Sustainable Water Management in the Duck River

Council Name: Auburn, Parramatta, Bankstown City Councils

Web Address: www.auburn.nsw.gov.au

Size: 171 square kilometres (combined)

Population: 401,103 (combined)

Abstract: The Duck River catchment is a highly urbanised catchment covering 40 km^2, and is one of the largest river systems in Sydney's Western Suburbs. Auburn, Parramatta and Bankstown City Councils are in the process of completing a range of interlinked projects to implement sustainable water management practices in the catchment.

The on-the-ground projects are projected to save approximately 71.6ML/year of drinking water by substituting drinking water with stormwater, river water and recycled water. Auburn has installed a golf course stormwater harvesting system including six ponds to collect stormwater from three residential catchments. Parramatta has completed a water extraction and filtration system, connections to recycled water and constructed new stormwater storage facilities to enhance water quality and reduce downstream flooding. Bankstown has commenced capital works to capture and store stormwater from flood and high runoff events to replace potable irrigation of playing fields.

Background:

The 'Sustainable Water Management in the Duck River Catchment' project aims to improve management of the water cycle within the Duck River Catchment across Auburn, Bankstown and Parramatta local government boundaries. Before this project, each council had been addressing water management independently in response to various drivers including council water saving action targets; the National Water Plan Blueprint; Sydney Metro CMA targets amongst others. However, an integrated total catchment approach in managing the water cycle in the Duck River Catchment presents an opportunity to expand upon traditional water management thinking to holistically understanding and sustainably managing the total catchment water cycle.

Implementation:

The project was funded by NSW Environmental Trust grant for $1,829,100 (including $1,350,000 for capital works) over 3 years. The project was overseen by a project manager with a joint officers' committee to co-ordinate actions between the councils.

The project has been designed to develop prioritised on-the-ground works following a process of catchment modelling, environmental study, stakeholder consultation and collaborative decision making.

Stage one:

- Partnership agreement, steering committee & project team
- Water balance investigation, options analysis and modelling
- Workshops on water cycle management
- Stakeholder and community engagement

- Monitoring and evaluation framework
- Priority of works

Stage two:
- Design and construction tenders for priority works
- Monitoring and evaluation
- Integrating water management practices into council operations and procedures

Stage three:
- Finalising project works
- Post implementation review
- Promotion
- On-going monitoring & evaluation of project

The overall project supports each council's Community Strategic Plans aims.

Outcomes:
This project has been particularly successful in achieving the water savings and water quality objectives. These projects are projected to save approximately 71.6ML/year of drinking water per year.

Auburn has installed a golf course stormwater harvesting system including six ponds to collect stormwater from three residential catchments to the east and from the mixed industrial-residential catchment to the south. Auburn has installed two gross pollutant traps to treat the stormwater from both catchments. The stormwater harvesting system is designed to meet approximately 72% of the irrigation demand, representing a potable water saving of 33 ML/y.

Parramatta's system at Horlyck Reserve involves extracting water from the Duck River, treating it and then using this water for irrigation purposes. Approximately 8.5ML/year of potable water will be saved.

Parramatta's Granville Oval Irrigation is now connected to recycled water the Rosehill Camellia recycled water pipeline. Approximately 9.6ML/year of potable water will be saved.

Parramatta has also completed a pipeline to connect the Woodville Golf Course irrigation system to the recycled water tank and constructed new stormwater storage facilities to enhance water quality and reduce downstream flooding. Approximately 10.9ML/year of potable water will be saved.

Bankstown has commenced capital works on Jim Ring Reserve to capture and store stormwater from flood and high runoff events and to replace potable irrigation of playing fields. This will also result in a reduced impact of floods on downstream natural creek environments and re-introduction of natural wet and dry cycles, reduced pollutants and connection of existing irrigation infrastructure to a harvested water system. Forecast savings are 9.6 ML/year.

The project has also achieved longer term goals:
- A study of the catchment's flows and water cycle
- Development of a catchment management framework for future planning and management
- Improved community awareness of water management
- Improved public amenity

Future:
Each council has hugely broadened its experience and skills through this project, with technical officers learning about collaborative project management, community education, engagement, promotion. The

officers have also learned the importance of co-operation between council units to share skills, achieve holistic outcomes for the community, save on duplication and to develop longer lasting programs.

The primary driver to maintain the programs and benefits of this project is the Integrated Planning and Reporting Framework. By linking each component of the grant project to specific Strategic Themes within each council's Community Strategic Plan, council can ensure that it is prioritised and funded in each operational year. The partner councils will ensure the ongoing benefits by maintaining the infrastructure installed and continuing to monitor usage and impacts on environmental flows and water quality.

The information developed for the environmental studies, monitoring and the catchment management framework will be shared across the councils and used for future planning and management.

Given the large scope of the grant project, it may have been advisable for the project to be managed by a broader team of officers representing each council. Each team member would be assigned specific responsibilities relating to areas such as community education and engagement, environment study, management frameworks and engineering. The project manager would be able to focus on the overall outcomes of the project, budget management and reporting.

References: http://www.auburn.nsw.gov.au/Environment/Council/Pages/Projects.aspx#duckriver

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