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3 October 2006

Dear Water User

Mokoan – Return to Wetland Project Water Supply Reliability Offset Packages

The Victorian Government, as part of its Our Water Our Future Action Plan has made the decision to close Lake Mokoan and return it to the original Winton Wetlands.

A package of offset measures is required to ensure that reliability of supply to Broken System irrigators is maintained after the decommissioning of Lake Mokoan.

One of the roles of the Mokoan Project Control Board is to oversee the delivery of this commitment. The Board comprises the executive managers from Goulburn-Murray Water (G-MW), the Goulburn Broken Catchment Management Authority (GBCMA) and Department of Sustainability and Environment (DSE) North East Region and Water Sector Group. G-MW has been requested by the Minister to investigate and deliver the various infrastructure measures required by the project, GBCMA is providing support for river health aspects of the project and DSE provide oversight of the project delivery and funding.

For the past 18 months investigations into a broad range of measures to address the Government commitments have been underway, and were assisted in the early stages by the Broken System Reliability Reference Committee. These investigations have now reached the stage where we are ready to consult further with you.

Investigations have narrowed down the extensive range of individual options into four Offset Packages (A, B,C,D). Each package provides measures which will maintain existing supply reliability and will secure the future of the Broken irrigation system. The packages include a range of potential infrastructure, efficiency improvement and water purchase options.

The range of offset measures includes:

- Remote control and monitoring of supply structures and stream flow stations
- Dynamic real time monitoring of irrigation diversion flow meters
- Supply into Broken River downstream of the East Goulburn Main
- Pump station and pipeline to supply areas upstream of the East Goulburn Main
- Pipelining of Major Creek system

- Rain rejection storages on Lake Mokoan Inlet Channel and adjacent to Broken Creek
- Water entitlement purchase
- Operational Improvement options

The Offset Packages are further described in the attached Fact Sheet and Attachment 1. The first 8 of the offset measures in Attachment 1 are common to all four packages and include the Tungamah Pipelining scheme. While we are seeking your input to the development of a final offset package, work is already well under way on the Tungamah scheme. This project commenced before the decision was made to close Lake Mokoan, and is now linked to the Mokoan Project as it provides a significant reliability benefit for the Broken system.

Each of the packages has a component of water purchase to boost reliability to 91%. The packages provide a clear distinction between options with high infrastructure - low water purchase and options with high water purchase - low infrastructure components. Any water purchases undertaken will be based on voluntary purchases from willing sellers.

The Project Control Board is now particularly interested in receiving your comments on the offset measures proposed in each of the four packages.

Water Users and associated groups are invited to submit written comment or queries on the packages by Wednesday 8 November 2006. Submissions should be forwarded to:

MOKOAN PROJECT OFFICE
c/o DSE Building
89 Sydney Road • Benalla, VIC 3672

If you have any queries on the package details provided please contact the Project Director, David Jeffery at the Mokoan Project Office on 03 5761 1611.

Issues raised in the consultation process will be considered in the development of a draft final Offset Package which is to be submitted to the Minister for Water for approval.

Further Fact Sheets providing responses to a range of Frequently Asked Questions and more detail on individual offset measures can be found on the Project website www.lakemokoan.com or by contacting the Mokoan Project Office on (03) 5761 1611.

Yours truly,

**Department of Sustainability
and Environment**



Kevin Ritchie
REGIONAL DIRECTOR
NORTH EAST REGION

**Goulburn Broken Catchment
Management Authority**



W J O'Kane
CHIEF EXECUTIVE

Goulburn-Murray Water



Russell Cooper
CHIEF EXECUTIVE

MOKOAN PROJECT OFFICE
c/o DSE Building
89 Sydney Road • Benalla, VIC 3672
p: 03 5761 1611 • f: 03 5761 1628

MOKOAN - RETURN TO WETLANDS					
SUMMARY OF OFFSET PACKAGES TO PROVIDE AT LEAST 91% RELIABILITY					
No.	OFFSET	Package			
		A	B	C	D
1	Tungamah Pipeline (incl. 140ML earthen storage, pump station from the East Goulburn Main Channel and 360 km pipeline distribution system, supplying 650 services over an area of 63,000 ha)	√	√	√	√
2	Mawson/Burnbrae Entitlement Purchase (incl. purchase of 1000ML of entitlement from a property at Nalinga in 2004)	√	√	√	√
3	Remote Control and Monitoring of L.Nillahcootie (incl. remote monitoring of storage inflows and outflows and remote control of the Nillahcootie outlet valve operation)	√	√	√	√
4	Remote Control and Monitoring of Broken River Weirs (incl. remote monitoring of inflows and outflows and remote control of regulating structure operation at Broken Weir, Hollands Weir, Casey's Weir)	√	√	√	√
5	Remote Control and Monitoring of Broken Creek Weirs (incl. remote monitoring of inflows and outflows and remote control of regulating structure operation at Flynn's, Trewin's, Waggarendall Weirs)	√	√	√	√
6	Flow Monitoring of Catchment Streams (incl. provision of remote monitoring of flows at Moorngag, Lima East Creek and Orrvale)	√	√	√	√
7	Dynamic Real-time Monitoring of Irrigation Diversion Flow Meters (incl. provision of up to 100 upgraded flow meters complete with remote sensing and alarming capability)	√	√	√	√
8	Rain rejection storage Lake Mokoan inlet channel (300ML capacity) (incl. provision of a new regulating weir on the Inlet Channel near Hollands Weir, modifications to existing channel structures and remote monitoring and control equipment. Provides 300 ML storage capacity which can capture "surplus" river flows during the irrigation season and release these at a later time, rather than release from Nillahcootie. System includes retention of Broken and Holland's Weirs and utilises both weir pools for temporary storage purposes)	√	√	√	√
9	Supply into Broken River downstream of EGM (incl. a new 30ML/d regulating structure located adjacent to the existing Broken River Outfall on the East Goulburn Main Channel, to supply 14 diverters between the EGM and Shepparton)	√	√		√
10	Pump Station and Pipeline to supply irrigation diversions 2km upstream of EGM to Violet Town Boundary Rd from EGM (incl. supply to 3 diverters, 2.1 km of pipeline up to 375 dia at 24 ML/d)	√			
11	Piped of Supply to Major Creek Area (incl. pump station from the Broken Creek and 2.6 km pipeline distribution system, supplying 3 services)	√			
12	Off-line Storage within Broken Creek System (Below ground off-line storage with capacity of 100 ML near Trewins Weir. This includes inlet channel and structure, a pump station at the outlet and an outlet channel)				√
13	Off-line Storage within Broken Creek System (Below ground off-line storage with capacity of 200 ML near Trewins Weir. This includes inlet channel and structure, a pump station at the outlet and an outlet channel)	√			
14	Supply to diverters d/s of EGM via Shepparton Irrigation Area channel system (incl options of gravity pipelines, pumped pipeline, farm channel extensions or upgrades, all from various existing SIA supply channels).			√	
15	Supply of 1000ML of Operational Loss from EGM rather than Lake Nillahcootie (provides for minimum operating flows required by lower Broken diverters to be released from the EGM, rather than Nillahcootie)				√
16	Pump Station and Pipeline to supply irrigation diversions 6.5 km upstream of EGM to Keally's Rd from the EGM (incl. pump station to supply to 15 diverters, 8.4 km of pipeline up to 750 dia at 60 ML/d)		√		
17	Pump Station and Pipeline to supply irrigation diversions 6.5 km upstream of EGM to Keally's Rd from the EGM and Pump Station and Pipeline to supply irrigation diversions 7 km downstream of Gowangardie Weir from Gowangardie Weir. (incl. pump station to supply to 15 diverters, 8.4 km of pipeline (u/s of EGM) up to 750 dia at 60 ML/d and pump station to supply to 9 diverters, 16.9 km of pipeline (d/s of Gowangardie) up to 600 dia at 44 ML/d. Also includes, provision for the pump station to supply water into the East Shepparton D&S channel at Gowangardie Weir and possible extension of upstream diversion pump suction)			√	√
Operational Offsets		√	√	√	√
Additional Broken Entitlement Purchase (ML)		4640	3160	1600	1150
Budget Required for Reliability Offset Package		36.5	38.0	45.0	45.5

MOKOAN - RETURN TO WETLAND PROJECT
BROKEN SYSTEM RELIABILITY
OFFSETS NOT INCLUDED IN FINAL PACKAGE/S

No.	OFFSET MEASURE	CAPITAL COST	RELIABILITY IMPROVEMENT	COST of RELIABILITY	Reasons for not including in recommended Packages
		\$m	ML	\$ '000/ML	
1	Nillahcootie Raising	15.0	1800	8.3	Requires significant dam safety upgrade to allow raising of the current embankment by 1m to provide 5GL extra storage. Cost of this option found to be significantly greater than that assumed in the White Paper. Cost increase exposed only after completion of dam design review and risk assessment. Very high cost per ML of water saved.
2	East Shepparton Pipelining	3.9	800	4.9	Investigation to assess merits of pipelining all of the existing East Shepparton D&S system. Relatively high cost for a saving of 800 ML. Very low level of customer acceptance of the proposed pipelining option. A number of environmental issues associated with the abandonment of the existing supply infrastructure lead to a medium level of environmental impacts being assessed.
3	Pipeline supply to Lower Broken u/s of EGM to Gowangardie	32.7	6235	5.2	Excessive capital and recurrent costs. Major infrastructure investment with uncertainty over level of future utilisation
4	Broken Ck Off-stream Storage [500ML]	5.2	500-1000(e)	10.4 - 5.2	High cost per ML saved. Reliability benefit difficult to determine
5	Broken Ck Off-stream Storage [400ML]	4.4	400-800(e)	11.0 - 5.5	High cost per ML saved. Reliability benefit difficult to determine
6	Broken Ck Off-stream Storage [300ML]	3.8	500 - 750 (e)	7.6 - 5.1	High cost per ML saved. Reliability benefit difficult to determine
7	Broken Ck On-stream Storage [37ML]	0.6	40 -120(e)	15 -5	High cost per ML saved. Reliability benefit difficult to determine
8	Broken Ck Pipeline d/s Caseys	34.0	3300 (e)	10.3	High cost per ML saved. Reliability benefit difficult to determine
9	Broken Ck Pipeline d/s Trewins	16.8	500 -1000 (e)	33.6 - 16.8	High cost per ML saved. Reliability benefit difficult to determine
10	Broken Ck Pipeline d/s Flynnns	8.3	500 - 750 (e)	16.6 - 11.1	High cost per ML saved. Reliability benefit difficult to determine
11	Broken Ck Channel	15.4	1000 - 2000 (e)	15.4 - 7.7	High capital costs and increased recurrent costs and unable to determine loss reduction benefit
12	Provision of a mid System Storage [5,000 ML]	35.7	4500	7.9	Extremely high capital costs, adverse impacts on future Wetland, significant reduction in overall project water savings (approx 42GL)
13	Provision of a mid System Storage [10,000 ML]	54.4	9000	6.0	Extremely high capital costs, adverse impacts on future Wetland, significant reduction in overall project water savings (approx 34GL)
14	Provision of a mid System Storage [20,000 ML]	81.8	15500	5.3	Extremely high capital costs, adverse impacts on future Wetland, significant reduction in overall project water savings (approx 30GL)
15	Rain Rejection Storage (Outlet Channel 80ML)	0.5	200	2.5	Limited level of water savings and relatively high operating costs due to need to pump stored water back into the Casey's weir Pool. Complex operational requirement to achieve maximum efficiency
16	Raising Gowangardie Weir	2.8	100 -150 (e)	28.0 -18.7	Existing structure safety and fish passage concerns compounded. Increase in flood risk to upstream properties, significant adverse environmental impacts anticipated.

(e) = Estimated Figures