APPROVALS	SIGNATURE	DATE
Manager Water Supply East	Terry Clapham	
Operations Supervisor, Eastern Irrigation	Gavin Prior	

1) INTRODUCTION

This Procedure is designed to ensure Southern Rural Water accurately allocate water entitlements to its customers in the MID and on the Macalister and Thomson Rivers.

2) RESPONSIBILITY AND AUTHORITY

The Operations Manager, Eastern Irrigation is responsible for the overall procedure being carried out.

The General Manager Water Supply is responsible for the approval of announcement in seasonal allocation to customers.

3) SAFETY REQUIREMENTS

N/A

4) EQUIPMENT

- A computer with access to the directory labelled " S:\WSE\EIB\Operations\Allocations*Year*.xls
- A computer with access to directory labelled

  S:\WSE\EIB\Operations\Thomson River\Thomson Daily \ ***Year***.xls".
- A computer with access to directory labelled

  S:\WSE\EIB\Operations\Thomson River\Thomson Inflows \ ***Year***.xls".
- A computer with access to the "Irrigation Planning Module".

5) PROCEDURE

STEPS

5.1 Open the Water Allocation Model (Water Balance Sheet sample Attachment 1).

5.2 Enter current date at top of spreadsheet.

5.3 Enter the Lake Glenmaggie storage volume, storage figures can be found under irrigation file "Thomson Daily ***Year***.xls".

5.4 Enter "River Flow – Thomson" (Harvest Rights) from the allocation spreadsheet.

5.5 Enter the Thomson Reservoir storage volume, storage figures can be found S:\WSE\EIB\Operations\Thomson River\Thomson Inflows \ ***Year***.xls".

The Thomson Reservoir volume is **ONLY** to be included to supplement allocations

1. Thomson Reserve can be used to supplement allocation up to 100%
2. Once Lake Glenmaggie spills the announced allocation based on available water as at 15 December
3. If Thomson Reserve has less than 20,000ML than the announced allocation is 90%, between 20,000ML and 30,000ML the allocation is 95%, over 30,000ML the allocation is 100%

The available drought reserve is to be included to bring allocation up to a maximum of 100% (This water would typically be ordered much later in the season; if, in the meantime there are inflows into Lake Glenmaggie these flows are to be used instead of the drought reserve to deliver 100% allocation. The drought volume is then removed from the allocation once 100% is reached

And / or

If volumes in the Thomson Reservoir exceed 30,000ML this extra volume is to be included in the allocation permanently

Please refer to the Management of the Thomson Entitlement for further details.

5.6 Enter "Current inflow minimum (30 Days Macalister), excluding Environmental Flows"

These flows are calculated by using;
One - Current flow less environmental requirement
Two - 50% of the first day
Three – 50% of two
Four – 50% of three
Total of the average of one and two and multiple by 10 days, plus the average of two and three multiplied by 10 and three and four multiplied by 10.

For example if we had total inflows of 560ML, less environmental flows of 60ML

One = 500ML
Two = 250ML
Three = 125Ml
Four = 63ML

Average one and two = 375 x 10 = 3,750ML
Average two and three = 187.5 x 10 = 1,875ML
Average three and four = 94 x 10 = 940ML
Total inflow for period would be 6,565ML

These calculations have been inserted into an inflows calculation worksheet in the Allocation spreadsheet requiring only the daily flow and the environmental flow figures to be entered to update the allocation model.

5.7 Enter "Head Gauge Measurement and Efficiency Safety Factor".

4% - 1 July to 28 February;

2% - 1 March to 15 April; and

0% - 16 April to 15 May.

5.8 Enter "Dead Storage" Currently approximately 4,800ML.

5.9 Enter "Evaporation"

*3,000ML - 1 July to 28 February;

1,500ML - 1 March to 14March

750ML - 15 March to 31 March

0ML – 1 April to 15 May.

* Evaporation losses are only experience when natural inflows are below BE requirements, in our worst year on record was for 3.5 months and equated to 7,000ML, therefore 3,000ML would be considered in a normal year

5.10 Delivery Losses figure will be the average of the three previous seasons, as set out in the Water Balance Sheet – Actual and Assumption Data report, if the allocation is less than 50% on the 15 August the delivery losses are to be adjusted to 32% until the allocation reaches 100%.

5.11 Generate IPM reports "Delivery Volume to Current Date" for operational area MID / Thom / Rain / Mac. (Use the -5% data)

5.12 Enter IPM information.

5.13 If Lake Glenmaggie storage volume, less 4,800ML for dead storage and less environmental entitlement remaining exceeds the deliverable volume of *1,500ML per day, then the allocation can be increased.

*Equals 75% of delivery capacity

5.14 Allocations should only be increased in 5% increments, if allocation is at 100% HRWS, step-ups can be considered when 3% of LRWS is available in cell H-40 in balance sheet. (Utilising the Thomson Drought Reserve as security for these advancements).

5.15 Unused entitlement is to be reviewed on the 15 April; if excessive amounts remain the allocation can be increased by a maximum of 5%. While this figure is based on estimates the IPM "ABA Entitlement report" detailing the amount of entitlement remaining above 90% can be used as a guide to ascertain the actual figure.

5.16 No increases in allocation are to be announced after the 5 May each year.

6) INPUT FREQUENCY

This procedure should be carried out on a fortnightly basis and any changes announced by 1pm Tuesday's.

WATER BALANCE SHEET

ATTACHMENT 1

Supply

Glenmaggie Volume		48118
River Flow - Thomson (to May)		1743
Thomson Drought Reserve Allocation	**30797**	
Current inflow minimum (30 Days Macalister), excluding Enviro Flows		3063
Thomson peak demand usage (Expected Usage)		3385
Thomson - Water available for allocation		
Thomson usage to date(If Req)		-2588
Water Available		**53721**

Less Storage Losses & Evaporation

Head Gauge Measurement and Efficiency Safety Factor	**0%**	0
Dead storage		4800
Evaporation		0
Total		**4800**

Water Available after storage losses	**48921**
Less Delivery Loss	
Channel distribution loss **(27%)** Which includes outfalls, seepage/leakage, measurement error and evaporation	**13209**
Water Available after storage & delivery losses	**35712**
Allocation to calculate environments losses	107
PLUS Water Returned from the Environmental Share of losses	**3600.0**
Total Available & Deliverable Water	**39312**

Announced Allocation	**HRWS**	**100%**
	LRWS	**5%**

Demand

High Reliability Water Share - MIA		146033
Low Reliability Water Share - MIA	69191	
High Reliability Water Share - Environment		12461
Low Reliability Water Share - Environment	6230	
Total		**158494**
LESS Seasons End Unused Entitlement Estimate		**3000**
Total Demand		**155494**

Usage to date

Environmental Usage to date	0
Actual Usage High & Low (Meter Readings)	132770
Estimated Usage High & Low (Orders Only)	10785
Total	**143555**

Spill Entitlements

Spill Entitlement Usage	15578
Outfall Spill Entitlement	926
Total	**16504**
Water delivered as Spill Entitlement expressed as % of HRWS	11%

Total Delivered to date less Spill Entitlements	**127051**
Max. remaining demand	**28443**
Water Available to allocate in ML	**10869**
Water Available %	**107.0**

Available Allocation	**HRWS**	**100**
	LRWS	**15**