Making the most of your water -

Planning your water use

Factsheet 2 | Version 1 | April 2015

New conditions are being added to all water licences that will require you to keep records to demonstrate compliance. DPIPWE has developed some factsheets to assist you in understanding how planning, recording and reviewing your water use can assist you in being compliant with your water licence.

Estimating and planning are the first steps in managing your water. Through planning you are developing a system that you can use to record and review your water use. This factsheet details a few simple steps that will assist your planning.

1. Understand your licence

Since July 2014 an accountability condition has been added to all licences as they have been renewed or changed. If you do not have a copy of your current licence you can apply and pay a fee for a new one by downloading a form from www.dpipwe.tas.gov.au/water. The *Know your Water Licence* factsheet provides information on your licence.

2. Determine how much water you have available

A simple water budget calculates how much water you have available to take, including into winter storage, against how much you plan to use. Add up all sources of water, including licensed water allocations, any purchased water, water from catchment dams and groundwater. If you have lower reliability flood take allocations, it may be best to allow for actual volumes rather than those allocated.

Table 1: Example Water Available

Water Source and Surety[1]		Water available (ML)	Water historically available (ML)[2]	Water used (ML)[3]
A	Winter allocation Surety 5	100	100	
B	Summer allocation Surety 5	50	50	
C	Summer allocation Surety 6	50	40	
D	Groundwater	100	100	
E	Purchased water	150	150	
F	Catchment Dam	50	50	
	Total	**500**	**480**	

[1] *Surety levels indicate the priority for access to water. Information is provided in this factsheet on surety levels.*

[2] *In some catchments with regular restrictions, all of the allocated water may not always be available ie only 80% may be available on average each year. This is because water is allocated at different percentages of reliability.*

[3] *This is calculated at the end of the season as part of the reviewing process*

3. Estimate how much water you need

This is the second part of a water budget where you work out how much water you will need for the season by detailing what crops you plan to grow, the number of hectares for each and an estimated water requirement. The water available should at least be equal to or greater than the water needed.

Table 2: Example Water Needed					
Priority[4]	Irrigated Crop	Area (ha)	ML required/ha[5]	Total ML	Water used[6] (ML)
1	Potatoes	20	5	100	
2	Poppies	10	3	30	
3	Pasture	50	4	200	
	Total			**330**	

[4] *Which crop has the highest priority for water? (usually the highest value crops)*
[5] *This can be calculated using your experience or there are industry average figures available in this factsheet.*
[6] *This is calculated at the end of the season as part of the reviewing process.*

4. Develop an operational plan

This details how different sources of water will be used to meet the water budget. You should include the priority that crops would be watered if supply is limited. The priority can be recorded in the Water Needed table against the crop type (eg 1 is highest priority).

Table 3: Example Operational Plan								
Priority	Crop	Water Required (ML)	Total water available for each source[7]					
			A	B	C	D	E	F
			100 ML	50 ML	40 ML	100 ML	150 ML	50 ML
1	Potatoes	100	50	40	10	-	-	-
2	Poppies	30	20	10	-	-	-	-
3	Pasture	200	30	-	30	100	-	40
Total Allocated[8]		**330**	**100**	**50**	**40**	**100**	**0**	**40**

[7] *The water that is calculated in the Example Water Available Budget.*
[8] *The total from each source should not be any greater than the value in the Example Water Available Budget*

An operational plan helps maximise the use of all allocations and sureties and non-licensed sources to minimise costs and risks. It should also include a contingency plan to allow for drier than expected conditions and any restrictions that may be applied.

It can take significant time to source new water supplies. If your Water Budget shows that water needed may exceed the water available then use the time before irrigation starts to secure additional water.

Crop seasonal water requirements

We all recognise that different crops use different amounts of water depending upon the season. This can make it difficult to budget your water requirements.

Many farmers through experience would have an understanding of the average water needs of their crops.

The information provided in this table is generally in a range to allow for differing climatic zones and seasonal conditions. As expected, hotter and drier areas of the state will require more irrigation water than the wetter, cooler areas. Time of planting may also be an important factor in determining crop water requirements.

The irrigation quantity is indicated in megalitres per hectare (ML/ha). One megalitre is equal to 100mm of water applied to one hectare of crop.

Crop	Approximate Irrigation Quantity (ML/ha)
Apples	4.0
Brassica seed	1.0 - 3.0
Barley	1.0 - 3.0
Blueberries	3.0 - 3.5
Broccoli	2.0 - 2.5
Canola	1.5 - 3.0
Carrots	3.5 - 4.0
Carrot seed	4.2
Cauliflowers	3.5 - 4.2
Cherries	3.0 - 4.0
Clover seed	1.0 - 2.0
Grapes - Wine	0.5 - 2.5
Grass seed	1.5 - 2.0
Green beans	2.0 - 4.0
Hops	2.0 - 4.0
Lucerne	3.5 - 7.0
Oats	1.0 - 3.0
Onions	3.5 - 4.0
Pasture - Dairy	3.5 - 7.0
Pasture - Grazing	3.0 - 5.0
Pasture - Refurbishment	1.0 - 2.0
Peas	1.0 - 3.0
Peppermint	3.0 - 4.0
Poppies	1.0 - 4.5
Potatoes - Fresh Market	2.0 - 4.5
Potatoes - Processing	4.0 - 7.0
Potatoes - Seed	3.0 - 6.0
Pyrethrum	1.0 - 2.0
Strawberries	4.0
Triticale	1.0 - 3.0
Wheat	0.5 - 4.0

These values have been determined utilising current industry values combined with expertise from DPIPWE and TIA officers.

Washdown water

The water used for washing down dairies and other commercial activities is included in your allocation. Therefore, it may be worthwhile including a value in your water budgeting.

As the amount of water used varies depending upon your system, contact your industry expert for advice.

What are water sureties?

There are eight sureties, with Level 1 water available at the highest surety and Level 8 at the lowest. Where water restrictions are imposed, generally allocations at a lower level of surety are restricted before those at a higher level. Allowing for reliability during planning reduces the risk of running out of water during the season.

Water Surety Levels	
Surety 1	• Expected to be available at > 95% reliability • Allocated for Stock and Domestic, fire-fighting, town water supplies.
Surety 2	• Allocated to supply the needs of ecosystems dependent on the water resource.
Surety 3	• Commercial licences issued for minimum of 99 years replacing 'old' prescriptive rights under previous Acts.
Surety 4	• Special licences granted to a body corporate for the generation of electricity or similar.
Surety 5	• Expected to be available > 80% reliability. • Water otherwise than under Surety 1 - 4, including direct extraction or storage into dams.
Surety 6	• Available at >50% and < 80% reliability • Direct extraction or storage into dams for irrigation and other commercial purposes.
Surety 7	• Available at >20% and < 50% reliability. • Direct extraction or storage into dams for irrigation and other commercial purposes.
Surety 8	• Lower level of reliability than a Surety 7, includes water provided under catchment or site specific thresholds or triggers and flood conditions.

Template 1: Water Available		Season Date:		
Water Source and Surety[1]		Water Available (ML)	Water historically available (ML)[2]	Water used (ML)[3]
	TOTAL			

[1] *Surety levels indicate the priority for access to water.*

[2] *In some catchments where there are regular restrictions, all of the allocated water may not always be available ie only 80% may be available on average each year. This is because water is allocated at different percentages of reliability.*

[3] *This is calculated at the end of the season as part of the reviewing process*

Template 2: Water Needed			Season Date:		
Priority[4]	Irrigated Crop	Area (ha)	ML required/ha[5]	Total ML	Water used[6] (ML)
	Total				

[4]*Which crop has the highest priority for water (usually the highest value crops)*
[5]*This can be calculated using your experience or there are industry average figures available here*
[6]*This is calculated at the end of the season as part of the reviewing process*

Template 3: Operational Plan			Season Date:					
Priority	Crop	Water Required (ML)	Total water available for each source[7]					
			A	B	C	D	E	F
Total Water[8]								

[7] *The water is that calculated in the Example Water Available Budget.*

[8] *The total from each source should not be any greater than the value in the Example Water Available Budget*