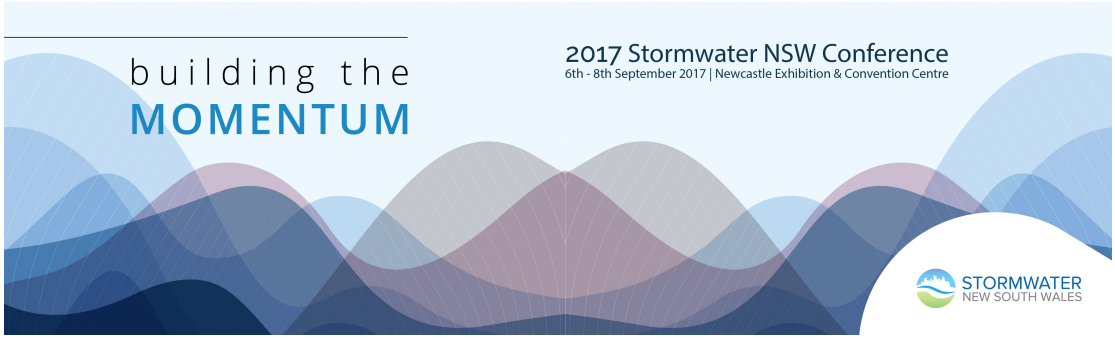

Can MUSIC Reliably Predict Gross Pollutant Loads in Urban Catchments? Should it be Used to Forecast the Maintenance Requirements of Gross Pollutant Traps?

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Understanding the maintenance needs of existing gross pollutant traps (GPTs), including trash racks and vortex screening devices, is an important but challenging task for many local governments around Australia. With this information, managers can take steps towards securing the funds needed to maintain devices in a functional condition, thereby ensuring the delivery of their important pollution prevention roles.

One approach that we've seen applied in several local-government GPT audit projects recently involves estimating annual pollutant loads for device catchments, including gross pollutants, using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC). The resulting estimates are then compared against the known hydraulic and pollution capture capacities of devices (e.g. using proprietor-specified nodes), to derive annual clean and inspection frequencies.

While there is merit in this approach, it is subject to a number of methodological sensitivities including:

1. A hydrologic model that draws on the results of a limited study and dataset to estimate pollutant loads for urban catchments (Alison et al., 1999); and
2. GPT nodes that specify the hydraulic and pollution capture capacities of devices based on similarly limited and often laboratory-controlled investigations.

Thus, it does not seek to understand what is happening with devices once implemented in their environment (e.g. how they respond to their catchments through time) and consequently, it is unlikely that it can provide information that reliably reflects their on-the-ground outcomes. This information is vital for understanding and meeting their maintenance needs.

This presentation will explore current approaches to forecasting GPT maintenance in Australia. It will then describe what we believe is a best practice approach that draws on data collected through scheduled maintenance and monitoring programs. It will also provide an example of how this data can be collected cost-effectively within an automated online asset management system (Assetlogue) to streamline the collection process and improve data quality.

We believe the approach will allow for the reliable forecasting of existing GPT maintenance that may improve their stormwater quality outcomes and lead to

significant savings in maintenance costs. It will also provide a means of predicting how existing GPTs accumulate pollutants in their storage components in response to their catchments, information that may be subsequently used to model the maintenance requirements of proposed GPTs.

Allison, R. A., Walker, T. A., Chiew, F. H. S., O'Neill, I. C. O., & McMahon, T. A. (1998). From roads to rivers: gross pollutant removal from urban waterways.