Willoughby Council LGA wide integrated water management strategy

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Abstract Overview:
In recent decades Willoughby Council has constructed stormwater quality projects including GPTs, stormwater harvesting projects like the award-winning Concourse development, and water efficiency measures across their operations. However relative to other Councils, there is much more than can be achieved and this paper outlines the steps taken to improve.

Stormwater pollution affects Council's local water quality and Council monitors this regularly, publishing results in an annual report on the health of its waterways. Council also invests in bushland and creek maintenance, but water quality management in the upper catchment, including WSUD, GPTs and development controls are lacking.

According to NSROC 2007/2008 Figure 31: Performance and expenditure relating to Gross Pollutant Traps within the NSROC region, Willoughby Council had 6 GPTs, North Sydney 25, Lane Cove 4, Hunters Hill 31, Ryde 27, Ku-Ring-Gai 131 and Hornsby 371. As a percentage, Willoughby Council only had 1% of all the GPTs in the NSROC area, despite having 3.5% of the land area.

In the 2016/2017 Waterway Health Report Card two of Willoughby's major developed catchments of Scotts Creek at Muston Park and Sugarloaf Creek at Butt Park received the lowest rankings of D, indicating probable severe organic pollution; seven of Willoughby's developed catchments received the second lowest ranking of C, indicating probable moderate organic pollution; and only one of Willoughby's catchments received the second highest ranking of B, indicating probable minor organic pollution.

This paper outlines the steps taken to improve the overall water strategy for Council through a range of methods and will assess the effectiveness of the strategy.

Objectives:
One of the outcomes listed in the Willoughby City Strategies is item 2.1.3 Reduce Pollution, which Council has identified the 'Use of Gross Pollutant Traps to reduce pollution in Willoughby's natural ecosystems' and 'explore alternatives to recycle water where possible, for example the on-site detention tanks at The Concourse'.

Willoughby Council have installed 10 GPT assets, were handed over 2 GPT assets and installed 2 stormwater harvesting projects. Council are now working on LGA-wide stormwater quality improvement strategy and improving their overall water quality management policy position for developments and Council activities.

Method:
Council had a feasibility study of multiple stormwater harvesting sites across the LGA undertaken by Sustainable Solutions International (SSI) which identified 11 sites for potential stormwater harvesting projects. Council decided on proceeding with the detailed design for Artarmon Reserve.

The auditing of Willoughby Councils 10 GPTs was undertaken by Optimal Stormwater for Council along with concept designs for 10 additional stormwater quality improvement projects throughout the municipality.

The Water Management Strategy was developed by REIDenvironmental to combine, strategise and implement the various actions required. This included catchment analysis, institutional capacity building and project managing contractors to implement works.

Results:
GPTs installed in the 1990s were found to require upgrading due to failures in design and long term wear and tear. New GPTs were identified for design and construction within the annual budget.
The maintenance of the existing systems was carried out reactively, based on complaints, so the GPTs that were out of sight were neglected and bypassing frequently. This was changed to a regular inspection regime and a dedicated budget amount for cleaning each year.
Along with GPTs, a broader WSUD approach was adopted and included in Council own operations strategy and the DCP, to make it consistent with other Council in the region and easier for developer to understand and therefore implement.

A stormwater harvesting system at Artarmon Reserve was completed in 2017 but like the Concourse, has had commissioning issues associated with incoming water quality and reliability for irrigation.

Conclusion:
Council's ambition to manage the catchments and protect the waterways has been undertaken on an ad hoc basis and as such, responsibility for managing it has fallen between different groups. The strategic approach outlined here aims to ensure ongoing improvement to GPT and WSUD maintenance and to increase Council's coverage of catchment pollution.