Effective Environmental Education: working with the community and small business

A Profile of Key Findings
Aim: To evaluate the effectiveness of non-structural techniques to control stormwater pollution

1. To develop and implement three different community education programs aimed at reducing stormwater pollution at source; and

2. To monitor the effectiveness of these programs through various data collection techniques, incorporating at source and end of pipe measures

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• Different catchment types - land use (residential/commercial), demography.

• Using a pre-test and post-test model this project is an attempt to quantify changes which impact on water quality.

(see map)

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Diamond Bay
Pre-test approaches

• Pilots - Water quality survey (terminology)
  • Stakeholder survey (key community groups)
  • Media survey (communication strategies)

• Visual audits - rangers, and commercial activities (hot-spots, specific commercial activities, etc)

• Gross pollutant trap measures

• Street vacuuming

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Pre-test surveys - commercial and residential (Water Quality Surveys) - issues - sampling, validity...

- Focusing information collection on:
  - Values, knowledge, attitudes, behaviours
  - Factors most likely to impact on behaviours

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**Definition of community**

- All actors who potentially impact on stormwater in a locality
- Beyond residents
- Individual and institutional players
- Harder ‘to-get-at’ groups and individuals

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Strategies for improving the validity of the data

• Get existing available information - social plans, demography, use questions from existing surveys etc.

• Theoretical underpinnings of education, social research and evaluation.

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Pre-Test Surveys

Pre-test surveys provided information which informed the education strategies around the following:

- Demographic characteristics – including gender, building type, dwelling type and catchment
- Identifying the perceived causes of pollution — that is, understanding and pitching the education campaign at current levels of understanding
- Identifying important values — as these may be triggers for motivations behind behaviour change and communication strategies
- Understanding language and knowledge (ie the best was to communicate with people)
- Media preferences.

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Education Strategies

• Directly addressed letters (units/houses)

• Gardeners and body corporates

• Post-cards - locality and local values

• School activities - leading up to the event

• Street event - attempting to develop/reinforce social norms

• Commercial - information, regulation and community processes (combining economic, social and regulatory strategies).

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Targeted Education Interventions

• Significant demographic characteristics - gender, building type, dwelling type and catchment

• Identifying perceived causes of pollution (begin where people are at)

• Identifying important values (motivations for behaviour changes, communication strategies, etc)

• Language and existing knowledge levels

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Post-Test Activities

- Vacuuming
- Gross pollutant traps
- Post-test surveys (replicating pre-test community and small business surveys)

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Contextual factors which may affect the outcomes

• Seasonal

• Organisational communication, keeping (the focus, roles of councillors, staffing)

• Time (evaluate the impacts over time..)

• Structural impediments (land-use, planning, impacts of cars, levels of government, etc.)

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Pre and Post-Test Results

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People changed their attitudes and values as a result of the community education campaigns

Values and attitudes about the environment

Question: ‘We would like to know your opinion on a range of environmental issues. Please indicate on a scale of 1 (strongly agree) to 5 (strongly disagree) whether you agree with the following statements....’
<table>
<thead>
<tr>
<th></th>
<th>Strongly agree/agree</th>
<th>Neutral</th>
<th>Strongly disagree/disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre %</td>
<td>Post %</td>
<td>Pre %</td>
</tr>
<tr>
<td>Industry creates the most pollution</td>
<td>51.0</td>
<td>58.8</td>
<td>24.5</td>
</tr>
<tr>
<td>The government will ensure the environment is preserved for our children</td>
<td>17.0</td>
<td>20.9</td>
<td>15.5</td>
</tr>
<tr>
<td>There are experts who can manage pollution problems</td>
<td>46.0</td>
<td>43.3</td>
<td>25.0</td>
</tr>
<tr>
<td>Individuals should be responsible for the environment</td>
<td>85.0</td>
<td>86.9</td>
<td>5.6</td>
</tr>
<tr>
<td>I am prepared to change the way I do things if it improves the environment</td>
<td>89.6</td>
<td>89.6</td>
<td>4.6</td>
</tr>
<tr>
<td>I believe that technology will solve any environment problems</td>
<td>20.8</td>
<td>20.5</td>
<td>27.0</td>
</tr>
<tr>
<td>My lifestyle has little impact on the environment</td>
<td>23.7</td>
<td>22.8</td>
<td>15.4</td>
</tr>
</tbody>
</table>

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Knowledge about urban stormwater pollution increased as a result of the community education campaign.

Question: Which of the following in stormwater affects the water quality of oceans, ponds and rivers?

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<table>
<thead>
<tr>
<th></th>
<th>Pre-test correct responses (%)</th>
<th>Post-test correct responses (%)</th>
<th>Direction of change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People washing cars on the roads</td>
<td>45.4</td>
<td>63.2</td>
<td>+ 17.8</td>
</tr>
<tr>
<td>Animal (dog) faeces</td>
<td>60.9</td>
<td>76.9</td>
<td>+ 16.0</td>
</tr>
<tr>
<td>Industry putting wastes down gratings/drains</td>
<td>78.3</td>
<td>88.6</td>
<td>+ 10.3</td>
</tr>
<tr>
<td>People putting wastes down gratings/drains</td>
<td>78.6</td>
<td>87.2</td>
<td>+ 8.6</td>
</tr>
<tr>
<td>Oil etc from roads</td>
<td>80.6</td>
<td>86.7</td>
<td>+ 6.1</td>
</tr>
<tr>
<td>Nutrients/fertilisers</td>
<td>71.4</td>
<td>74.8</td>
<td>+ 3.4</td>
</tr>
<tr>
<td>Rubbish/litter washing down drains</td>
<td>96.3</td>
<td>98.9</td>
<td>+ 2.6</td>
</tr>
<tr>
<td>Leaves etc (organic matter)</td>
<td>40.6</td>
<td>43.2</td>
<td>+ 2.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.3</td>
<td>4.8</td>
<td>+ 2.5</td>
</tr>
<tr>
<td>Silt/soil/sand etc</td>
<td>52.0</td>
<td>46.5</td>
<td>- 5.5</td>
</tr>
</tbody>
</table>

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Self-reported behaviour changed as a result of the community education campaigns

<table>
<thead>
<tr>
<th>Practices around home/garden</th>
<th>Pre-test %</th>
<th>Post-test %</th>
<th>% difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regularly pick up leaf litter/grass clippings?</td>
<td>82.4</td>
<td>88.1</td>
<td>+ 5.7*</td>
</tr>
<tr>
<td>Routinely clear leaves and other debris from street gutters?</td>
<td>40.7</td>
<td>60.9</td>
<td>+ 20.2*</td>
</tr>
<tr>
<td>Compost leaf litter/grass clippings?</td>
<td>37.5</td>
<td>44.3</td>
<td>+ 6.8*</td>
</tr>
<tr>
<td>Regularly hose down cement areas?</td>
<td>27.8</td>
<td>20.4</td>
<td>- 7.4*</td>
</tr>
<tr>
<td>Wash car on the street?</td>
<td>37.6</td>
<td>11.0</td>
<td>- 26.6*</td>
</tr>
</tbody>
</table>

* all reflect positive improvements in behaviours targeted in key campaign messages.

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Overall pre and post-test self-reported environmental behaviours

<table>
<thead>
<tr>
<th>Environmental Behaviour</th>
<th>Pre-test Results</th>
<th>Post-test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceptionally low levels of environmental behaviour</td>
<td>11.6</td>
<td>10.7**</td>
</tr>
<tr>
<td>Below average levels of environmental behaviour</td>
<td>43.4</td>
<td>36.9**</td>
</tr>
<tr>
<td>Average environmental behaviour</td>
<td>7.5</td>
<td>11.7**</td>
</tr>
<tr>
<td>Above average levels of environmental behaviour</td>
<td>35.2</td>
<td>19.5</td>
</tr>
<tr>
<td>Exceptionally high levels of environmental behaviour</td>
<td>2.3</td>
<td>21.4 **</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

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Key findings from commercial case-study

• ↑ in concern about environmental issues (20.2% - 9.2%)

• ↑ in concern about environmental impacts of business (40.2% - 19.3%)

• ↑ in knowledge and awareness

• most respondents reported awareness of campaign

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• 40.8% reported changes in behaviour following the campaign

• Observational audits confirmed some changes in practices

• Businesses indicated that changed practices were good for the environment and good for business
Conclusion

Integration of….

• Monitoring of structural and non-structural activities (if there are existing devices the monitoring of them can be very useful additional sources of information)
• Project activities and evaluation activities
• New and existing measures and data sources
• Existing activities of council - build on what is already happening
• Findings into councils’ organisational learning
• On-going monitoring and evaluation into regular council activities - ie. management plans
• Changes in practices in ‘whole of council’ approach

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