

Water Conservation

Urban Sustainability Project
Case Study 6



Council: Gundagai Shire Council
Theme: Water Conservation
Project Name: Effluent Re-Use
Containment Upgrade

Project Summary

Financial

Total Cost	\$64,300
Grant Funding	\$47,300
Estimated annual savings	\$20,000

Environmental & Community

	TARGETS	ACTUAL OUTCOMES
Water saving through conservation	300MI	280MI
Percentage of materials used with recycled content water recycled	80% water recycled	80%



Existing effluent polishing ponds at the Sewerage Treatment Works

Overview of the Project

Gundagai Council introduced an effluent re-use scheme in 1994 to utilise effluent previously directed to the Murrumbidgee River to be re used on the Town's golf course and sporting fields. The Scheme provided for the effluent to be directed to an erosion gully that meandered through the golf course area. This area was dammed at each end to capture and store the effluent. Council installed an irrigation system and the EPA licence was amended to include approvals for effluent irrigation.

Almost immediately after the commencement of the Scheme, it was noted the channel spread the effluent over too great an area and this, coupled with

evaporation and loss to groundwater, meant that the amount of effluent available at peak times was far less than required.



This loss had increased over time and this fact, combined with less water entering the system as a result of the community's increased commitment to water conservation and the ongoing drought meant that the volume of effluent supplied had diminished to the point where the Scheme was struggling.

The project was instigated because of the lack of readily available effluent at critical times. The solution was to provide an area to store the effluent that was contained and manageable. The project provided for the construction of a sealed 6 megalitre holding pond adjacent to the effluent polishing ponds and re-direction of the effluent to this area.

The project and concepts were shared and discussed with the golf club and other sports groups who are the recipients of the recycled water.

The effluent containment upgrade project was carried out using Gundagai Shire labour and equipment. The area was excavated and shaped. Two block walls were installed and lined with a bentonite matting to ensure stability. The existing delivery pipework, which was approximately 60 years old and subject to erosion, was replaced to provide a safer option for delivery of effluent. An irrigation pump system was also installed.

Since the project was completed in October 2009, the storage area has been filled and all effluent water retained for re-use. The success of the project since completion has been monitored regularly. Both inflow and outflow to sewerage treatment works are metered and monitoring is carried out on a daily basis. The irrigation system is also metered. The new inflow is metered and the storage area defined, this allows staff to accurately assess the available effluent at any time and plan for optimum use.

Effluent is tested three times a year and compared with data collected from existing piezometers on the golf course to ensure that the effluent quality has improved.



Before: The existing storage facility showing heavy vegetation and lack of suitable storage area



Excavation works

Benefits and advantages

The new sealed holding pond has improved the delivery of effluent from the existing polishing ponds to the new storage area, by reducing the loss to groundwater. It has removed the potential for contamination of groundwater and additionally it can now be adequately treated if required because it is contained in a defined area. Council is now able to introduce the treatment of the effluent with a chlorine injection system.

The holding pond is defined and this allows staff to accurately estimate both inflow and outflow. The certainty of supply has allowed Council to initiate an

improved watering regime for the golf course and install additional irrigation to two other sports fields. This could not have been achieved prior to the project because there was insufficient effluent available to permit the inclusion of additional sports fields in the re-use scheme.



What could be done differently next time?

The works were undertaken in a professional manner and Council achieved good value for money. Whilst the storage area is adequate for Council's needs, if funding had been available it would have been desirable to create a larger holding area. Future extension of the effluent holding area is possible should funding become available.

Where to next?

The extra capacity to irrigate two more sports fields is a great step forward. The situation will be monitored over the next two years to see if there is sufficient effluent to allow further extensions to Council's parks and gardens.



Shaping the banks of the new storage facility



Storage facility completed and filling

Background to Total Urban Water Management in the Eastern Riverina Project

REROC Councils received \$1,918,400.00 grant funding in September 2008 from the NSW Environmental Trust for the Total Urban Water Management in the Eastern Riverina project to complete 26 projects. The Urban Sustainability Program aims to facilitate projects of significant environmental benefit to be delivered by local government in partnership with other government agencies, local businesses, and community organisations.

Water access, quality, quantity and sustainability were identified by member councils of REROC as the most pressing issues and projects identified were categorised under five environmental themes; Water Harvesting, Water Conservation, Water Quality, Salinity Management, and Environmental Flows. Read about the other projects on the REROC website

www.reroc.com.au

REROC

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