

# Effective Environmental Education

## Working with the Community & Small Business<sup>1</sup>

### Introduction

The Effective Environmental Education Project measured changes in attitudes, values, knowledge and behaviour, as a result of innovative localised education campaigns. This project is important because it:

- Established a particular before and after approach to develop education activities, identify key campaign messages, and assess their effectiveness in changing attitudes, values, knowledge and behaviour;
- Resulted in a series of highly targeted education resources specific to local catchment areas, and was informed by community values and knowledge;
- Measured impacts which went beyond environmental attitudes and knowledge, into changes in behaviour;
- Provided evidence to assess the relative usefulness, benefits and costs associated with different pollution prevention activities.



'Greetings from Bronte' postcard – identifying the catchment and where stormwater goes.

The project designed, conducted and evaluated education interventions across four sub-catchments in the Waverley Local Government Area (WLGA).

It sought to improve the quality of water at the local beaches in Waverley and the Centennial Park ponds.

The project employed social research, environmental science, marketing and engineering expertise to develop and guide a range of education strategies to positively impact on behaviours to reduce stormwater pollution.

This original and highly significant demonstration project established and measured the value of non-structural or source control solutions to stormwater pollution.

It identified and analysed the relationships that exist between environmental values, attitudes, knowledge and behaviour.

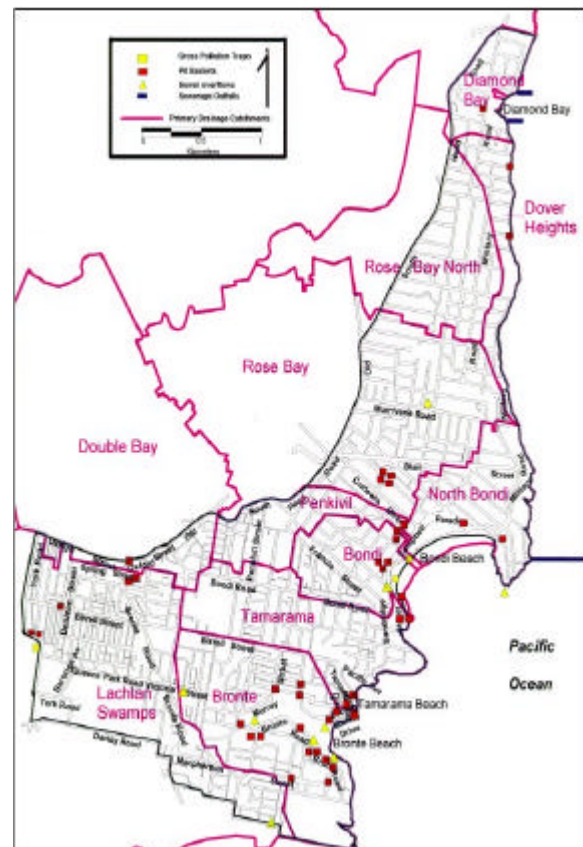
It demonstrated what worked, what did not work and how these approaches could be applied elsewhere.

### Where did we do the project?

Four stormwater sub-catchments were selected across the WLGA. They were in the suburbs of Dover Heights, North Bronte, Charing Cross, and Bondi.

They were chosen because they had:

- clearly defined stormwater catchments;
- different land uses (residential and commercial); and
- demographic characteristics that were representative of the WLGA overall.



<sup>1</sup> The Effective Environmental Education Project was a joint Waverley Council and UNSW initiative, assisted by the NSW Government through its Stormwater Trust Round 2 Grants Program. The project was designed, developed and delivered by the School of Social Science and Policy at UNSW, with a project team headed by Roberta Ryan.

## What did the project involve?

The project was divided into three broad components:

1. *Development, implementation and evaluation of targeted stormwater education campaigns.*

This relied on comprehensive before and after intervention social surveys to identify behaviours which contributed to stormwater pollution.

2. *Installation of a gross pollution control devices at the end of three catchments in Dover Heights, North Bronte and South Tamarama. (Diamond Bay, North Bronte and Bondi/Tamarama sub-catchments). A GPT was already installed in Charing Cross sub-catchment.*

The contents of the GPTs were collected and described to identify the sources and types of pollution in each sub-catchment.

3. *Physical and observational monitoring of pollutants and behaviours within the catchments. This involved a range of techniques, including:*
  - a) Detailed observations to inform the design of the campaigns and to measure their effectiveness;
  - b) The development and application of observational monitoring techniques to catchment issues and polluting behaviours; and
  - c) Street vacuuming to quantify and analyse contaminant loads on road surfaces.

## What did this approach aim to achieve?

1. To develop an evidence base (pollutants and behaviours) about stormwater pollution in the four sub-catchments;
2. To identify key campaign messages, content and strategies that would be effective in each sub-catchment;
3. To demonstrate changes over time; and
4. To establish to what extent these were the result of the education interventions.

## How did we do it?

The project involved extensive social research, physical monitoring and visual audits. One sub-catchment was nominated as a control site – that is, an area where no education activities were conducted.

We conducted household surveys and surveys with small businesses. We developed physical and behavioural monitoring tools, and made systematic observations of resident, business and council activities that impact on stormwater pollution.

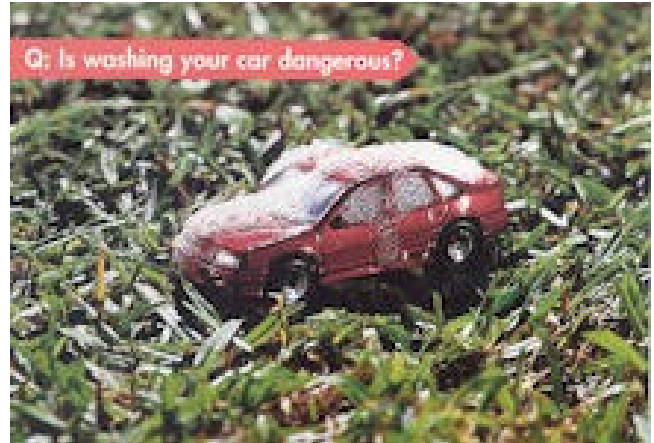
The use of a control site allowed the project to demonstrate specific change. While it is possible to measure changes across all areas, it is not possible to know what changes have resulted from which educational interventions. A control site allows you to compare the degree of changes between 'control' and 'intervention' sites.

It involved selecting four project areas or sub-catchments, one of which represented characteristics of the other three, to become the control site.

The control site for both residential and commercial campaigns (that is, the area where no campaigns were conducted) was Bondi.

Residential education campaigns were conducted in Dover Heights and North Bronte, and the commercial education campaign was in Charing Cross.

This was the basis of the pre and post-test (before and after) control and intervention site project design.



## What did we do with the information?

We used the results of the monitoring and social research activities to design the education campaigns.

We found out about:

- Community demographic characteristics - including gender, building type, dwelling type and catchment. These were identified as key factors affecting behaviour and attitudes.
- A profile of businesses – the types of small businesses, owner-operators, and practices that affect stormwater pollution.
- The perceived and actual causes of pollution – so that the campaign messages start with perceptions and feedback actual causes.
- Important attitudes and values - as these are key triggers to motivate changes in knowledge and behaviour.
- Finding out how people prefer to receive their education messages - to understand the best way to communicate with people.

## Working with the community – the residential campaigns

Each catchment reflected different demographic profiles. Highlights include:

- there were higher proportions of young families in North Bronte, as well as people aged over 65s, retirees and self-funded residents.
- Units and apartment buildings were more numerous in Dover Heights.
- Approximately 45% of residents in the Dover Heights catchment employed a gardener.

Residents in Dover Heights nominated directly addressed mail as their preferred method of receiving information about water quality issues.

Residents in Bronte preferred television and local media, followed by directly addressed letters. Women in Bronte particularly identified community events as effective methods of community education.

People in Bronte rated the pollution of beaches and other waterways as more important than did those in Diamond Bay and Bondi where litter and dumped rubbish was a significant issue of concern.

*Postcard developed for gardeners working in Dover Heights*



When people talked about their environment, in Bronte they said that it was leafy, green and untidy, while in Dover heights, it was neat and tidy.

### All of these influenced what we did and how.

This approach reflects a 'social learning' model. Social learning involves developing community ownership of issues by providing positive feedback on current practices, knowledge and values as well as informing them of relevant changes they could make.

The community education campaigns included:

- A series of catchment-specific postcards (reflecting different specific local values and behaviours);
- Directly addressed letters sent to residents in the targeted local areas;
- Directly addressed letters sent to professional gardeners, strata managers and maintenance staff;
- A separate campaign targeting contract gardeners, including a mail-out and an article in a professional newsletter;
- Activities with school children in Bronte;
- A 'Keeping It Off the Streets!' Party with a kids and family focus, in Bronte.

*Postcard designed as a free give-away, displayed in Charing Cross shops*



*The 'Read Street Leaf Sweep', at the Keeping It Off the Streets! Party*

### Working with small business – the commercial campaign

Charing Cross has a typical range of small businesses in a strip shopping area. They include food, retail, hardware, restaurants and laundromats.

Of the 62 business, the operators spoke 5 different languages, were mostly non-resident in the catchment. They were initially very difficult to engage in the project.

We tried different approaches, before finding one that worked. This was based on the pre-test surveys, observational audits, and talking with businesses. Our approach included using Thai and Mandarin-speaking interviewers, with supporting material translated.

The commercial campaign concentrated on a series of small-scale activities, including:

- information kits;
- directly-addressed letters;
- locality-specific posters and postcards.

Our focus was on telling businesses that their customers were concerned about environmental outcomes and it therefore made good business sense to demonstrate positive environmental behaviour.

We used graphics and non-text based materials as well as directly addressed letters. We emphasised business relationships with customers and their role in the local community.



The campaign was supported by a series of walk-around visits to local businesses, accompanied by representatives from Council. Council also initiated a regulatory approach with 3 targeted audits, and an awards system for positive practices.

We also linked the street party in Bronte by involving two businesses in the event. This provided very positive reinforcement for their appreciation of environmental values of their customers.

### What did the project achieve?

As a result of both education campaigns:

- There were positive changes in people's environmental attitudes and values;
- People's knowledge about urban stormwater pollution increased; and
- There were positive changes in environmental behaviour.

### The residential campaign

- Levels of knowledge increased across each of the study areas.
- The education campaigns resulted in positive changes and improvements in environmental practice.
- The Bronte street party was described as particularly effective because it emphasised community relationships, social norms and neighbourhood responses. This encouraged residents to engage with education messages.

### Examples of measurable changes in behaviour

Practices around home and garden, targeted in education	Before %	After %	Difference
Regularly pick up leaf litter/grass clippings?	82.4	88.1	+ 5.7
Routinely clear leaves and other debris from street gutters?	40.7	60.9	+ 20.2
Compost leaf litter/grass clippings?	37.5	44.3	+ 6.8
Regularly hose down cement areas?	27.8	20.4	- 7.4

### Recall of the community education campaigns was positive.

- The catchment specific postcards were remembered as visually striking and very effective with practical advice that people could relate to.
- The campaigns were reported as effective because they educated people, they were locally targeted, and they influenced people to change their behaviour.

### The commercial campaign

- Businesses in Charing Cross became significantly more concerned about the impact they had on the environment, than did those in Bondi (where no campaign was conducted).
- Charing Cross businesses also became significantly more willing to change business practices to improve water quality.
- 91% of businesses in Charing Cross correctly identified stormwater pollutants, after the campaign, compared with 70% of those in Bondi.
- 41% of businesses reported changing their behaviour after the education campaign. These changes involved practices targeted in campaign messages, such as sweeping up (not hosing down), using appropriate wash bays and bunded areas, and using appropriate waste and water disposal methods.
- Businesses in Charing Cross reported the most effective parts of the campaign were the personal contact and visits, the posters, and directly-addressed letter.

### What did we learn from this project?

- The critical importance of knowing the target audience, to direct education strategies and identify campaign messages.
- Physical monitoring activities inform the content of the education interventions but they can not be used to measure the impacts of the education campaigns.
- The design, implementation and evaluation of the education campaigns across the three catchments cost less than **one** of the three GPTs that were installed as part of the project.
- The maintenance of environmental education is important, and the cost of maintaining the education in the three catchments costs less than the maintenance of their GPTs.
- That well designed and carefully targeted environmental education is more cost effective in the short and long term than the installation of GPTs.
- The importance of evaluation – measuring what we did and how and what changed in terms of environmental knowledge, attitudes, values and behaviour.