Onkaparinga Wastewater Treatment Plant

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Providing an affordable and sustainable solution for Community Waste Management Schemes wastewater disposal

TRILITY, in partnership with the City of Onkaparinga, has developed a Design, Build, Finance, Operate and Maintain (DBFOM) wastewater reuse scheme which enables the irrigation in one of the premier South Australian wine growing regions of McLaren Vale, McLaren Flat and Willunga.

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Working with clients such as the City of Onkaparinga provides TRILITY with the opportunity to demonstrate its expertise in developing affordable methods of providing Community Waste Management Schemes (CWMS) networks management and operations, septic tank and trade wastewater treatment and the reuse of over 360ML/year of treated effluent to regional communities. This project was developed with the client and provided a template for delivering small, privately financed projects in regional areas.

CWMS are systems that collect septic tank effluent via a common pipe network for treatment. They are an affordable method of providing sewage services to small regional communities which may not have the population base to warrant the capital expenditure necessary to provide full treatment services. These schemes are traditionally delivered by local government.

Under the Onkaparinga reuse scheme, septic tank effluent is collected from McLaren Flat, McLaren Vale and Willunga, treated in a purpose built Wastewater Treatment Plant (WWTP) and discharged to the City of Onkaparinga's existing storage dam at Willunga where it is subsequently pumped to vineyards and a neighbouring golf course.

TRILITY also implemented a SCADA system which monitors the entire reuse network, including the WWTP and pumping stations, which is controlled by remote access.

The WWTP is an intermittent decant extended aeration plant which is a common and well-established process in Australia. The plant has a peak wet weather capacity of 3 ML/d. In 2010 the City of Onkaparinga engaged TRILITY to enhance the plant's capability to accept a greater level of primary treated trade waste, predominantly from the wine and food industries throughout the region, as part of the Federal initiative to water proof the south of Adelaide. Completed in 2011, the enhancements increased the plant's average load and flow capability without increasing structural size.

Who

The City of Onkaparinga was formed in July 1997, following the amalgamation of the former cities of Happy Valley and Noarlunga with part of the District Council of Willunga. It is the largest council in South Australia encompassing 518 km^2.

What

The scope of the project was the redevelopment of six reuse schemes as well as the finance, design and construction of a WWTP. The contract includes a 25 year Operation and Maintenance (O&M) period, capital works and management of the septic de-sludging programme. More recently, the Sellicks Beach Reuse Scheme and several tradewaste treatment contracts have been integrated into the contract.

Where

The City of Onkaparinga is located on the southern fringe of Adelaide and is the largest local government area in South Australia, with a population of over 152,000 people.

Why

The driver of this project was the need to meet more stringent Environment Protection Authority (EPA) discharge licence requirements and to provide for future growth. Due to the lack of available funds, the private sector was engaged to provide the capital for the project and amortise the cost over a 25 year term.

Snapshot

Client	City of Onkaparinga
Type of Contract	Design, Build, Finance, Operate and Maintain (DBFOM)
Facilities	Wastewater treatment plant and pumping facilities Existing community waste management scheme networks
Technology	Intermittent decant extended aeration
Design Capacity	3ML/d
Term	25 years
Capital Cost	c. $4m

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