

RESEARCH DIRECTIONS

Stormwater quality improvement

Chris Derry from the School of Science and Health UWS, and Bhakti Devi, Project Manager of the City of Sydney's Decentralised Water Master Plan, are collaborating on research designed to develop a monitoring and evaluation framework for assessing catchment scale impact of stormwater treatment using bio-retention units, popularly known as 'raingardens'. The aim is the improvement of the quality of the City's stormwater prior to its release into iconic waterways such as Sydney Harbour and Botany Bay.

'Sydney's water demands have already reached the capacity of the supply system and future shortages may be exacerbated by global climate change', says Chris. 'Desalination has been instituted as a contingency measure, but the new \$1.9 billion plant has received public and political criticism relating to cost and environmental impact. An alternative is recycling of sewage effluent which also faces the challenge of public acceptability and needs further research into potential health impacts. This leaves the underutilised but publicly-acceptable option of stormwater recycling which has recently been identified by the Prime Minister as a viable measure warranting urgent attention. The need to utilise this resource has long been recognised in scientific literature, but a lack of research on potential decentralised treatment options for stormwater containing chemical and bacteriological pollution from road and paved-area runoff has proved an impediment to progress'.

This project will ultimately enable the decentralised treatment effectiveness to be monitored and offer potential for linking with other local government, land and water-care groups in a major regional research project aimed at increasing availability of local recycled water supply and reduce the reliance on potable mains water supply.'



The performance of decentralised bio-retention units will be assessed in terms of their ability to remove unwanted substances from stormwater, and indicators for future performance monitoring identified. Raingarden monitoring ports have already been designed at UWS and patenting is under consideration. 'Ultimately a best-practice system for on-going monitoring and assessment of the units will be handed over to Council. This will include decision trees for intervention in the interests of water quality upgrading within the framework of a sustainable unit management and maintenance cycle', said Chris.

Project Title: Developing a monitoring and assessment framework for decentralised stormwater quality-improvement systems under the Sustainable Sydney 2030 Plan

Funding has been set at: \$40,000

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