

# **AN INNOVATIVE CONCEPT DESIGN FOR STORMWATER MANAGEMENT IN ALBANY, WESTERN AUSTRALIA**

Rob Braaten, Kathy Meney, Peter Adkins & Richard Freeman

Syrinx Environmental PL

Development of an entertainment centre, waterfront precinct and the Anzac Peach Park along the foreshore of the Albany, Western Australia, provides an excellent opportunity to address pollution of Princess Royal Harbour through stormwater discharge. Currently the majority of central Albany's stormwater drains directly into the harbour via several large pipes running through the development sites. Princess Royal Harbour has a long history of nutrient and metal contamination with many of the worst point sources having been addressed in recent years leaving urban stormwater as one of the largest remaining pollutants.

This paper describes development of a concept design, in partnership with the City of Albany, for a comprehensive and best practice stormwater management system for the city. The design consists of a range of short, medium and long-term strategies including:

- Surface treatment wetlands in the Anzac Peach Park and nearby rail reserves;
- Sub-surface biofilters in the Anzac Peace Park'
- Splitter boxes to bypass good quality water and maximize treatment efficiency in the wetlands'
- Vegetated street-side swales throughout the catchment for detention and infiltration'
- Reinstatement of the original creek through the centre of town via a constructed rock cascade down the centre of Albany's main street;
- Re-use of treated stormwater.

The system should reduce nutrient and contaminant discharge to the harbour by up to 90%, provide substantial amenity benefits to Albany and link the new waterfront development to the central business district through corridors of green.

The paper describes the design process, including:

- Background investigation;
- Sizing and scoping of treatment wetlands, swales and biofilters;
- Contaminant modeling;
- Consultation with city technical and political staff; and
- Final landscape, vegetation and hydraulic design.