

TANKS-A-MILLION: COMMUNITY ENGAGEMENT TO INCREASE LOCAL ACTION

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Abstract

This paper will present the theoretical framework for the implementation of an urban water conservation and reuse project within an infill residential area. The *Tanks a Million* project is an initiative arising from a State Government funded program to test the effectiveness of 'communities of practice' to change social and organisational norms relating to environmental management. The project seeks to engage the residents of West Pymble to increase their uptake and use of rainwater tanks and other water and energy saving practices via informal social networks, much like a book club or Tupperware party. Environmentally the outcome of the project seeks to reduce the use of potable water and to lessen the frequency and duration of stormwater discharges into the local waterway. Informing the project, a survey of the community was undertaken in 2010 that identified around 20% of the households has rainwater tanks, though the water was mostly used for garden and outdoor use. Given the limited applications of this water the environmental outcomes are minor. The project aims to bring the uptake of rain tanks closer to 80% and expand the use of this water within the households. Further the hydraulic and water quality benefits will also link with a regional stormwater reuse scheme at the local park. The social engagement of the project is anticipated to start in October 2010 and will run for 12 months.

Introduction

A central aim of environmental education is to change social norms towards more sustainable behaviours. There is no single method that will achieve this result and there is a responsibility for all those engaged in environmental education to trial, test and evaluate a broad suite of techniques. The *Tanks a Million* project is a community engagement strategy aimed at increasing water saving practices through the use of informal social networking. This complements other formal and broad scale education programs by Council, Sydney Water and others that form the broader suite of approaches necessary to inform and influence behaviour.

The premise of this project draws on the need to take a more holistic approach to catchment management that actively engages private households and land owners to re-thinking community and institutional norms around water conservation and re-use. This is a core element to Council's integrated urban water management strategy that recognises the important role of individuals as part of collective action. This responds to the trans-disciplinary approach as advocated by Brown and others within the Urban Water Governance Program (<http://www.urbanwatergovernance.com/> - accessed 15 September 2010) and also the use of informal education and learning promoted by Flowers et al (2009).

Funding and support for this project has come from a significant grant from the NSW Environmental Trust awarded to Ku-ring-gai Council in collaboration with Mosman, City of Sydney, Wyong, Orange-Bathurst-Dubbo and Coffs Harbour) and the NSW Department of Environment, Climate Change and Water (DECCW). The aim of the grant is to strengthen community engagement and education (CEE) as tool for improved sustainability outcomes in local government and embed sustainability (and community engagement and education for sustainability) into core organisational practices through a process of cultural change. In part this seeks to overcome the current problem of running many unrelated environmental community engagement and education projects that are perceived as marginal activities with minimal organisational buy-in and no longevity beyond their project life.

As part of the *CEEchange* program, each partner council is required to develop a pilot project linked to their organisation's strategic plan. For Ku-ring-gai Council this is the *Tanks a Million* project. It seeks to create a community of practice with the aim of saving a million litres of water per year through increasing the uptake and efficient use of rainwater tanks supported by other water saving practices by Council.

What is a Community of Practice?

The concept of a Community of Practice was coined by Etienne Wenger and is based on social learning theory. It is where a group of people who share a concern or are passionate about something and who voluntarily interact regularly as peers to learn, to solve problems and to take action (Wegner 2006). Social learning theory is based on the premise that if people observe positive and desired outcomes in other people's behaviour they are more likely to model, copy and adopt the behaviour themselves.

A Community of Practice has three crucial characteristics:

1. It has an identity defined by a shared domain of interest (in the *Tanks a Million* case water conservation and sustainability) where membership implies a commitment to the **domain**;
2. In pursuing this domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other, forming a **community**; and
3. The community develops a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared **practice**

Within the parameters of these stages there are many approaches that can be undertaken to facilitate the informal education process. Flowers et al 2009 identified seven features that can characterise informal education that provides some broad framework for this project as below. This informality is often one not entertained by traditional government programs due to the flexibility and fluidity not least the directions taken by the participants can be unexpected and therefore not planned.

<p>Seven features of information education</p> <ol style="list-style-type: none">1. it can take place in a variety of physical and social settings2. there is no regular or prescribed form3. learning may initially appear to be incidental but is, in fact, planned and monitored4. timescales are highly variable5. learning is negotiated through collaborative forms of working6. it is dialogical7. and it can involve a variety of ways to facilitate learning
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Tanks a Million

The *Tanks a Million* project will help to create a Community of Practice in the West Pymble community to facilitate collective learning and grassroots activities which change behaviour and social norms around water conservation and sustainability. The project framework and methodology follows social marketing principles (McKenzie-Mohr 2008) that involve:

1. Selecting desired behaviours
2. Identifying barriers and benefits

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3. Developing strategies to reduce barriers and increase benefits
4. Plotting the strategy, and
5. Evaluating the strategy post-implementation.

Following these steps, the project is seeking to explicitly understand the community's capacity for response or 'receptivity' rather than primarily focusing on application of different policy tools for enabling change (Jeffrey and Seaton 2004). While the aim is an increase in rain tanks (informed by the benefits anticipated by hydraulic modelling), what the community actually want may be very different. We are proposing to target existing social networks to engage participants. This will rely on residents meeting together in small groups of friends, family or work colleagues, hosted by group convenors, to discuss water issues and water-saving behaviours in their households, communities and catchment. The project will support the groups with a program of discussion topics, water information packs and financial assistance (via a competitive rebate scheme) for the installation of rainwater tanks, rain gardens and other water efficiency and catchment health practices. As part of these conversations it is anticipated that other sustainable practices will be raised such as energy efficiency (being topical in the media at present) and actions to promote these initiatives will also be incorporated as part of the supporting materials (through not grants).

It is anticipated that this approach will overcome the current demographic bias in information delivery by councils. Traditionally, information sessions and workshops are attended by older persons. Qualitative research via focus groups undertaken for the GreenHome Water Project (Dean 2007) indicated that generation x and y favour social settings and events, informal learning, financial incentives and competitions. We hypothesise that these variations in preferences apply to different segments of the baby boomer demographic also.

As part of the pre and post intervention, local focus group work and informal café conversations are proposed to test assumptions and clarify survey findings regarding barriers at the beginning of the engagement and implementation stage. During the communities of practice phase, group convenors will be asked to send Council a record of their group's discussion and actions, to foster learning and exchange. We will also facilitate and support a social networking platform to trial the efficacy of web technology to engender community collaboration within and between groups on the local/neighbourhood scale. The social network platform will also serve as a reporting tool for group convenors, and an evaluation tool for the project.

This process has some precedent and we intent to draw on these learning's. In particular we will be looking to the Watermark project and the Stringybark Creek. The Watermark project (<http://www.watermark.org.au/> - accessed 15 September 2010) involved over 200 small groups to create a shared community vision for the future, a program of guiding principles, a decisive action on water, and an agreement to adopt solutions for water on many levels — households, local communities, regions, states and nationally. In the Stringybark Creek (<http://www.urbanstreams.unimelb.edu.au/> - accessed 15 September 2010) project an environmental benefits calculator was used to prioritise project based on community input and suggestions.

One of the factors we will be exploring is whether the priority and emotional intensity related to the management of water has abated now that Sydney is no longer experiencing drought. We hope to discover if the community sees water as a priority issue in an urban/sub-urban context or prefers to consider it in the context of broader sustainability: for example the conversations may turn to solar hot water, photovoltaics and energy efficiency. Such observations would draw on the results of the Department of Environment, Climate Change and Water's Who Cares about the Environment surveys (<http://www.environment.nsw.gov.au/community/whocares.htm> - accessed 15 September 2010).

The study catchment

The study catchment for this project is based in West Pymble within the Quarry Creek sub-catchment of the Lane Cove River (refer to Figure 1), this is located approximately 12 km to the North of Sydney. The catchment

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is dominated by three landuse types. Low density residential development of approximately 900 houses and a small shopping village covers approximately 50% of the total 120 hectares and is largely located on the flatter and upper reaches of the catchment. The central area of the catchment incorporates a regional park, Bicentennial Park. The lower portion of the catchment dominated by steep bushland and abuts Lane Cove National Park.

Background to the project has involved undertaking a detailed investigation of water management options for the catchment (Ku-ring-gai Council 2007). This included modelling the water quality and hydraulic impacts of various water sensitive urban design strategies. One of which was the retrofitting 80% of households with 5,000 litre rainwater tanks for various non-potable uses and two regional stormwater harvesting projects in Bicentennial Park. Modelling calculated that these measures would have substantial water quality benefits and would also return to the flow in the creek towards predevelopment conditions, both positive environmental outcomes to an otherwise degraded urban creek.

To date Council has undertaken a number of projects in the catchment in response to the study. These include the construction of: a vegetated roadside filter swales along Invarellan Road; a biofiltration garden in Kooloona Avenue; and the first of the regional stormwater harvesting projects at Lofberg oval within Bicentennial Park (see Figure 1).

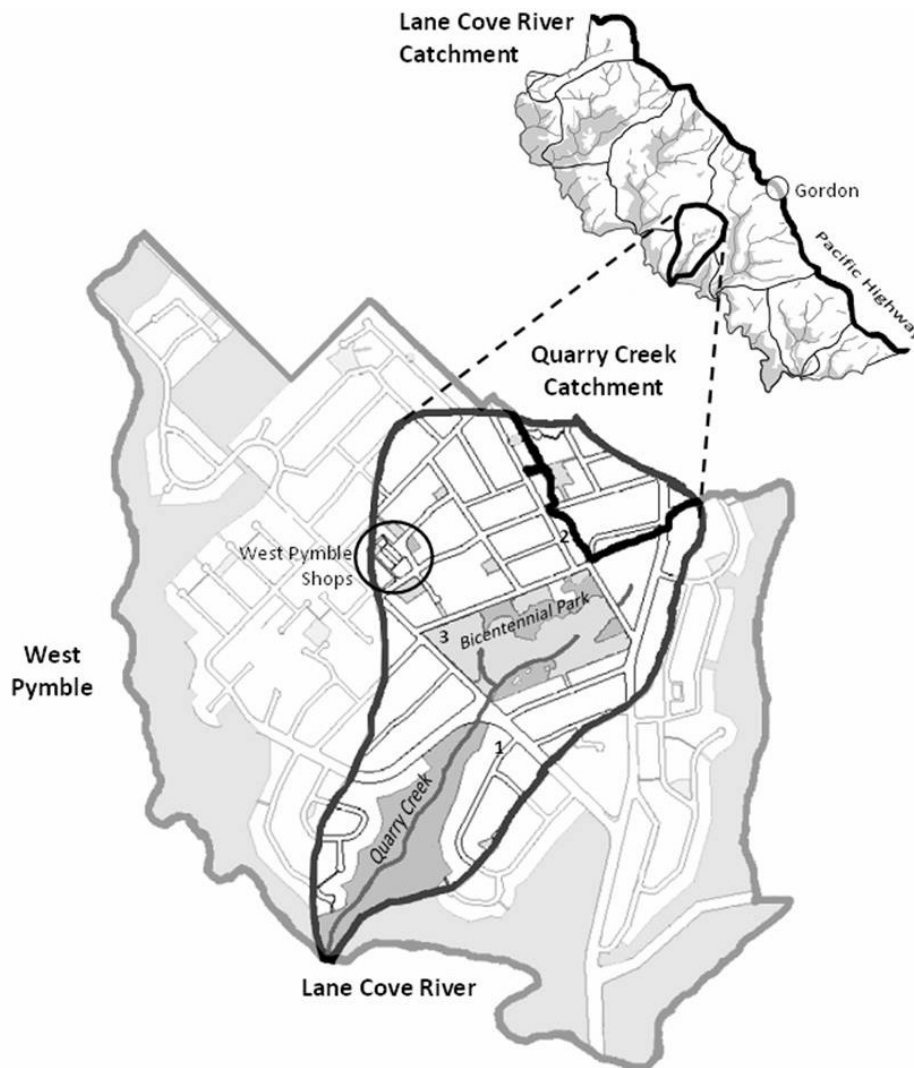


Figure 1: Location of Quarry Creek Catchment and West Pymble (faded), in relation to the Pacific Highway, Gordon town centre and the Lane Cove River Catchment within Ku-ring-gai Council.

Bushland areas are demonstrated by darker grey shading, parks and sporting fields are shaded light grey. White areas indicate low density residential land use and roads. The locations of the West Pymble shopping village and Bicentennial Park are shown. Regional water sensitive urban design features include:

- 1 – Kooloona Crescent Rain Garden;
- 2 – Invarellan Road vegetated swales;
- 3 – Lofberg Oval stormwater harvesting.

What we know about the local community?

Early in 2010 Ku-ring-gai partnered with the NSW Office of Water to run a pilot promotional project as part of the *Water for Life* campaign. This focussed on promoting council's stormwater harvesting initiatives, using the *Water for Life* branding to increase community awareness of these projects. To gauge the success of this

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promotion a community survey was undertaken that also drew of previous surveys by Council (e.g. Brown and Davies 2007). Residents were asked a range of questions including their knowledge of council's and the State Government's water initiatives, their own uptake of water-saving technologies.

The results reported that 21% of households in Quarry Creek catchment had at least one rainwater tank (unpublished data 2010). Many of these have been funded by the State and Federal government rebates including the NSW Home Saver Rebates (via Sydney Water) and the National Rainwater and Greywater Initiative and their predecessors. Based on 2007 data this is nearly three times the Sydney average (7.6%), nearly double the capital city average across Australia (12.5%) and greater than the NSW average (16.5%). However the uptake and also use of rainwater is well below the level required to achieve the desired improvement in the flow regime for Quarry creek.

As to the barriers, the survey found that perceived capital and maintenance costs, lack of knowledge and information, and access to skilled professionals influenced those that had not yet installed a rainwater tank. Other less reported issues included space requirement, aesthetics, specific retrofitting costs and skills (where the water was to be used for purposes other than garden), uncertain government policy, and limited rainfall. The *Tanks a Million* project will act on the findings of the survey work though it must be stated that the project is not about providing at no cost rain tanks to households as this is unlikely to modify behaviour, not necessarily change social norms nor would be a viable policy outcome for local government.

With this in mind the project's focus is on social learning that has a significantly longer life than the 12 months of the "formal" intervention or facilitation. This recognises that changes in behaviour are likely to occur over many years (and possibly generations) and that this does not necessarily rely on physical infrastructure such as rain tanks. Furthermore, as reported in the NSW Government's *Who cares about the environment* survey series there is likely to be a section of the community (around 27% of the population) that will be reluctant to change irrespective of the change being initiated by their peers (<http://www.environment.nsw.gov.au/community/whocares.htm> - accessed 15 September 2010).

Outcomes

Beyond the on-ground outcomes, the Tanks a Million project is closely linked to other *CEEchange* program activities, each designed to achieve the program aims stated above, and will now each be discussed in turn.

The Tanks a Million project is underpinned by internal and external reference groups. The internal reference group has vertical and horizontal representation from within the council, from executives to field staff. The role of the internal reference group is to provide strategic advice and diverse inputs on the direction and positioning of the project; to explore issues around Council's sustainability governance structures and the integration of CEE activities; and to explore how Council can work more collaboratively to deliver CEE and sustainability initiatives.

The external reference group has representation from staff within Council and the Ku-ring-gai Community and is chaired by a Councillor. The role of the external reference group is to provide strategic advice and diverse inputs on the direction of the project and to foster community involvement.

These two reference groups are intended to facilitate the strategic positioning of the *Tanks a Million* project within Council and to foster the integration of CEE activities across Council. They are intended to last beyond the completion of the *CEEchange* program and hold responsibility for other CEE initiatives taking place within Council. Should it be deemed successful, the community engagement model being trialled through the *Tanks a Million* project will inform the design of other CEE initiatives.

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Mirroring the Communities of Practice approach adopted for the *Tanks a Million* project, internal council staff have recently formed the Ku-ring-gai Greenbacks (or KGB). This is an internal staff network focused on implementing activities that engage staff in sustainability initiatives and improve the sustainability performance of Council's operations. Membership is voluntary and informal and the network's activities complement Council's formal sustainability programs, policies and procedures. As part of the *CEEchange* program, external specialist support will be offered to the KGB as they extend their membership and influence across Council. The adoption of this approach for both external community and internal staff engagement will facilitate learning across both communities; and will simultaneously build capacity within the Ku-ring-gai community and Council around environmental sustainability.

Learnings and outcomes from the *Tanks a Million* project will also inform the development of Council's Community Education and Engagement (CEE) for Sustainability Action Plan, aimed at guiding the integrated delivery of CEE within council and in the community. The consultation process for the development of this Action Plan will involve council staff involved in sustainability and / or community engagement; the *Tanks a Million* reference groups; the KGB; and finally Council's executive. The Community Water Action Plan, developed as part of the *Tanks a Million* project, will assist Council in identifying the priority stormwater projects to be included in Council's CEE Action Plan, and will create an opportunity for the community to work collaboratively with council to deliver these projects. Combinations of all these activities within Council are designed to facilitate a process of organisational cultural change which leads to favourable conditions for improved council and community sustainability outcomes.

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