



### **Coomoora Road Reserve Stormwater Harvesting Project**

**Hugh Williamson<sup>1</sup>**, Murray Powell<sup>1</sup>, Omid Sayar<sup>1</sup>, Lars Hengren<sup>1</sup>, Jack Chittenden<sup>2</sup>, Martin Wong<sup>2</sup>, Maree Keenan<sup>2</sup>

<sup>1</sup>*Optimal Stormwater, Chatswood, Australia,* <sup>2</sup>*City of Greater Dandenong, Dandenong, Australia*

The City of Greater Dandenong plans to build a SWH System to supply the majority of the irrigation demand at Coomoora Road Reserve as part of Melbourne Water Living Rivers Program. The reserve is located at 28-30 Coomoora Road, Springvale South, and the upgrade involves a pipe diversion from an existing Melbourne Water 1650 mm  $\varnothing$  reinforced concrete pipe located along the entrance to the reserve. The Coomoora Road Reserve irrigation system requires 5.5 ML/year and has two sports fields to irrigate. The existing irrigation system is in good condition and is proposed to be retained. The irrigation system presently runs off pressure in the potable mains.

Following a two stages scoping study and in consultation with internal stakeholders by Council, Coomoora Road Reserve in Springvale South was identified as the best site for a Stormwater Harvesting System by Council. Optimal Stormwater subsequently won the detailed design of the project and validated the catchment size with GIS data and found that the catchment area was 259 hectares rather than the original 57 and 73 hectares estimated.

Melbourne Water provided in principle support for the design of a GPT on the line. The CDS Unit is the premium GPT model for environmental protection and for reliable extraction for stormwater harvesting schemes. Based on the 259 hectare catchment size and characteristics, an estimated 150-200 tonnes of pollutants (including suspended solids and gross pollutants) are expected per year and the cleaning frequency is expected to be monthly and undertaken by Council's regular GPT maintenance contractors. Without quality upstream primary treatment, all stormwater harvesting systems risk failure in the future. This GPT would also lessen Melbourne Water's maintenance burden associated with cleaning the Cheltenham Road basin downstream.

The reliability of most stormwater harvesting schemes is limited by either the OFFTAKE or the GPT. Hydraulic structures that block or clog or bypass early, or fill with sediment and then fail to reliably obtain the water, are a poor solution. GPTs that block or fill quickly are an equally poor solution, since once they block they either send polluted water to harvesting, or all the water to bypass, which are both undesirable outcomes.

Finally, it is always desirable where possible to enhance the downstream environment as part of the project, as well as harvest the water. So, if you can achieve two desirable outcomes in one project, then this gives the greatest cost benefit for Council.