



South East Water - Tooradin, Cannons Creek, Warneet

South East Water were among the pioneers of the Australian Pressure Sewer industry with the town of Tooradin being sewerred for a variety of environmental reasons in November 2001.

Tooradin is a small and picturesque holiday town of some 600 people located 64 km south-east of Melbourne on the South Gippsland Highway. It is situated on the reclaimed swampland of Sawtell Creek Inlet at the northern tip of Westernport Bay.

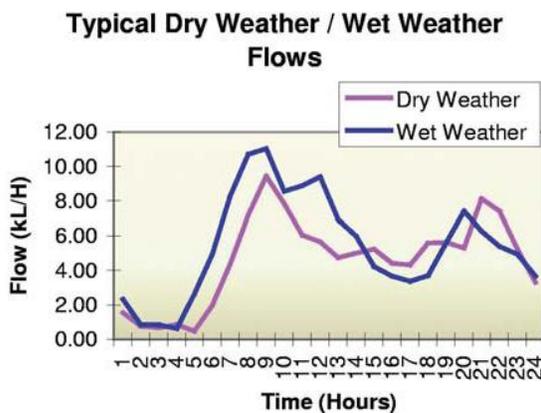
The tender was issued for a vacuum sewer system, with The EOne pressure sewer system and modified gravity sewer systems being offered as an alternative bid. The major challenges to the provision of sewerage included:

- Flat terrain
- High water table
- Vegetation with high environmental value
- Difficult soil conditions
- Only blackwater was diverted to the septic tanks
- Grey water discharged directly to the open street drains



Following the successful commissioning and operation of the system at Tooradin, the towns of Cannons Creek and Warneet were also sewered with the Eone Pressure Sewer system. Cannons Creek utilises some 200 pressure sewer units and there are over 240 connections in the Warneet installation. The installation required a 250m bore under Rutherford Inlet, a first for Pressure Sewer's in Australia.

Being a 'new technology' in the Australian market place, South East Water have conducted many trials and collected a mass of data for virtually every aspect of system operation, with much of this being published including the impact on wet weather on the flows experienced in a pressure sewer system and some useful operating and maintenance data illustrated below.



“The project has been a great success with the pressure sewer technology proving to have great advantages over gravity sewers when used in areas with a topography and geology such as Tooradin”

Greg Mann – South East Water Ltd.

Following 62 months of operation, the Tooradin system is showing a mean time between service calls of 12.7 years.

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LPS System Repairs & Service Calls Annual Report

Report Period 1/7/2005 to 30/6/2006	Number of Pump Units Installed	Year of Installation	Total Number of service calls to the LPS System	Number of service calls as a result of pump components failure (see note 1)	Number of service calls to faults not attributed to pump or reticulation system (see note 2)	Number of service calls to faults or repairs to reticulation system (see note 3)	Average cost to maintain & repair each pump in system per annum (SAUD)
Tooradin	273	Nov 2001	30	19	10	1	65.68
Warneet	241	Aug 2003	25	14	9	2	67.63
Cannons Creek	200	Dec 2003	9	7	2	Nil	61.00
Bittern	3	Jun 2004	Nil	Nil	Nil	Nil	Nil
Portsea	4	Nov 2004	Nil	Nil	Nil	Nil	Nil
Narre Warren	2	Jun 2005	Nil	Nil	Nil	Nil	Nil
Somers	2	Sept 2005	Nil	Nil	Nil	Nil	Nil
Total	725		64	40	21	3	\$64.77 average per pump per annum

Note 1 – Pump component failure includes all faults associated with the pump unit including: pump, control panel and tank

Note 2 – Service calls to faults not attributed to pump or system reticulation include such things as: low voltage relay operation (i.e. low voltage in power supply), home owner has accidentally turned off the circuit breaker to the pump unit, blocked house drain.

Note 3 – This includes repairs to the reticulation system as a result of accidental damage to the system and or flushing of system.

The operating cost data was provided by South East Water's service provider and provides a detailed breakdown of the number of service calls per Pressure Sewer system and the average cost per lot to operate the system, an average cost of \$64.77 per annum is

significantly below the \$100.00 per property per annum estimated by South East Water during the Tender evaluation period and approximately 40% of the cost to operate and maintain the gravity sewer system per property per annum.

With more than 5 years of operating data South East Water's Tooradin Pressure sewer system is the benchmark for Pressure Sewer operating data in the country.

“The Tooradin project has proven beneficial for all concerned – residents industry and the environment and is a great example of where an innovative solution can deliver financial, environmental and social benefits.”

Greg Mann - South East Water Ltd