

# FACT SHEET

## NO. 12

### SUPPLY TO LOWER BROKEN OFF THE EGM



*Produced by Goulburn -Murray Water*

#### PURPOSE

A study was undertaken in 2005 to examine options for the supply of water from the East Goulburn Main Channel (EGM) to existing Broken system diverters located along the lower Broken River. Supply from the Goulburn system via the EGM would reduce the demand for irrigation water from Lake Nillahcootie and thereby help to maintain the reliability of supply to the remaining irrigation diverters in the Broken system.

#### THE OFFSET PACKAGE OPTIONS

One or more of the following lower Broken offset options (9, 10, 14, 16 & 17) have been included in each of the supply reliability offset packages under consideration as part of the Mokoan project:

- 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)
- 14) Replacement of Broken River supply to existing diversion pumps between the EGM and

Shepparton with supply from the Shepparton Irrigation Area Channel System

- 10) Supply via a pump station and pipeline from the EGM to existing Broken River diverters upstream of the EGM to Violet Town Road
- 16) Supply via a pump station and pipeline from the EGM to existing Broken River diverters upstream of the EGM to Keally's Road
- 17) To maximise the operational loss reduction downstream of Gowangardie, a fourth option is available which involves option 16, and in addition a supply via a pump station and pipeline from the Gowangardie Weir pool to existing Broken

River diversions downstream to Fothergill's Road.

Various combinations of these options together with other system offsets were investigated to identify the loss reduction, water savings and reliability benefits for the Broken System that may be achieved. For example, combining Lower Broken options 14 and 17 (below) provides an additional operational loss saving on the Broken System of up to 4200ML.

**Table 1: Offset Packages - Lower Broken Options**

Lower Broken Option	Volume to be supplied from the EGM (ML)	Estimated Cost of Works (\$)
9	900	1.0 Million
14	770	3.7 Million
10	1000	2.4 Million
16	3600	11.6 Million
17	4500	18.5 Million

### FEATURES OF THE SYSTEM DESIGN

Supply options from the EGM are shown in Figure 1 and Figure 2, and would require the construction of:

- 9) a new or augmented outlet from the EGM to the Broken River to supply the existing diversion pumps downstream of the EGM;
- 14) extension of Shepparton Irrigation Areas infrastructure to provide an alternative supply point for Broken River diverters between the East Goulburn
- 15) Main Channel and Shepparton, rather than diverting water from the Broken River;
- 16) a new pump station and 8.4 km of pipeline with a river crossing, outlet valves and meters to serve the properties supplied by the first fifteen diversion pumps upstream of the EGM
- 17) a pump station and 8.4 km pipeline to supply to 15 irrigation diversions upstream to Keally's Rd from the EGM and a pump station and 16.9 km pipeline to supply 9 irrigation diversions downstream of Gowangardie Weir, from the Gowangardie Weir pool.

Figure 1: Supply Options to Broken River Diverters upstream of the East Goulburn Main Channel

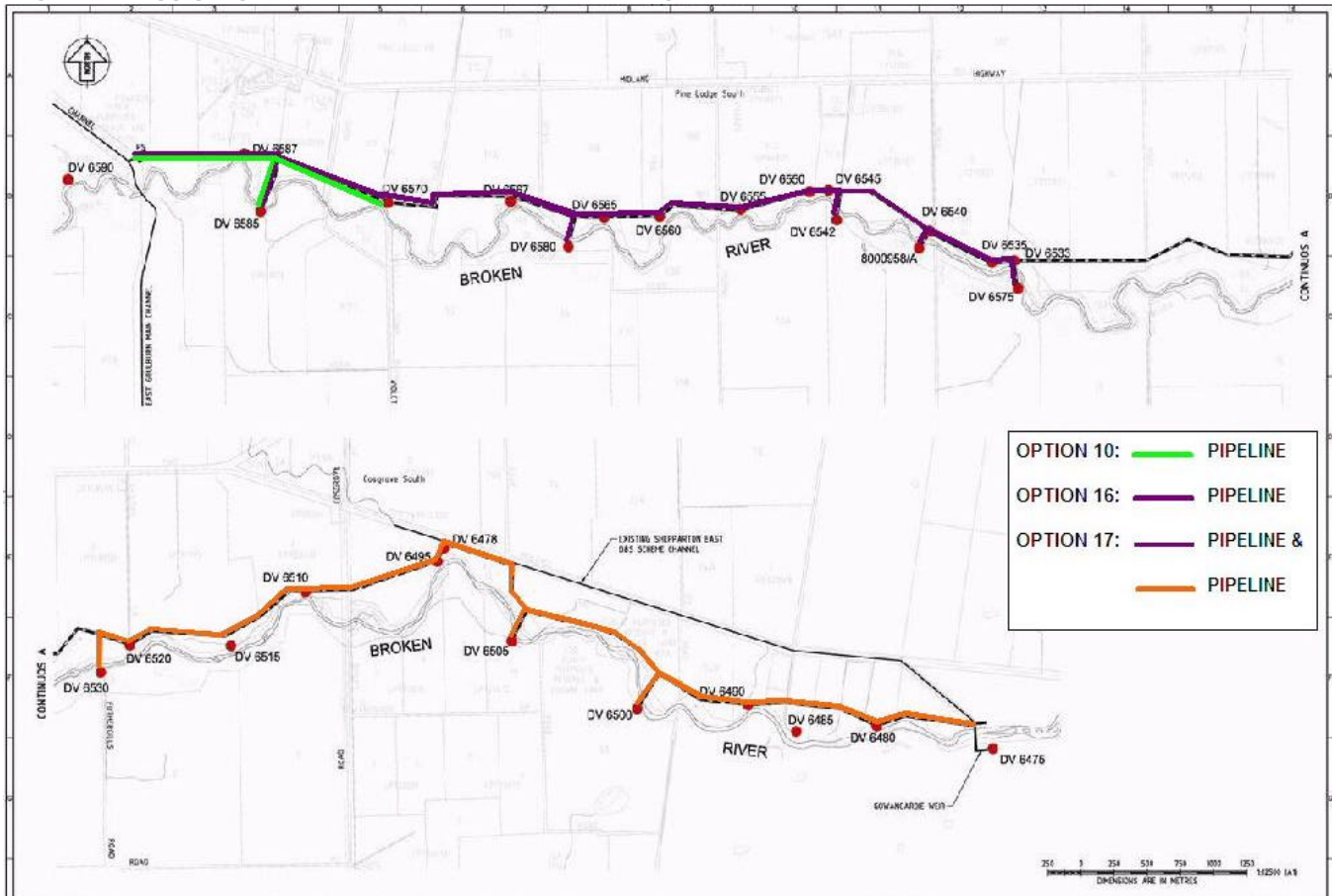
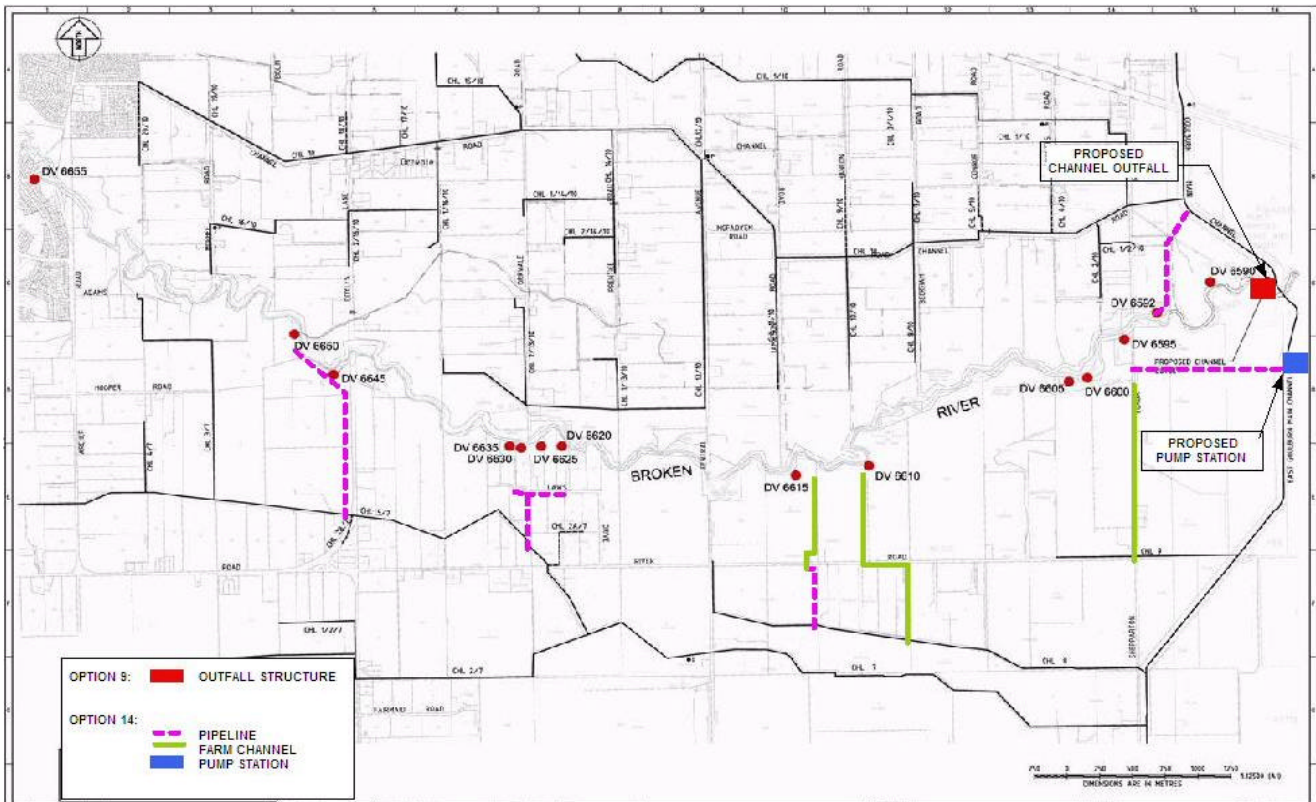


Figure 2: Supply Options to Broken River Diverters Downstream of the East Goulburn Main Channel



## OTHER BENEFITS

The benefits to the diverters of a piped supply from the EGM would include:

- improved service due to their close proximity to the source of supply;
- receiving supply from the more reliable Goulburn system;
- the opportunity to trade water in the larger Goulburn system; and
- for customers served upstream of the EGM, not having to pump their water supply from the Broken River.

environmental assessment undertaken for the preferred option include:

- construction of works adjacent to a major waterway,
- a pipeline river crossing, and
- the operation of a pumping station.

These environmental issues will be mitigated by; locating the works (pipeline) on private property, utilising boring technology to construct the river crossing and an appropriately designed pumping station.

## FURTHER ISSUES

A management plan will need to be implemented in order to minimise any negative impacts on vegetation from construction of the pipeline and pump stations. Issues identified in the

Supplying the diverters on the lower reaches of the Broken River from the EGM will reduce the regulated summer/ autumn flow in the river, however the minimum flows prescribed in the Broken System Bulk Entitlement Order would be maintained.

## FURTHER INVESTIGATIONS

The assessment of offset measures for maintaining the reliability of supply on the Broken River system has been undertaken at a feasibility level. The further development of the project will require a preliminary design and detailed design. The preliminary design will assess options for the required works and will include an assessment of the current and future level of service. The detail design will progress the preferred option to the construction stage. Both the preliminary and detail design will require direct landowner consultation.