, licences that are proposed to change from a large delivery component to a smaller one when the Plan is adopted, would not be subject to reductions during the life of the Plan. Conversely, the licences that are proposed to have an initial increase, no change, or minimal change in delivery component when the Plan is adopted, would be subject to reductions over time.

This approach attempts to make overall changes in allocations as similar and fair as possible.

Table 2 shows five examples of allocation types found in the Tintinara Management Area. It shows the proposed changes to delivery components, as well as the proposed reduction in allocation over the five years of the new Plan. To ensure similar overall percentage reductions across licences, the reductions after the new delivery components are implemented are proposed to apply only to flood licences and to licences that had a delivery component of less than 30% under the 2003 Plan. The numbers in the second-to-last column indicate the ML per hectare allocation by the start of the fifth year of the new Plan, if the licensee was to continue irrigating the same area with the same allocation.

**Table 2: Current allocations, new allocations and new allocations to continue irrigating the same area in the Tintinara Management Area. Also shows the changes in allocation as a result of the introduction of the new delivery components, and the required reduction to meet the TML. Note that flood irrigation includes a non-tradeable delivery supplement.**

Original Allocation (ML/ha/yr)	VOLUMETRIC ALLOCATION MODEL				REDUCTIONS		
	Original Delivery Component	New Delivery Component	New Allocation (ML/ha/yr)	Percentage Change	Reduction during WAP	New allocation for same area after 5 years (ML/ha/yr)	% Difference in allocation prior to new WAP and end of 5 <sup>th</sup> year
<b>7.69</b> (Lucerne)	27 %	18 %	7.13	- 7 %	- 10 %	6.44	- 16 %
<b>8.96</b> (Potato)	37 %	18 %	7.73	- 14 %	0 %	7.73	- 14 %
<b>8.46</b> (Lucerne, high salt)	40 %	18 %	7.13	- 16 %	0 %	7.13	- 16 %
<b>9.29</b> (Lucerne, traveller)	54 %	18 %	7.13	- 23 %	0 %	7.13	- 23 %
<b>9.29</b> (Lucerne, flood)	54 %	18 %	13.19	42 %	- 10 %	11.92	+ 28 %

Table 3 shows examples from the Tolmer MA and the changes in allocations compared to current volumes, as a result of the new delivery components. The amount of reduction to TML required is greater than in Tintinara MA,

as the difference between current allocations and the new TML is greater. A 17% reduction has been applied to licences with a delivery component of less than 30% issued under the 2003 Plan.

**Table 3: Current allocations, new allocations and new allocations to continue irrigating the same area in the Tolmer Management Area. Also shows the changes in allocation as a result of the introduction of the new delivery components, and the required reduction to TML.**

VOLUMETRIC ALLOCATION MODEL					REDUCTIONS		
Original Allocation (ML/ha/yr)	Original Delivery Component	New Delivery Component	New Allocation (ML/ha/yr)	Percentage Change	Reduction during WAP	New allocation for same area after 5 years (ML/ha/yr)	% Difference in allocation prior to new WAP and end of 5 <sup>th</sup> year
<b>6.27</b> (Pumpkin)	18 %	18 %	6.27	- 0 %	- 17 %	5.21	- 17 %
<b>7.69</b> (Lucerne)	27 %	18 %	7.13	- 7 %	- 17 %	5.93	- 23 %
<b>8.46</b> (Lucerne, high salt)	40 %	18 %	7.13	- 16 %	0 %	7.13	- 16 %
<b>9.29</b> (Lucerne, traveller)	54 %	18 %	7.13	- 23 %	0 %	7.13	- 23 %

### How does this compare with other areas in the South East?

Using the updated delivery components, allocations in the Tintinara Coonalpyn PWA would be very similar to those in the neighbouring Tatiara PWA. Table 4 compares

tradeable components between the Tintinara and Tolmer Management Areas (Tintinara Coonalpyn PWA) and the Tatiara and Stirling Management Areas (Tatiara PWA) following updates to delivery components and reductions to TML (flood allocations shown include the delivery supplement).

**Table 4: Comparison of tradeable components in Management Areas in Tatiara PWA and Tintinara Coonalpyn PWA**

Management Area	New Allocation (ML/ha/yr)			
	Lucerne Pivot		Lucerne Flood	
	Before Reductions	After Reductions	Before Reductions	After Reductions
<b>Tintinara</b>	7.13	6.44	13.19	11.92
<b>Tolmer</b>	7.13	5.93	N / A	N / A
<b>Tatiara</b>	7.14	4.28	13.34	8.00
<b>Stirling</b>	4.76 – 7.79	2.86 – 4.67	10.16 – 16.08	6.10 – 9.65

### Conclusion

Following the application of new delivery components to licences, overall reductions of 3.4% and 12% would be required in the Tintinara and Tolmer management areas, respectively. The *Hydrogeological Review of the Tintinara Coonalpyn PWA* also recommends that the current area-

limiting policy can be removed once these reductions are met. This is proposed to occur once the reductions in allocations have been completed or formally suspended (for example, if the resource was to recover and no further reductions are necessary).

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