



Waste Education Facilities Evaluation Project  
Report April 2005

***Education is Not an Afterthought!***

**Queensland EPA Waste Education Facilities Evaluation Project.**  
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**Acknowledgements:**

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Special thanks are given to Peter Collins, Dave Egan, Tony Shadwell, Sascha Tolsdorf, Des Green, Phil Curran Paula Harrison and Nutana Donaldson for their significant efforts

**About the Title of this report:** “*Education is Not an Afterthought!*” is a quote from one of the waste contractors providing waste management services in Queensland. In five words it describes a broad attitude to the use of education to support waste management in Queensland Councils. While there are significant programs that are being conducted, there is room for much more.

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**Evaluation Highlights**

The following provides a summary of the key findings and conclusions of the evaluation.

- Education about waste in Queensland is impacting on knowledge and behaviour. There is significant proof of this impact through all aspects of this evaluation project
- It can be extrapolated that the impacts on behaviour has some effect on waste generation and recycling, but beyond some specific snapshots there is little hard data to prove this. There is a need therefore to better link education efforts to waste data collation and analysis.
- All Queensland Councils were asked to provide information about their use of education as part of their waste management strategy. Only 40% [50 councils] responded and of these only 29% responded directly [14 councils responded as part of the Central Queensland Local Government Association response]. This low response rate is a telling finding in itself, in that it shows that in all likelihood up to 60% Queensland Councils are not using any education to reduce waste and increase recycling.
- Many council staff and others who provided input into this evaluation expressed underlying skepticism about whether education programs have an impact on the waste stream or recycling behaviour. This is not surprising when with some exceptions these programs are generally not strategically delivered and not evaluated. Some of the impact data that is identified in this report will be useful to reduce the level of skepticism.
- The majority of education that is delivered through council programs is directed at school students. Resident education is also provided by most of the councils who responded to the survey, but this appears to concentrate on providing information about waste disposal and recycling. There is limited targeted community education about waste reduction aimed at encouraging adults to avoid generating waste in the first place.
- More training and support is required for council staff, to enhance their understanding and use of education as an integral part of an effective waste management strategy. With some exceptions council staff do not demonstrate a high degree of competence in the use and evaluation of education
- There is significant support from most waste contractors for the use of education and Councils should be mindful of this when developing new contracts.
- There are some high quality facilities based education programs being delivered. Most particularly *Wipe out Waste* [Gold Coast City Council] and *Waste Alert* [Maroochy Shire Council]. Even these programs can and should be extended, improved and evaluated more effectively.

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**Introduction**

Australia has consistently been ranked among the highest waste producing nations in the world and a range of interventions have been implemented to reduce the throw away norms present in our society. Education programs which aim at increasing knowledge, improving skills, influencing attitudes and ultimately affecting behaviour, have been important among a mix of other approaches. These include, regulation [offences and fines], the provision of infrastructure [kerbside or drop-off recycling systems], and economic incentives [variable tipping fees for different types of waste].

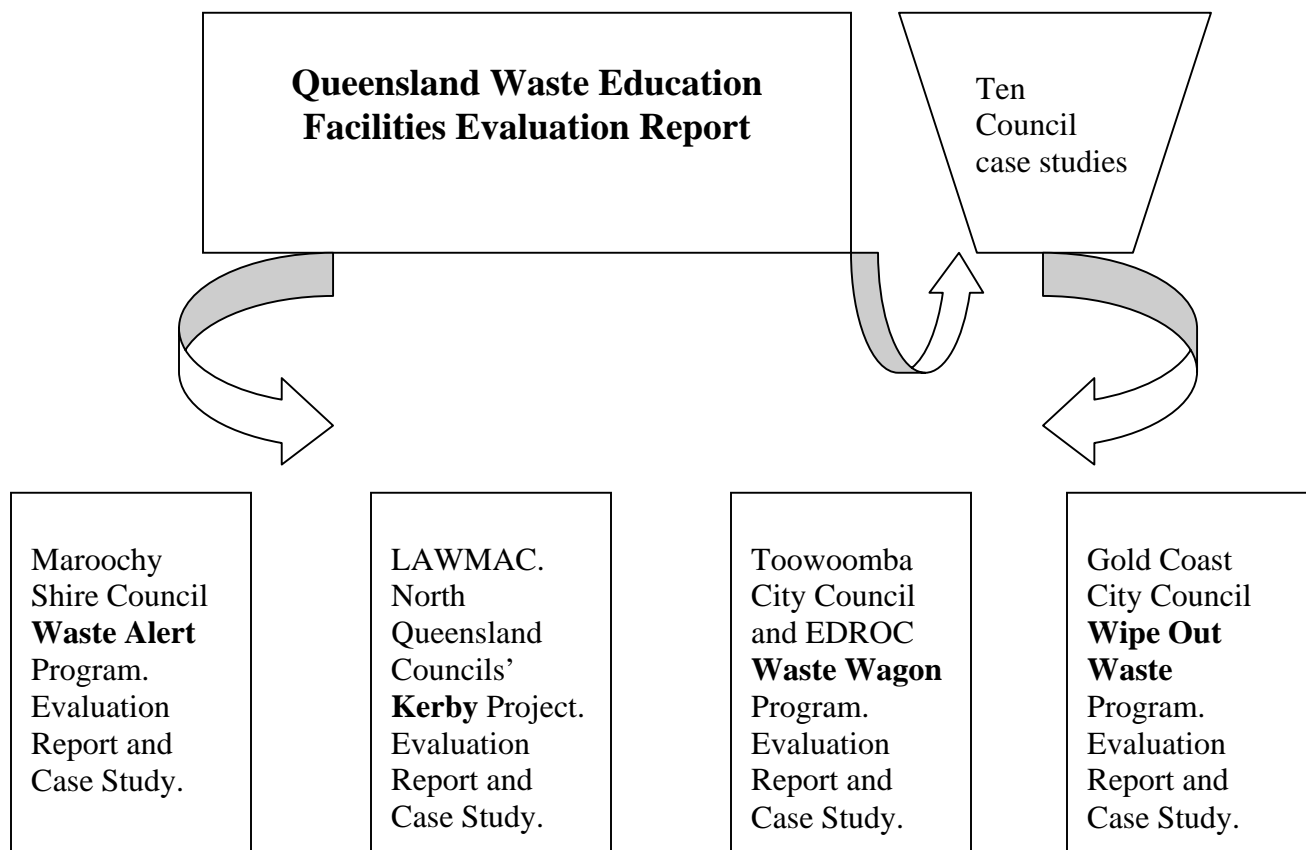
The problem is that Australians continue to consume more, and waste to landfill is an ongoing issue. In the absence of other approaches the call has gone out to use the interventions that we have at our disposal more effectively and to evaluate whether they are having the desired impact. This is a relatively easy challenge to set and a difficult one to address. This is partly because of the nature of the problem in this country. Consumerism is an important and well established community norm supported by very powerful and well resourced stakeholders; for example the advertising industry. Waste reduction programs however have limited financial and stakeholder support.

In addition, evaluation is difficult because programs cannot occur within a controlled environment. People's behaviour is influenced by a range of sources and it is difficult to determine what motivated any change.

The evaluation of waste education facilities in Queensland sits within this context. The changes to waste behaviour are difficult to measure and more particularly the impacts of education of the generation of waste and changes in recycling are even harder to discern. This project attempts to do both.

The Waste Education Facilities Evaluation Project contains a blending of two elements; a broad cross-Queensland study and a more focused and detailed evaluation of four local waste education facilities based projects; LAWMAC, Gold Coast, Maroochy and Toowoomba/EDROC.

This document reports on the Queensland wide evaluation and contains data from councils and waste contractors and includes the development of ten case studies of good practice in education. The report contains findings, conclusions and recommendations drawn from a range of data sources. Some of the learning from the four local projects is incorporated into this broader Queensland evaluation report. This document should be read as the overarching evaluation report with four sub-sections reporting on findings and conclusions for each of the four specific local projects. The following map indicates how all of the reports and case studies from this project are linked together.



**It is essential that the reader of these reports understands that this evaluation is not a comparative study of the relative effectiveness of each local facilities based program. Each program has been evaluated independently and some findings have been drawn into the Queensland wide evaluation. Why is it not a comparative study? Because each program is quite different, purpose-built for different needs, audiences and Councils. How does one compare a bus which aims to service twenty nine Councils in an area larger than NSW, with a program which services only one council area with a MRF and fixed education facility on site?**

Note that this report provides evidence in the form of quantitative and qualitative data. Quotes, in italics, are used to illustrate findings. These are drawn from program records, annual, snapshot and other evaluation and progress reports and focus discussions held by the evaluator.

### **Goals of the Project**

The goals of the study as identified in the Project Brief are to:

1. Identify existing waste and environmental education facilities (both mobile and fixed) in Queensland.
2. Provide recommendations on the future strategic placement of such facilities.

3. Conduct an outcomes based evaluation on the effectiveness of the two regional mobile education units managed by the Local Area Waste Management Advisory Committee (LAWMAC) and Eastern Darling Downs Regional Organisations of Councils (EDROC/Toowoomba), an urban mobile education facility (Gold Coast City Council) and a fixed urban education facility (Maroochy Council).
4. Evaluate the effectiveness of the facilities as a tool within broader education program objectives.
5. Evaluate the effectiveness of the mobile education unit programs through changes in values/behaviours of the participants.

These goals were broadened by extending goal 4 as part of the development of this evaluation process. This enabled the evaluation to focus more extensively on the delivery of education about waste by whatever means including through programs that were facilities oriented, given that the vast majority of councils do not have facilities.

### **Nature of the Evaluation**

The project has been conducted for the Queensland Environmental Protection Agency [EPA] whose vision is

*‘A Queensland where everyone values the environment’.*

The role of EPA is to “protect the environment for a sustainable future”. Hence the agency context for this project.

The Queensland government is a signatory to the National Packaging Covenant [NPC], which is the framework document for managing post consumer packaging waste in Australia. The Covenant, built on the cornerstones of product stewardship and shared responsibility, commenced in August 1999 and negotiation is currently occurring for its renewal. The administration of the Covenant is managed by the Covenant Council, the National Kerbside Recycling Group and, in Queensland by the Jurisdictional Recycling Group (JRG). The role of the JRG is to promote recycling projects from industry or local government with financial support from a joint industry/Government fund. This evaluation project sits within JRG priorities is designed to assess the impact of mobile waste education facilities and a fixed facility. It will also identify other waste education activities conducted by local government and assess their effectiveness and efficiency. In undertaking this study data has been collected about the communities that the facilities and programs serve.

There are a number of waste educational facilities, both mobile and fixed in Queensland and it is likely that more will be developed. Establishing facilities in regional or rural Queensland however presents a number of challenges. These relate to the design of the facility, the positioning of the facility to take into account the distance to surrounding townships and regional areas, existing or proposed waste facilities and recycling services in the area, and costs incurred to schools and the community for transporting children [and adults] to the centre. To overcome many of these issues, in some locations mobile education units have developed and travel between council areas educating schools and the community at events, shows etc.

Many councils request through their waste contracts for the provision of waste education or for the recycling contractor to contribute financially to waste education programs provided by the council. It would appear that the success and sustainability of any waste education facility is determined by having a dynamic and interactive program, local level support including local government and business sponsorship support, sufficient and ongoing interest by schools, and an income/in kind support to cover the costs of employing appropriately qualified staff. In part the focus of the study is to provide evidence of this assertion.

Evaluating the effectiveness of the education program is important for continuous improvement and is often required to argue for ongoing funding. Education programs must go further than just improving knowledge, there must be evidence that they improve the behaviour of those that they target. Furthermore, councils want to know if the programs are impacting on the amount of waste generated in the community, the yields of recyclables collected through kerbside recycling or drop off centres, and the level of contamination.

The logic behind this evaluation is that outcomes are linked in such a way that changes in knowledge, attitudes and behaviours can be identified and their impact on waste management can be determined. The complete Outcomes Hierarchy in appendix 1 details a way of structuring the whole evaluation project and its outcomes so that it provides answers to the challenging issues inherent in the planning and delivery of high quality and impactful projects. The hierarchy shows how the evaluation is both summative and formative in its structure and logic. Summative in that it will identify the effectiveness and efficiency of what has happened; and formative in that it will make recommendations for the future and leave tools for ongoing evaluation activity.

The hierarchy identifies key questions for each outcome and the findings below are reported against each of these questions. The important questions are:

<b>Outcome</b>	<b>Evaluation Questions</b>
9. Recommendations about the strategic use of education in waste facilities in the context of a broader education program.	Where does education centred on waste facilities [fixed or mobile] fit in the scheme of a broader waste management [education] program?
8. Recommendations about the future strategic placement and use of waste facilities for education.	How might waste education facilities be better structured used and located in the future?
7. Evidence that education has an impact on waste generation/recycling/disposal.	Is there any evidence that education activity has had an impact on waste generation, recycling or disposal?
6. Education is an effective tool in changing the attitudes and behaviours of its targets	What evidence is there that education about waste effectively changes the behaviours and attitudes of its targeted participants?
5. Education conducted through waste facilities [mobile and/or fixed] has a strategic place in the mix of education strategies for waste management.	Where does education centred on waste facilities [fixed or mobile] fit in the scheme of a broader waste management [education] program?
4. Specific access, knowledge, attitude and behaviour impacts from each of the four	What were the specific impacts of the education provided through the waste facility on the

<p>case study projects as per outcomes hierarchy for each case study location:</p> <ul style="list-style-type: none"> <li>• Gold Coast</li> <li>• Maroochy</li> <li>• Toowoomba/EDROC</li> <li>• LAWMAC.</li> </ul>	<p>knowledge and attitudes of those who accessed it?  What were the specific impacts of the education provided through the waste facility on the behaviours of those who accessed it?  Also see evaluation questions in the Outcomes Hierarchy for each of the four study projects.</p>
<p>3. Detailed information about waste education facilities [and other education activities] conducted across Queensland by local government.</p>	<p>What is the scope of education activity conducted by Queensland councils?  What is the relationship between education delivered through waste facilities and other waste education programs?</p>
<p>2. Undertake all evaluation activities as approved.</p>	<p>Has the approved evaluation been conducted and the report delivered to the Queensland EPA?</p>
<p>1. Develop the evaluation logic, relevant outcome hierarchies, methodology and instruments in accordance with the Project Brief.</p>	<p>Has the evaluation been prepared in accordance with the brief?</p>

## **Findings**

The findings of this study are presented in three components. Initially data from the survey of all Queensland councils is outlined in Part 1 of the findings. Part 2 reports findings drawn from the four major waste contractors operating in Queensland. Part 3 reports in summary on additional data from the four location based studies and the results are presented as related to each of the evaluation questions/outcomes above.

### **Findings Part 1: Data from Council Survey**

It should be noted that some sample sizes in this section are very small. Charts show percentages for convenience and these are reflected in the narrative, but percentages should be interpreted with great caution, since for some items a single Council's response may indicate anything from less than 3% to more than 9% per cent, depending on the number of councils to whom the findings for a particular item, refer. Data on the number of councils responding to each item is provided.

***Provision of waste education:*** Of 125 Councils approached, only 36 (29%) responded directly to the survey. In addition the Central Queensland Local Government Association responded on behalf of a further 14 Councils, bringing the total response rate to 40%. For ease of reporting, the findings from the Central Queensland LGA are discussed separately from those where Councils have responded directly.

While there may have been other reasons for not responding, it is likely that the majority of Councils that did not respond to the survey have not implemented any significant waste education programs. Unfortunately this is an assumption with no data to back it up. The survey design [see appendix 3] did make it easy for Councils to respond that no programs were in place. Four Councils only chose to do this.

The low response occurred despite the support of the Local Government Association of Queensland [LGAQ] who endorsed the survey, distributed the questionnaire electronically and sent reminder notices. In the LAWMAC and EDROC councils additional reminder notices were also sent requesting that the survey should be completed. Email, fax back and post back, return to the evaluator options were provided.

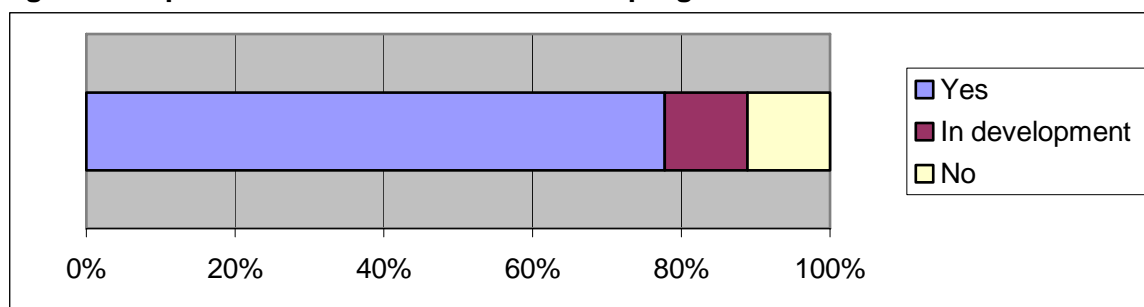
The low response rate is a telling finding in itself, in that it shows that in all likelihood up to 60% of Queensland Councils are not using any education to reduce waste and to increase recycling. This is of significant concern.

Of the 36 Councils that responded individually, 32 (90%) indicated that education was a part of their approach to waste management, including 4 councils that said their education programs were still being developed.

**Table 1: Implementation of waste education programs**

Yes	In development	No	N
28	4	4	36

**Figure 1: Implementation of waste education programs**



NB: Small sample size (36) – interpret percentages with caution

Reasons given for not providing waste education included:

- LGA being too small and residents showing no interest
- residents responding for a time to recycling and waste education programs, then reverting to old habits
- quantity of recyclables collected insufficient to make recycling viable
- insufficient staff to provide education.

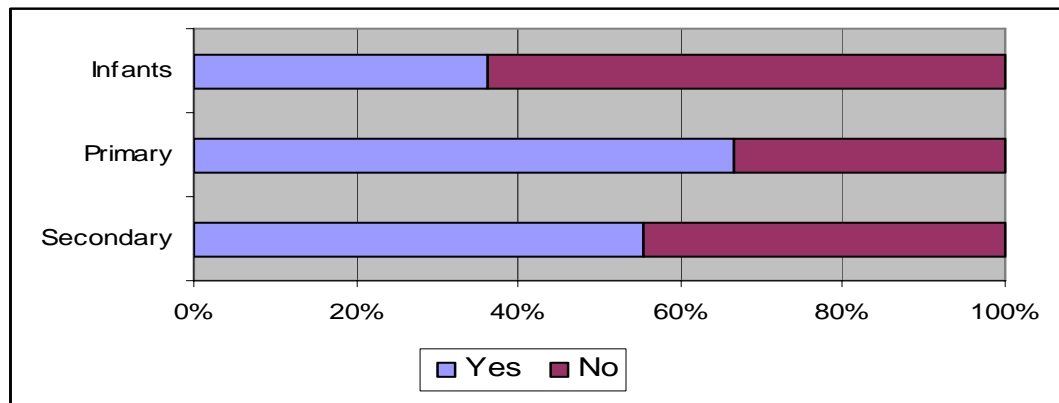
**Waste education for students:** Of the 36 Councils that responded, 25 or 69% provided waste education to students. Specifically:

- one third provided programs to infants
- two thirds provided waste education to primary school students
- half provided programs to secondary students.

**Table 2: Waste education for students**

	Yes	No	N
Infants	13	23	36
Primary	24	12	36
Secondary	20	16	36

**Figure 2: Waste education for students**



NB: Small sample size (36) – interpret percentages with caution

All or almost all of the 25 Councils that provided waste education to students included in their objectives:

- to provide information about recycling (100%)
- to encourage people to recycle (100%)
- to improve awareness of reuse and reduction of waste (100%)
- to reduce the waste taken to landfill (100%).
- to improve attitudes to waste management and recycling (95%)
- to change people’s recycling and compliance behaviour (95%)
- to improve compliance with recycling systems (90%).

Only half (48%) included self-reported waste reduction behaviour in their objectives.

Other objectives reported included:

- improve understanding of waste hierarchy principles
- litter free lunch.

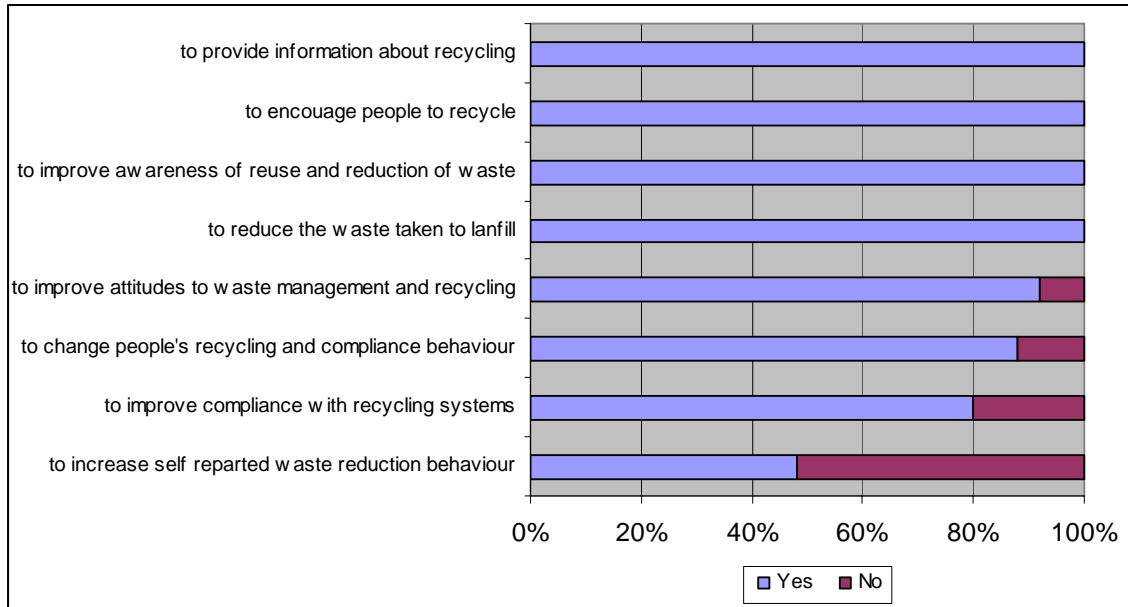
**Table 3: Objectives of waste education for students**

	Yes	No	N
to provide information about recycling	25	0	25
to encourage people to recycle	25	0	25
to improve awareness of reuse and reduction of waste	25	0	25
to reduce the waste taken to landfill	25	0	25
to improve attitudes to waste management and recycling	23	2	25
to change people’s recycling and compliance behaviour	22	3	25
to improve compliance with recycling systems	20	5	25

to increase self reported waste reduction behaviour	12	13	25
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Of concern is the low number of programs that are addressing waste behaviour

**Figure 3: Objectives of waste education for students**



NB: Small sample size (32) – interpret percentages with caution

Other objectives reported included:

- to promote compliance with wet and dry waste separation system
- to promote community ownership of waste through involvement in and awareness of programs such as home composting, vermiculture, mulched green waste and Clean Up Australia Day
- to improve understanding of waste hierarchy principles
- to prevent littering and protect waterways
- to preserve natural resources and improve environmental performance.

The Central Queensland Local Government Association reported that they were delivering school based waste education in primary schools across all fourteen member councils. This education was addressing all objectives listed above.

**Waste education for residents:** 30 of the Councils that provided any waste education at all, provided it to residents. Two provided waste education to other targets and not residents, four did not provide education at all, to residents or any other targets.

Almost all delivered waste education to residents through:

- press advertisements (90%)
- press releases or a column in the local press (90%)
- brochures and similar materials (85%).

Some delivered waste education to residents via:

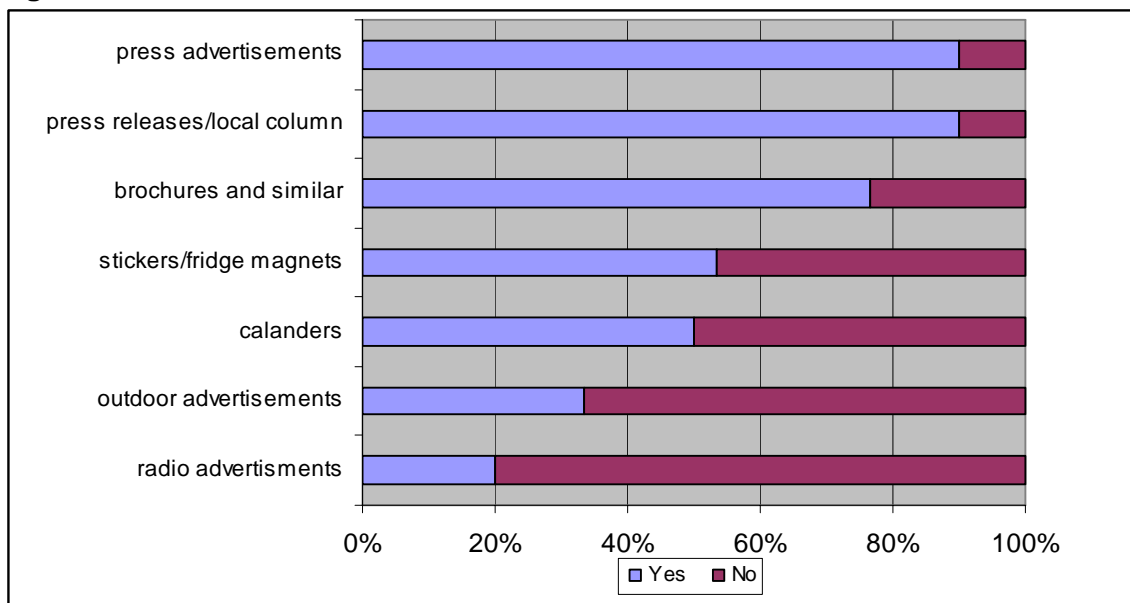
- stickers/fridge magnets (59%)

- calendars (56%).
- outdoor advertisements (37%).
- radio advertisements (22%).

**Table 4: How waste education is delivered to residents**

	Yes	No	N
press advertisements	27	3	30
press releases/ local column	27	3	30
brochures and similar	23	7	30
stickers/fridge magnets	16	14	30
calendars	15	15	30
outdoor advertisements	10	20	30
radio advertisements	6	24	30

**Figure 4: How waste education is delivered to residents**



NB: Small sample size (30) – interpret percentages with caution

Other means of delivering waste education to residents included:

- presentations by Council officers to community groups
- organic waste workshops
- tours of waste facilities
- static displays at shopping centers, libraries, public events and at Council
- community surveys
- residential bin surveys to assess wet/dry segregation compliance, with follow up information to those not compliant
- waste hotline (phone information service).

In most cases, the objectives of waste education for residents included:

- to encourage people to recycle (96%)
- to improve attitudes to waste management and recycling (93%)

- to provide information about recycling (89%)
- to reduce the waste taken to landfill (89%)
- to change people’s recycling and compliance behaviour (85%)
- to improve awareness of reuse and reduction of waste (85%)
- to improve compliance with recycling systems (81%).

Only a minority (37%) aimed to increase self reported waste reduction behaviour.

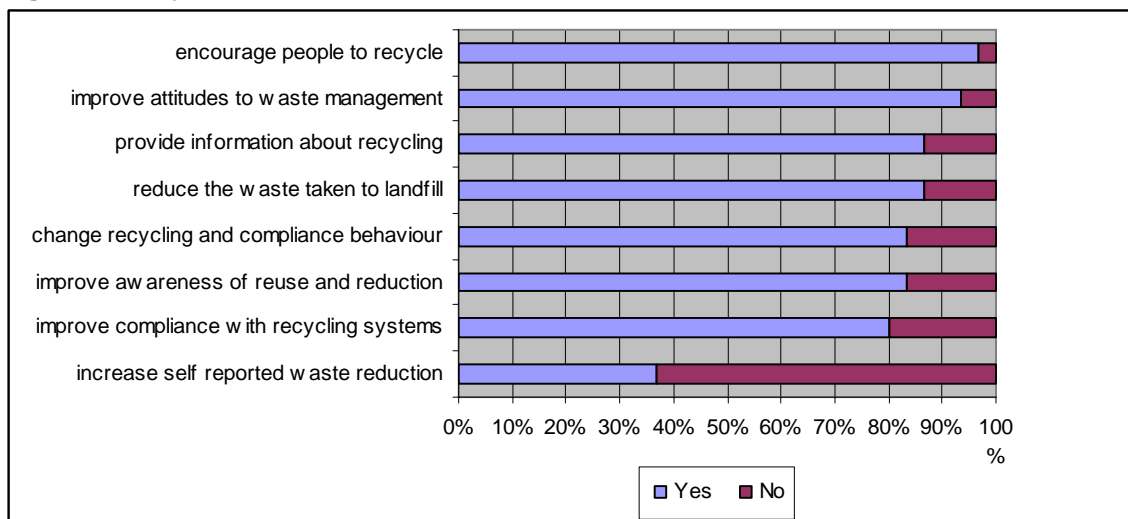
Other objectives reported included:

- preventing misuse of facilities, fires and waste dumped in the wrong locations
- litter prevention and protection of waterways
- diversion of green waste from landfill to home composting and worm farming.

**Table 5: Objectives of waste education for residents**

	Yes	No	N
to encourage people to recycle	29	1	30
to improve attitudes to waste management and recycling	28	2	30
to provide information about recycling	26	4	30
to reduce the waste taken to landfill	26	4	30
to change people’s recycling and compliance behaviour	25	5	30
to improve awareness of reuse and reduction of waste	25	5	30
to improve compliance with recycling systems	24	6	30
to increase self reported waste reduction behaviour	11	19	30

**Figure 5: Objectives of waste education for residents**



NB: Small sample size (30) – interpret percentages with caution

Councils within the Central Queensland Local Government Association deliver some limited education for residents. Brochures, calendars, press releases and

advertisements and a local Council column are the vehicles used to deliver this and all objectives listed above are addressed.

**Waste education for business and industry:** Only 16 Councils, or less than half of all of those responding, indicated that they provided waste education programs for business or industry, including one that only provided audits. Note that only 1 council offered a really comprehensive program, using all interventions.

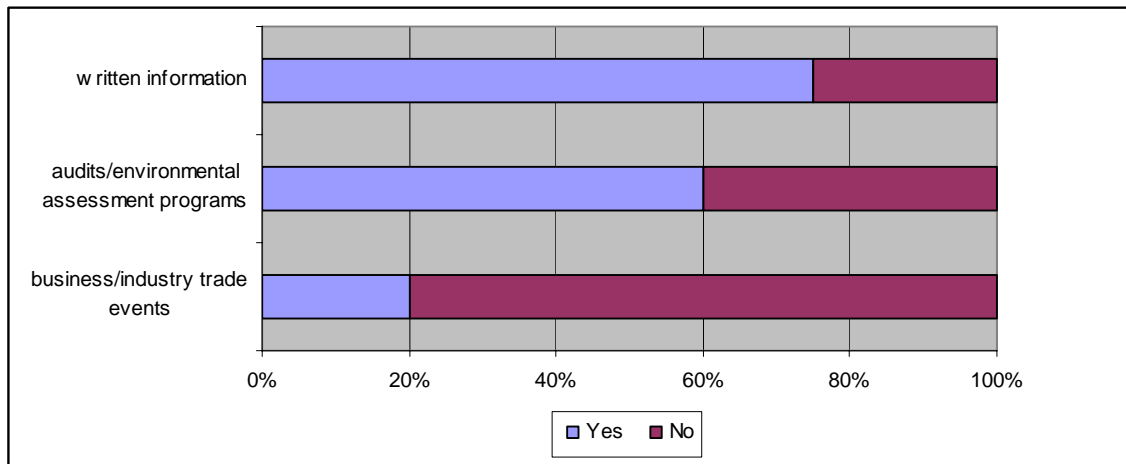
Of these:

- most (75%) delivered written information to business and industry
- over half (60%) conducted audits or environmental assessment programs
- a fifth (20%) provided waste education at business or industry trade events.

**Table 6: How waste education is delivered to business or industry**

	Yes	No	N
written information	15	5	20
audits/environmental assessment programs	12	8	20
business/industry trade events	4	16	20

**Figure 6: How waste education is delivered to business or industry**



NB: Very small sample size (20) – interpret percentages with caution

Other means of delivering waste education to business/industry included:

- newspaper articles and commercial waste newsletter delivered to businesses
- kerbside recycling and limited free access to landfill.

Note that in the main, smaller councils did not provide education to business and industry at all.

In most cases, the objectives of waste education for business/industry included:

- to encourage people to recycle (94%)
- to improve attitudes to waste management and recycling (94%)

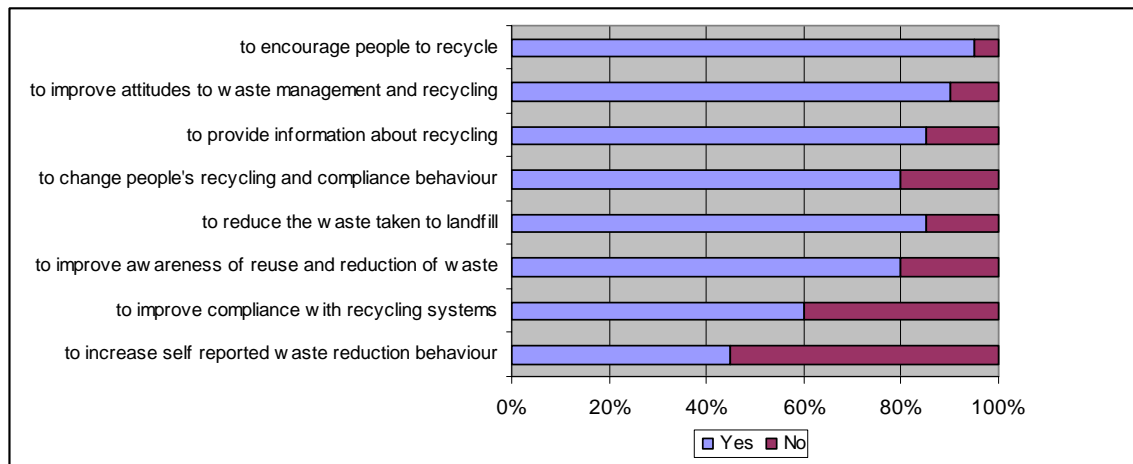
- to provide information about recycling (87%)
- to change people’s recycling and compliance behaviour (87%)
- to reduce the waste taken to landfill (87%)
- to improve awareness of reuse and reduction of waste (81%)
- to improve compliance with recycling systems (62%).

About half (44%) aimed to increase self reported waste reduction behaviour. Another objective was to show how separating waste can reduce tip fees.

**Table 7: Objectives of waste education for business/industry**

	Yes	No	N
to encourage people to recycle	19	1	20
to improve attitudes to waste management and recycling	18	2	20
to provide information about recycling	17	3	20
to change people’s recycling and compliance behaviour	16	4	20
to reduce the waste taken to landfill	17	3	20
to improve awareness of reuse and reduction of waste	16	4	20
to improve compliance with recycling systems	12	8	20
to increase self reported waste reduction behaviour	9	11	20

**Figure 7: Objectives of waste education for business/industry**



NB: Very small sample size (20) – interpret percentages with caution

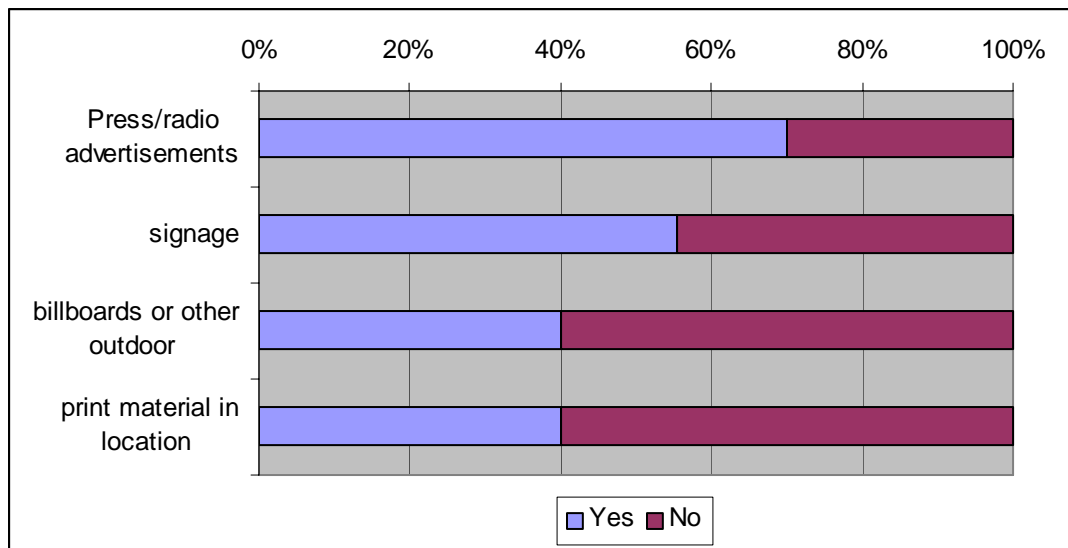
**Waste education for visitors and tourists:** Only ten, or one third of the responding Councils delivered waste education targeting visitors or tourists.

Most (70%) delivered waste education to tourists or visitors via press or radio advertisements, half (50%) used signage and some used strategically placed print materials (40%), billboards or other outdoor materials (40%).

**Table 8: How waste education is delivered to visitors/tourists**

	Yes	No	N
press or radio advertisements	7	3	10
Signage	5	5	10
billboards or other outdoor material	4	6	10
print material in location [e.g. hotels)	4	6	10

**Figure 8: How waste education is delivered to visitors/tourists**



NB: Very small sample size (10) – interpret percentages with caution

The objectives of waste education for visitors/tourists:

- to reduce the waste taken to landfill (70%)
- to encourage people to recycle (70%)
- to provide information about recycling (60%)
- to improve awareness of reuse and reduction of waste (60%)
- to improve compliance with recycling systems (60%)
- to improve attitudes to waste management and recycling (50%)
- to change people’s recycling and compliance behaviour (50%).

Other objectives reported included:

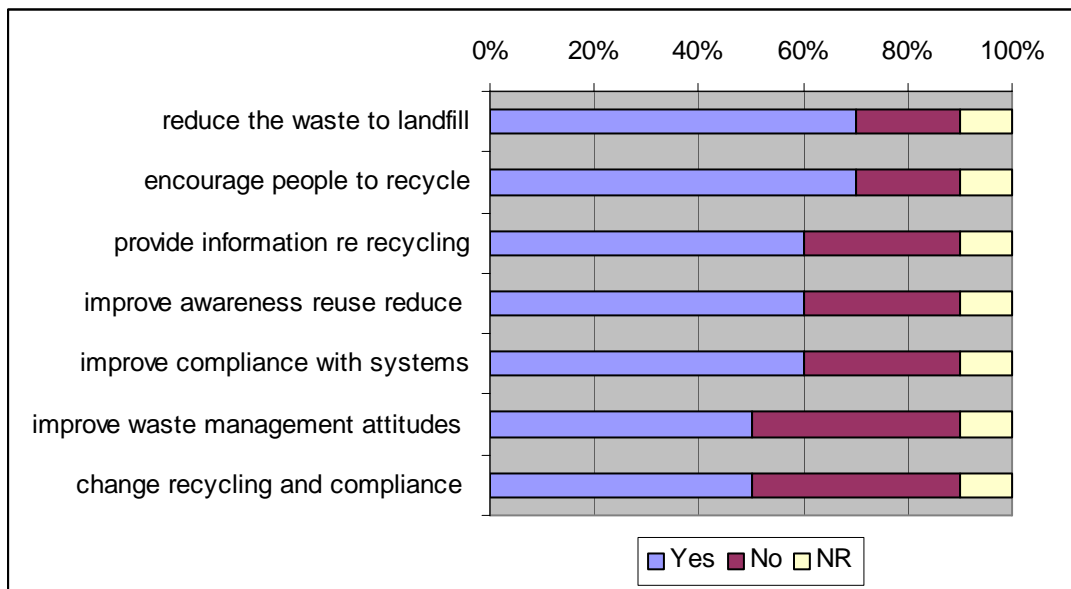
- to reduce litter
- improving compliance with wet and dry waste separation system
- to advise visitors of facility locations, what can be dumped and where.

**Table 9: Objectives of waste education for visitors/tourists**

	Yes	No	NR	N
to reduce the waste taken to landfill	7	2	1	10

to encourage people to recycle	7	2	1	10
to provide information about recycling	6	3	1	10
to improve awareness of reuse and reduction of waste	6	3	1	10
to improve compliance with recycling systems	6	3	1	10
to improve attitudes to waste management and recycling	5	4	1	10
to change people's recycling and compliance behaviour	5	4	1	10

**Figure 9: Objectives of waste education for visitors/tourists**



NB: Very small sample size (10) – interpret percentages with caution

**Other target audiences:** Only nine of the 31 Councils that responded said they delivered waste education programs to additional target audiences. These target groups included:

- seniors, retirement villages and other gated communities
- Councillors
- Chamber of Commerce, service clubs and other community groups
- tertiary students.

**Funding of waste education** Of the 32 Councils that provided some form of waste education:

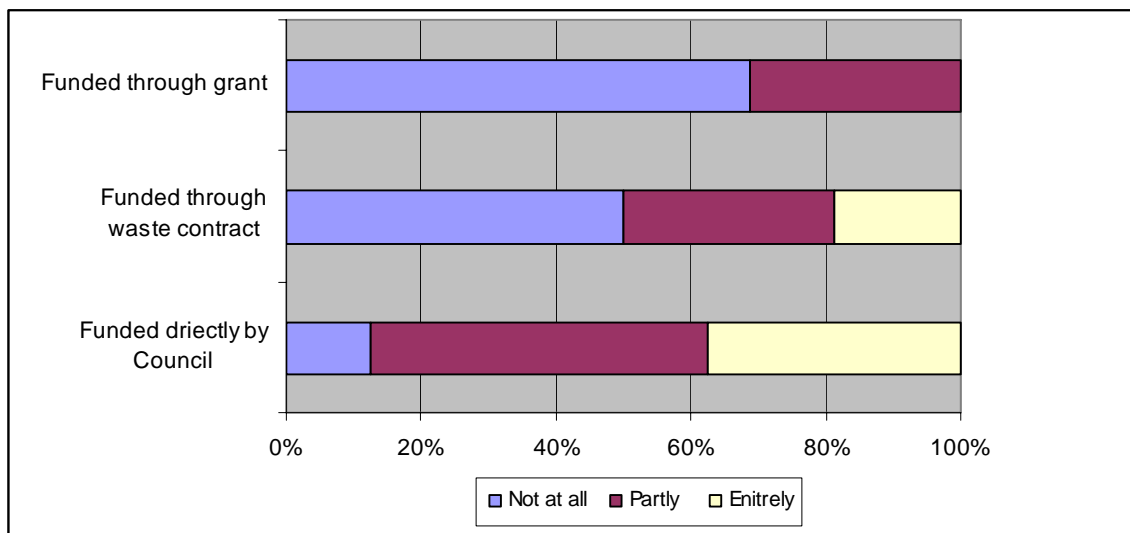
- 12 were entirely funded directly by the Council and a further 16 were partly funded directly by the Council
- 6 were funded entirely as part of the waste contractor's contract and a further 10 were partly funded in this way (16 in total)
- 10 were partly funded through a grant from another agency.

It should be noted that the data that was provided in this section of the surveys was poorly completed and did not provide a comprehensive response. Some respondents did not seem to be very aware of where waste education funding came from. The question on the level of funding available for waste education also caused some concern.

**Table 10: Funding of waste education**

	Entirely	Partly	Not at all
Funded directly by Council	12	16	4
Funded through waste contract	6	10	13
Funded through grant	0	10	17

**Figure 10: Funding of waste education**



NB: Small sample size (32) – interpret percentages with caution

Contractors involved in providing waste education in respondent Councils included

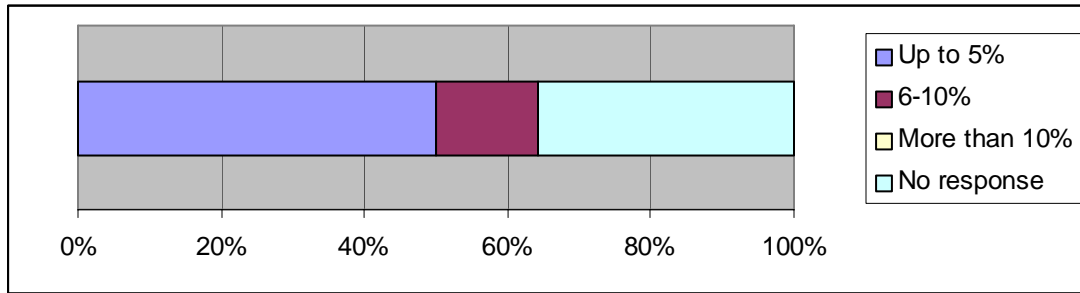
- Cleanaway (6 Councils)
- JJ Richards (3 Councils). Unclear if it is Envirocom providing the education.
- Envirocom (2 Councils);
- Visy
- Collex

Only nine of the 14 Councils where waste education was provided by a waste contractor as part of their waste contract provided quantitative information. In these cases, the proportion of the waste contract dedicated to waste education was usually less than five per cent, but in two cases it was between six and ten per cent.

**Table 11: Proportion of waste contract dedicated to waste education**

Up to 5%	6-10%	More than 10%	No response	N
7	2	0	5	14

**Figure 11: Proportion of waste contracts dedicated to waste education**



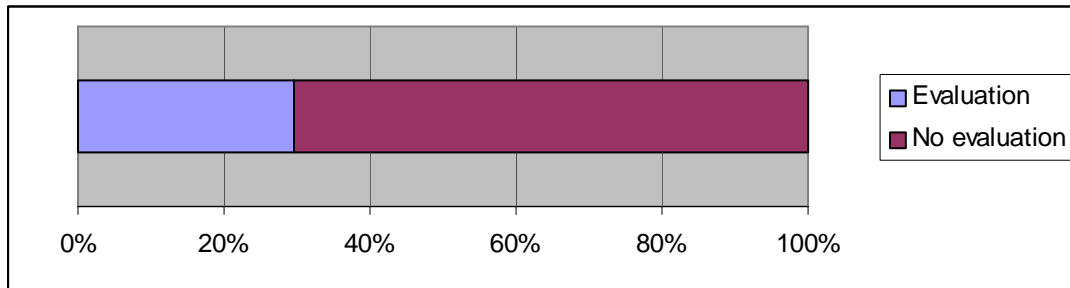
NB: Very small sample size (14) – interpret percentages with caution

**Evaluation of waste education programs:** Just under one third of Councils that did provide waste education had conducted an evaluation or collected any other evidence that the waste education was effective.

**Table 12: Evaluation of waste education programs**

Evaluation undertaken	No evaluation	N
8	19	27

**Figure 12: Evaluation of waste education programs**



NB: Small sample size (27) – interpret percentages with caution

Reasons given for not undertaking any evaluation included:

- other priorities
- difficulties in directly attributing changes in performance indicators solely to education programs
- lack of staff time or resources
- education programs only commenced recently.

The most commonly reported evaluation findings were:

- improved rates of recycling (78%)
- improved compliance with recycling systems (56%).

A few reported:

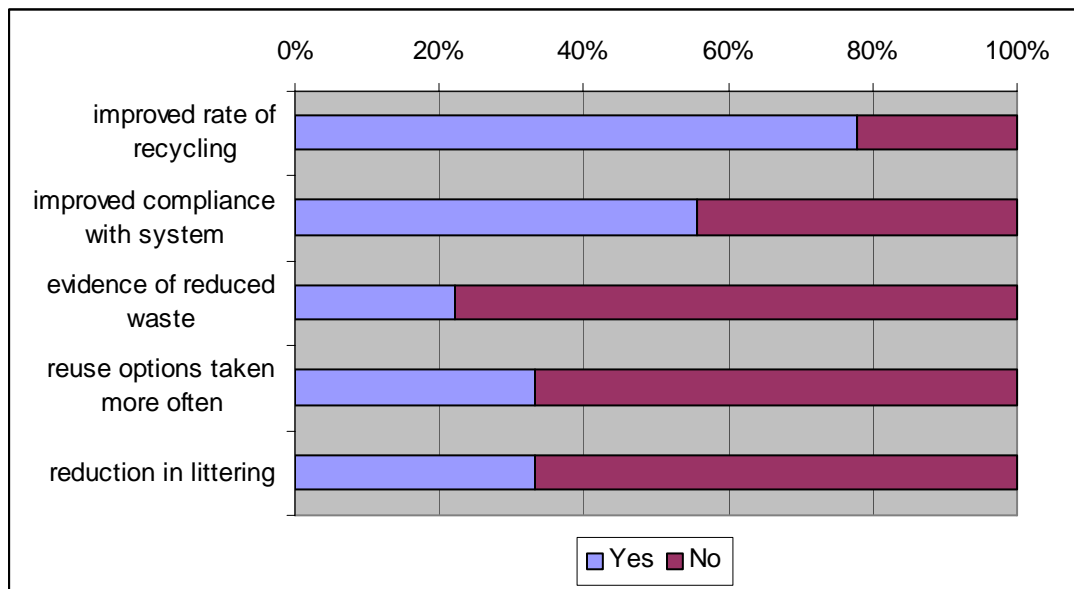
- evidence of reuse options being taken more often

- reduction in littering
- evidence of reduced waste.

**Table 13: Evaluation findings**

	Yes	No	N
improvements in rate of recycling	7	2	9
improved compliance with recycling system	5	4	9
evidence of reuse options being taken more often	3	6	9
reduction in littering	3	6	9
Evidence of reduced waste	2	7	9

**Figure 13: Evaluation findings**



NB: Very small sample size (9) – interpret percentages with caution

Other relevant findings included:

- increase in resource recovery
- increased compliance with wet and dry waste separation
- decrease in wet waste quantities
- participation in Clean Up Australia Day and similar activities
- public place and special event recycling
- participation by community groups
- improved waste separation at landfill locations.

Further comments by Councils consulted included suggestions that:

- generic waste education (waste minimization, littering) and community surveys about waste should be undertaken at the state level
- groups of Councils, RoCs and regional bodies such as Lawmac should be encouraged to apply for grants to fund waste education at regional leveling
- waste education should be part of school curricula
- waste education is only one strategy amongst others in waste management; others include separation at waste facilities, user pays and differential disposal fees.

Note re the Central Queensland Local Government Association [CQLGA] waste education activity. The CQLGA has employed a coordinator of Communication and Public Awareness as a specific action under the Regional Waste Management Strategy. This officer delivers programs across the fourteen member councils, mostly with a schools and resident focus. No work is directed at business or visitors. Current programs include:

- Community Waste Saver Awards
- School's Waste Competition
- Dedicated waste website
- Newsletter on waste issues
- Newspaper advertorials
- Education games and activities
- Annual calendar
- Distribution of teaching resources.

The CQLGA is also seeking funding for a waste education trailer, and the development of interactive waste minimisation computer and board games. Although no evaluation of its programs are in place CQLGA is to be congratulated for taking on a regional waste education initiative in such a proactive manner. Funding is cost shared between member councils with the support of an external grant.

### **Findings Part 2. Findings from the Contractor's survey**

Advice from the Queensland Environmental Protection Agency indicated that there were five major waste contractors that provided services in Queensland. Contact was made with all five, and surveys were returned by four of them; Vise Recycling, J. J. Richards and Sons [through Envirocom], Collex Pty. Ltd. and Cleanaway. Despite a number of reminders Wanless Wastecorp did not reply. This is a finding of some concern in that it demonstrates that this company does not value education highly and is unlikely to be able or willing to provide a high quality education support to its clients.

Key findings from the contractors study include:

- 75% of companies provide education services as a part of their contract always. The other company provides education within the contract occasionally. This demonstrates a high degree of contractor support for education and Councils should be mindful of this when developing new contracts.
- Where councils have not included education, contractors have indicated that the reasons include:
  - Councils are of the view that this function can be fulfilled by their own internal waste staff.
  - Councils are very focused on price rather than education.

- Council lacks an internal champion for education and lacks understanding about what value it adds.
- Smaller councils lack the resources to fund education, due to the cost per household.
- Education becomes a part of the Environmental Health Office's [if there is one] normal duties with little program support, resources or training to deliver a program.
- *"In some instances education is still regarded as an unnecessary add on within broader waste management considerations."*
- Where contractors provide education programs, all contain elements of the following:
  - waste reduction and consumption issues
  - reuse of products considered waste
  - how and when recycling is done
  - what can be recycled
  - avoidance of contamination of recyclables
  - littering issues.
- Contractors provided education services to a varying number of councils via contracts. One contractor worked with one council only; others with more than ten councils. In the main, school resident oriented programs were offered. There were instances where contractors were involved in visitor education programs. It should be noted that two of the contractors surveyed provided Australia wide data for this question. This may have been the fault of the survey design, which did not specify in this question that Queensland data was required.
- One contractor indicated that for their company *Education is recognized as an integral part of all waste contracts. There is a general understanding that education should be outcomes based and reflective of environmental education principles, not just information exchange.*
- All contractors indicate that they evaluate their programs and this is certainly the case if evaluation involves only counting the number of participants and asking them if they like the program. For example one contractor indicates *Our clients are very pleased with our programs and their delivery. The number of people who we are able to reach increases each and every year.* There is some evidence of evaluation that goes beyond this level but limited information was provided by contractors or councils [see above] that demonstrated that this was a consistent approach for all programs. The case studies, see below, bear testament to this lack of a consistent evaluation culture at sufficient depth to demonstrate impact on waste behaviour and the waste stream.
- Evaluation methodologies used include resident surveys, feedback forms, waste tonnage and contamination data, council feedback, post workshop feedback, bin inspection programs and internal peer evaluation.
- One contractor is of the view that *Councils who indicate no education programs continually show a slower recycling growth rate than those councils who have an education program attached [sic to their contract].* Another indicated that *Participants become more aware of waste issues in general.*

The most telling finding of all is summarised by the following quote from a contractor.

*In terms of education the greatest issue is the lack of understanding about how this area is best integrated into the broader waste management arena. Education is too often an afterthought or a perceived luxury instead of a necessity.*

### **Findings Part 3: General findings considered against evaluation outcomes**

This section is structured under the evaluation questions related to each of the outcomes identified in the outcomes hierarchy. Where new data is identified it is drawn from the snapshot surveys [adults, student and teachers] in each of the location specific projects. The following table identifies the number of surveys returned from each location

Location	Students	Adults	Teachers
Gold Coast	365	6	11
Maroochy	287	57	9
Toowoomba/EDROC	155	32	8
Kerby LAWMAC	195	5	14
TOTAL	1002	100	42

Note that the small sample sizes of teacher and adult responses means that data expressed as percentages must be treated with caution

#### ***Has the evaluation been prepared in accordance with the brief and the report provided to the Queensland EPA? [Outcomes 1 and 2]***

This evaluation has been undertaken in accordance with the brief provided by the Queensland EPA. In fact it has gone beyond the initial brief by providing information about education activity that is occurring outside of waste facilities in Queensland councils. This report, the four location specific reports, and associated case studies have been provided to the Queensland EPA.

#### ***What is the scope of education activity conducted by Queensland councils? [Outcome 3]***

The findings for this evaluation question are detailed in parts 1 and 2 above. In general terms education is inconsistently used by councils as part of their waste management strategies. A few use it well, some deliver programs with strategic or practical limitations and many don't provide education at all. Where it is used, school education programs are a significant focus and this seems somewhat strange when young people are not the major waste generators. Their parents are though, and there are some significant programs aimed at residents.

As a part of this evaluation project a number of case studies have been developed. Eight case studies have been selected from councils who contributed information in the council survey [above], and the also the four location specific projects have contributed case studies. The latter four case studies focus on facilities-based education. The other eight chronicle a more generic range of projects. All case studies have been provided to the EPA for placement on their website and on the website of the LGAQ.

Of interest to measuring the scope of activity conducted in Queensland, has been the process of case study development, especially in reference the generic case studies outlined above. In some cases councils have provided information in the survey that they are delivering particular educational activities, but in following this up to develop a possible case study it was found in some cases that the extent of the activity was

somewhat limited, especially in work with business and industry. In other cases however much more extensive and effective work was being undertaken. This does not invalidate the results of the council survey, rather it provides relevant commentary on them. It should be noted that ten generic case studies were originally envisaged for this part of the project. Despite countless follow-up there were not ten councils who were prepared to engage in this part of the process.

***What is the relationship between education delivered through waste facilities and other waste education programs? Where does education centred on waste facilities [fixed or mobile] fit in the scheme of a broader waste management [education] program? [Outcomes 5, 9]***

Two related outcome questions have been linked together here. Relevant findings for this outcome are contained in the four location specific evaluation reports [LAWMAC, Maroochy, Gold Coast and Toowoomba/EDROC]. In general there is only limited evidence of activities conducted through the waste facilities being integrated within broader waste management strategic approaches, or even the broader education program. In summary the following information supports this finding [see also each of the location specific reports]:

- For LAWMAC councils the Kerby bus is clearly an important part of the waste education efforts of North Queensland councils. The fact however, that it is “in town” for such short periods of the year, because of the need to spread use across the region, means that integration into the broader council education program is difficult. There is clear evidence that Kerby has influenced the strategic approach that some councils have taken to waste management and that it has been an integrating factor which has focused efforts when it has been in use in a location. But for most councils, education activities continue across the year in ways that are not Kerby related. For example see case studies from Townsville City Council, Mackay City Council and Johnstone Shire Council. In the circumstances this is entirely appropriate.
- For Toowoomba/EDROC the Waste Wagon provides a significant focus in Toowoomba for education effort. Little evidence exists about its level of use in other EDROC councils and no evidence of impact is available. In Toowoomba City Council there is little evidence of integration. The Waste Wagon characters are not used elsewhere in the council’s education efforts. While the Wagon itself is used to address larger issues [for example the work with people with disabilities that this cited in the Toowoomba report], there is little evidence of Wagon use in the broader residents, visitors and business education approaches. The Wagon is central to Toowoomba’s waste education activities, but more could be made of its profile and presence in the wider program.
- On the Gold Coast the council has determined that the Wipe Out Waste Program is to be primarily schools oriented, with well over 90% of activity occurring within schools. It is important to note in this regard that the Wipe Out Waste Program is separately contracted outside of the Waste Management contract. Education for other target populations occurs in different ways and in part as a separate contract, so it is not surprising that there is limited integration. This is a conscious strategic approach by the Gold Coast City Council and the success of Wipe Out Waste validates this approach.
- In Maroochy there is evidence of increasing levels of integration between Waste Alert and other council education programs, although the nature of a fixed facility will always limit the extent to which this can occur. Evidence of greater

integration includes a varied strategic approach to the delivery of community education through the centre; the use of the centre for events and for regular monthly community information sessions. A key challenge however is how to educate the visitors to Maroochy, and a fixed education facility at a MRF is little help in this regard.

- Also the Maroochy report indicates that the education facility at the MRF is not used at all by Noosa Shire Council and is rarely used by Calloundra Shire Council. This is despite the fact that the MRF is provided by the same contractor to deal with the recycling needs of all three councils. This provides a clear example of the lack of integration because both of these councils are undertaking quite substantial education efforts in their own right.
- From the general council survey and the contractors' survey, few other facilities based education programs are identified, with the exception of the new facility in Mackay City Council. This has only recently commenced operation and no information is available about the programs performance. However council has attempted to integrate education activities together [see Mackay City Council Case Study].

***What were the specific impacts of the education provided through the waste facility on the knowledge and attitudes of those who accessed it? What were the specific impacts of the education provided through the waste facility on the behaviours of those who accessed it? [Outcome 4 and 6]***

In the main, data to support this outcome is to be found within the four location specific reports. A key finding of this study is that Queensland waste education efforts lack a culture of evaluation and so in many cases impact on knowledge, attitudes and behaviour is unknown. There are probably impacts but no-one bothers to assess them. Hence with some localized exceptions, insufficient data is available to demonstrate that this outcome is broadly met.

The exceptions are valuable however and some key information is included below.

- The Gold Coast City Council's Wipe Out Waste Program showed some interesting results in that teachers reported a high level knowledge growth among their students. Parents also indicate that their children had shown significant interest in composting and worm farming [65% of participants in 2004] and increased involvement in recycling [also 65% in 2004]. In addition, almost a third of the students involved in the program had shown a real willingness to talk with their parents about reducing waste, reusing products and materials and recycling.
- Maroochy Shire Council results are also interesting. There is no evidence of student response to the program, however teachers are surveyed. Data is also collected from key representatives in community groups who access the program

Note: there is no evaluation culture or process evident in the LAWMAC Kerby program or the Toowoomba Waste Wagon Program. In both instances the evaluation report has included recommendations and sample materials to assist these projects to undertake local evaluation.

Note also that recommendations and assistance is provided in the Evaluation Report to the Gold Coast and Maroochy projects about how to improve their evaluation processes.

***Is there any evidence that education activity has had an impact on waste generation, recycling or disposal? [Outcome 7]***

Very limited evidence exists to tie particular education efforts into specific waste related outcomes. There is much work to be done to ensure that this occurs more effectively in the future but it is noted that this will always be difficult because tying program to waste stream impact will always cause problems.

It should be noted however that this lack of information about the relationship between intervention and outcome does not just apply to education. All waste management interventions suffer from similar failings. Currently there is some hard evidence of waste stream and recycling impact in Toowoomba and in some of the LAWMAC councils. The Kerby report provides the most relevant and useful proof that education is having an effect. The following quote from the Kerby report demonstrates impact in two locations.

*Nebo Shire reported a 100% increase in recycling following Kerby's first visit in 2003 [the recycling rate rose to 47,000 tonnes p/a] There was decay however, in that this dropped to 34,196 tonnes by June 04 then rose again to 42,360 tonnes [projected annual data] following second visit of the bus in October 2004.*

*Thuringowa City Council reports an increase in recycling rate [22%] and a decrease in waste to landfill [18%] since Jan 2003. They argue that "some increase in recycling is due to the growth in the city [3% growth rate in the period] however the reduction in waste and the increase in recycling can be attributed to public education programs instituted in the city" [including Kerby].*

There are key stakeholders across all programs who indicate that while waste to landfill is increasing, recycling is also increasing and contamination rates are decreasing, and that the latter are the result of an effective education effort. This is probably true but it is difficult to prove for some of the reasons raised above.

As indicated above and throughout the four location reports, education is impacting on knowledge and behaviour, and it can be extrapolated that this is therefore having an effect on waste generation and recycling. It is merely that this effect is difficult to measure.

***How might waste education facilities be better structured, used and located in the future? [Outcome 8]***

There is sufficient evidence from this evaluation that education conducted in either mobile or fixed facilities, can impact on the waste knowledge and behaviour. The evaluation also demonstrates that education can influence behavioural intentions. Some specific examples outlined below, illustrate this finding: These are dealt with more fully in the Report on each location-specific project.

- Hard data exists in the Maroochy, LAWMAC/Kerby/Toowoomba/EDROC and Gold Coast Reports to support the argument that waste education projects based around facilities impact on knowledge. The scope of the evaluation did not allow for pre and post measures of knowledge growth, however in all locations adult

- and student participants indicated that knowledge had increased as a result of the program. Independent observers [teachers] also supported this finding.
- On the Gold Coast the Wipe Out Waste program has been evaluated for a number of years. Since 2000 a significant majority of parents of students who have undertaken the program have indicated that behaviour change occurred in their children as a result of the Wipe Out Waste lessons.
  - In Maroochy and Toowoomba there is strong self-reported growth in behavioural intent among adults and students. In the LAWMAC region Kerby also seems to be having an impact on the behavioural intentions of young people. Insufficient hard data exists however, to validate a similar claim for adult participants.

It is clear that facilities based education can support other waste management initiatives and policies. Some examples drawn from the location specific studies include:

- Kerby has been instrumental in the decisions of some councils to implement extended recycling services [see LAWMAC/Kerby Report].
- The Toowoomba Waste Wagon has been used as a key part of a major disability education program.
- On the Gold Coast the Waste Challenge part of the Wipe Out Waste program has had a significant impact on the waste produced by schools and the environmental management practices that they employ

For the reasons outlined above, this is not a comparative study. However it is clear from this evaluation and other studies with similar focuses that some programs work better than others. As a result of this evaluation, some guidance checklists have been drafted [see appendix 4] to assist councils and contractors to deliver improved facilities based education.

## **Conclusions**

**Waste education is happening.** In some locations there is much energy in waste education in Queensland. This is especially, but not exclusively, the case where programs are delivered as a part of council's waste contract. For smaller councils however this is an issue because the size of the contract is insufficient to allow for a sufficient level of education activity to be included. A fairly large number of councils seem not to see education as an effective tool and therefore do not use it. Whether this is a deliberate strategic decision or is merely the result of lack of financial resources and/or staff time and competence is difficult to determine. In reality it is probably a mixture of both, in most smaller councils.

**Waste education is occurring but often it is not effective or efficient.** At times the level of energy referred to above, is not matched by science and strategy. Programs are conducted, but not evaluated, strategic approaches are somewhat limited. In many councils the tools, stakeholder support and activity are in place but the lack of strategy means implementation is somewhat ad hoc. Education appears to be an afterthought rather than a planned and fully implemented strategic approach to reducing waste and improving recycling.

**There is a lack of understanding about the capacity of education to be integral to a strategic approach to waste reduction.** Many council staff and others who provided input into this evaluation expressed underlying skepticism about whether education programs have an impact on the waste stream or recycling behaviour. This is not

surprising when with some exceptions, these programs are generally not strategically delivered and are not evaluated. There is a need to develop a more strategic approach to the development of waste education at the local level.

**Limitations exist in the capacity of council personnel to design, deliver and evaluate education.** With a number of notable exceptions, council staff in Queensland demonstrate limited competence in the design and delivery of education. They appear to be relatively poorly equipped to handle this role and function and receive little technical or training support to carry this responsibility forward. Some of the exceptions include Toowoomba City, Townsville City, Mackay City, Gold Coast City, Maroochy Shire and Johnstone Shire. In some of these, the best quality programs are being delivered by contractors [e.g. Wipe Out Waste on the Gold Coast and Waste Alert in Maroochy]. Important to this general conclusion are the following issues:

- There is a high degree of support from most waste contractors for the use of education, and councils should be mindful of this when developing new contracts.
- In general those staff employed by contractors to design and deliver education do understand its use and delivery, but often only from a schools perspective. In the main they have a teaching background and therefore there is not a strong culture or resource for community education.
- Some high quality documentation exists to assist design delivery and evaluation of education but it does not appear to be widely used. For example *Providing the Links: A Waste Education Teaching Resource*; produced by the contractor Envirocom; and *Wastewise: Waste Education in Queensland*, produced by the Queensland EPA. The following extract from *Wastewise* sets the scene for, and supports a quality approach to education delivery but the reality does not appear to match this rhetoric. It would seem that the level of “on the job” training and support does not match the level of documentation.

*Wastewise: Waste Education in Queensland*

Extract form the Foreword

“Communication, education and support are critical in building the community’s understanding, knowledge and skills in waste minimisation and recycling. They are also important in achieving positive changes in attitude and behaviour by assisting individuals to make conscious decisions to avoid waste and preserve resources in all aspects of their lives.

To achieve behavioural change in the community, it is essential that education services are uniform in approach and design, that each element supports the others, and that community members can see and are kept informed of the impacts of their involvement and efforts.

**‘Waste education in Queensland – A guide to developing, implementing and evaluating waste education programs’** was designed with each of these elements in mind. The State Government and Queensland industry have joined forces to jointly fund the **‘Waste education in Queensland’** guide under the National Packaging Covenant.

More that 90 percent of Queenslanders now have access to a local government designed and delivered household recycling program with each program tailored to fit local conditions. The **‘Waste education in Queensland’** guide can be easily

adapted to suit existing recycling programs in the State. This will enable local governments to have an active and informed local community that will be able to influence positive change and a better environment for ours and future generations to enjoy.”

**There is clearly an overemphasis on schools programs.** All of the data collected for this project, either from all Queensland councils or from the location specific studies, indicates that school students are the number one target for educational activity. Apart from the Gold Coast however, there appears to be very little effort in promoting communication between students and their parents and so maximizing the community impact of a schools program.

Certainly delivering programs for children and young people is an investment in the future; but we have a consumption and a waste problem now. Are students being targeted because they are a “captive market” rather than a strategic need.

Comparatively, adults in the community, at home, at work and at play are under-targeted by Queensland waste education programs. The opportunity for immediate impacts on the waste stream and recycling are potentially missed because those generating the waste now are not directly targeted with education aimed at changing their practices. In a lifelong learning sense, education does not equal school.

**Education programs are poorly linked to the monitoring data about waste to landfill or recycling.** Many councils and their contractors are collecting and reporting on vast amount of data about waste to landfill, recycling and contamination of recycled material. It does not appear that this data is linked in any way to education activity. For example a number of councils conduct high profile launches of their programs and/or are involved in public waste events [for example Clean Up Australia Day]. There is no evidence collected from regular monitoring to demonstrate immediate impact on waste and recycling. Yet such measurement is possible and data is relatively simple to obtain.

Similarly there is a need for a closer relationship to be drawn between the education program and the waste data more generally, so as to determine whether there has been discernible impact. The *Wipe Out Waste* Report identifies this as a key issue for this excellent program and proposes some ways to collect the necessary data. Given the level of implementation of this program, this is an appropriate next step. Other projects have major development and delivery issues to sort out, before they look at more effectively linking the impact of the program to the waste stream.

**Education Programs are generally not well evaluated.** Despite some claims to the contrary waste education in Queensland lacks an evaluation culture. Programs are not well linked to behaviour and operational change objectives, and as indicated above they are not measured for their impact on the amount of waste reduced or recycling increased. Very few programs can even identify how knowledge has changed among the people that they target; even less can identify behavioural outcomes.

With specific regard to major education efforts few programs monitor waste to landfill or recycling data to measure the direct impact of the program. It is as though the

intervention occurs at a level removed from the issue. This is not so unusual but it is disturbing from two points of view. First - will funding continue to be provided for education programs if they cannot demonstrate impact? Second - for education providers it is essential to see the impact of activity on behaviour and/or waste; otherwise, why do it?

## **Recommendations**

The recommendations below are directed at promoting improvements across the whole of Queensland in waste education. Within each of the location-specific reports there are also recommendations for improving the delivery of facility based education programs conducted by LAWMAC, Maroochy Shire Council The Gold Coast City Council and Toowoomba/DDROC. These are included in this report at appendix 5.

### *Recommendations about Extending the use of Education*

Education is an important, relatively inexpensive and potentially very powerful part of a council's waste management strategy. It is significantly underutilized by Queensland Councils.

**Q1. It is recommended that the Queensland EPA works collaboratively with local government, through the Local Government Association of Queensland and as appropriate with waste contractors, to promote increased use of education about waste in every council. Where appropriate to need and location, programs might be facilities based. In furthering this recommendation it is important that education activity should form a part of every waste contract.**

### *Recommendations about the Strategic Approach and Targets for Waste Education*

It is clear that many councils do not have a strategic approach to the delivery of education. This hampers impact significantly.

**Q2. In line with the process identified in *Wastewise* [see above] and the content of this report, it is recommended that all councils develop or review their strategic approach to the use education to reduce waste.** In doing this all councils should review their strategic approach towards the primary targets for their local waste education programs. Then Councils should revise their range of interventions accordingly, so that targets with higher order needs and/or those who are more crucial to waste management efforts become the priority.

**Q3. The EPA and councils review the emphasis on school students as the primary target for waste education programs. It may be that reduced efforts are required with students and that more community education should occur.**

**Q4. It is clear that there is insufficient education aimed at business and industry and tourists/visitors. In many locations these groups are the major waste generators. It is recommended that the Environmental Protection Agency strongly encourages councils to develop and deliver more effective education programs targeting these groups.**

### *Recommendation about Training*

This report demonstrates that some council staff require training to help them undertake their programs. The following recommendation addresses this need.

**Q5. More training and support is required for council staff to enhance their understanding and use of education as an integral part of an effective waste management strategy. It is recommended that the Queensland EPA in conjunction with the LGAQ should identify funding and optional delivery methods so that this training can occur as soon as possible.**

*Recommendation about Evaluation*

The Queensland EPA in conjunction with waste contractors, the Local Government Association of Queensland and individual councils must build an evaluation culture among education projects. This culture should extend beyond the process level; collection of data about number of participants and whether or not they liked the program. Evaluation processes need to collect information about knowledge change, attitude change and behaviour [or behavioural intent] change as a result of education and where possible tie this to changes in waste to landfill, recycling, and contamination rates. Evaluative data should be collected in a range of ways, directly from those involved, and indirectly through resident satisfaction surveys and audits, monitoring of waste data and the impact of educational interventions.

**Q6. It is recommended that the Queensland EPA and its stakeholders fund a project designed to assist councils to evaluate their waste education programs more effectively. This would involve the development and delivery of training for council staff about evaluation and the development of guidance on how to use existing waste data to evaluate program impact.**

*Recommendation about mobile and fixed facilities*

**Q7. Appendix 4 contains an initial draft of guidelines for the development and use of mobile and fixed education facilities. It is recommended that the Queensland EPA works with local government staff to further develop and publish these as support materials for councils.**

**Q8. Education from mobile and/or fixed facilities should remain a part of the mix of educational approaches used in Queensland however, they are not the only aspect of a quality waste education program. Decisions about the strategic need for a facility should be made at the local level. It is recommended that all councils in Queensland review their approach to waste education to determine whether a facility based education program would be appropriate to their needs and what its location would be.**

**Q9. All of the recommendations directed towards the location specific waste education facilities are included in this report at Appendix 5. It is recommended that the Queensland Environmental Protection Agency reviews these recommendations and strongly promotes their implementation by the councils [groups of councils] that are conducting these projects.**

Appendix 1. Outcomes Hierarchy for the Project

<b>Outcome</b>	<b>Relevant Goal[s] of the Study</b>	<b>Evaluation Questions</b>	<b>Data Sources</b>
9. Recommendations about the strategic use of education in waste facilities in the context of a broader education program.	Goal 2	Where does education centred on waste facilities [fixed or mobile] fit in the scheme of a broader waste management [education] program?	<ul style="list-style-type: none"> <li>• Analysis of and conclusions from the results of entire study</li> </ul>
8. Recommendations about the future strategic placement and use of waste facilities for education.	Goal 2	How might waste education facilities be better structured used and located in the future?	<ul style="list-style-type: none"> <li>• Analysis of and conclusions from the results of entire study</li> </ul>
7. Evidence that education has an impact on waste generation/recycling/disposal.	Beyond the study goals	Is there any evidence that education activity has had an impact on waste generation, recycling or disposal?	<ul style="list-style-type: none"> <li>• Local government, especially from Council Questionnaire and from the results of the 4 case study projects.</li> </ul>
6. Education is an effective tool in changing the attitudes and behaviours of its targets	Goal 5	What evidence is there that education about waste effectively changes the behaviours and attitudes of its targeted participants?	<ul style="list-style-type: none"> <li>• Council questionnaire</li> <li>• Contractors questionnaire</li> <li>• Key Informants Focus Group, each location</li> <li>• Stakeholder questionnaire, each location</li> <li>• Community, student and teacher surveys each location</li> <li>• Internet search and other data</li> </ul>
5. Education conducted through waste facilities [mobile and/or fixed] has a strategic place in the mix of education strategies for waste management.	Goal 4	Where does education centred on waste facilities [fixed or mobile] fit in the scheme of a broader waste management [education] program?	<ul style="list-style-type: none"> <li>• Analysis and conclusions drawn from the entire study, most especially the four case study projects</li> </ul>

<p>4. Specific access, knowledge, attitude and behaviour impacts from each of the four case study projects as per outcomes hierarchy for each case study location.</p> <ul style="list-style-type: none"> <li>• Gold Coast</li> <li>• Maroochy</li> <li>• Toowoomba/EDROC</li> <li>• LAWMAC</li> </ul>	<p>Goal 3 and project specific objectives</p>	<p>What were the specific impacts of the education provided through the waste facility on the knowledge and attitudes of those who accessed it?  What were the specific impacts of the education provided through the waste facility on the behaviours of those who accessed it?  Also see evaluation questions in the Outcomes Hierarchy for each of the four study projects</p>	<ul style="list-style-type: none"> <li>• Project documentation for each location</li> <li>• Key Informants Focus Group, each location</li> <li>• Stakeholder questionnaire, each location</li> <li>• Community, student and teacher surveys each location</li> </ul>
<p>3. Detailed information about waste education facilities [and other education activities] conducted across Queensland by local government</p>	<p>Goal 1</p>	<p>What is the scope of education activity conducted by Queensland councils?  What is the relationship between education delivered through waste facilities and other waste education programs?</p>	<ul style="list-style-type: none"> <li>• Survey of all councils [in conjunction with LGAQ]</li> <li>• Contractor's survey</li> </ul>
<p>2. Undertake all evaluation activities as approved.</p>	<p>Goal 1 through 5.</p>	<p>Has the approved evaluation been conducted and the report delivered to the Qld EPA?</p>	<p>Progress review and approval by Project Manager</p>
<p>1. Develop the evaluation logic, relevant outcome hierarchies, methodology and instruments in accordance with the Project Brief</p>	<p>Goal 1 through 5.</p>	<p>Has the evaluation been prepared in accordance with the brief?</p>	<p>Scoping and supplementary report</p>

## Appendix 2

### Queensland Waste Education Evaluation Project Council Survey Responses Received

Townsville City Council  
Kolan Shire Council  
Ipswich City Council  
Cook Shire Council  
Bowen Shire Council  
Herberton Shire Council  
Banana Shire Council\*\*  
Mirani Shire Council  
Stanthorpe Shire Council  
Gold Coast City Council  
Broadsound Shire Council  
Boonah Shire Council  
Pine Rivers Shire Council  
Chinchilla Shire Council  
Mackay City Council  
Hinchinbrook Shire Council  
Redland Shire Council  
Caboolture Shire Council  
Logan City Council  
Noosa Shire Council  
Johnstone Shire Council  
Nebo Shire Council\*  
Tara Shire  
Caloundra Shire  
Maroochy Shire  
Warwick Shire  
Rockhampton City  
Toowoomba City  
Rockhampton City  
Inglewood Shire  
Wambo Shire  
Jondaryan Shire  
Millmerran Shire  
Cambooya Shire  
Clifton Shire  
Crows Nest Shire

Central Queensland Local Govt Association on behalf of member councils. Covers activity in 14 member councils, so this increases the response rate

\*incomplete surveys but most of the data is included in other ways [e.g. letter]

\*\* two survey forms [different] from the same council

#### **Appendix 3: Questionnaires**

#### **Queensland Environmental Protection Agency Evaluating Waste Education**

## Council Survey

The Queensland Environmental Protection Agency [EPA], with support from the Local Government Association of Queensland [LGAQ], is conducting an evaluation of waste education activities across the state.

This evaluation is being conducted by an independent company, T Issues Consultancy whose principal is Grahame Collier.

There are two components of this study:

- an in-depth evaluation of four waste facility-based education programs located:
  - on the Gold Coast
  - in Maroochydore
  - in Toowoomba and EDROC
  - in Northern Queensland, through 29 councils affiliated with LAWMAC.
- a Queensland wide component.

As part of the whole of Queensland study, your assistance in completing the attached questionnaire would be appreciated. It will take approximately 10 minutes to complete and should be returned to Grahame Collier at [tissues@acay.com.au](mailto:tissues@acay.com.au) [or fax 02 9949 3703 or mail to, T Issues Consultancy PO Box 728, Balgowlah NSW 2093] by **March 3 2005**.

Some more in-depth follow up information may be sought from a small number of councils in order to develop case studies. For this reason, a contact person and telephone number/email address are requested.

Information collected through this questionnaire is confidential. It will be collated, analysed and provided in a report to the Queensland EPA. Results will be provided to the LGAQ. Information about

For further information about this study, please contact Grahame Collier at (02 9948 8243 or at [tissues@acay.com.au](mailto:tissues@acay.com.au) ) and/or Peter Collins at the Queensland EPA at 07 3227 7966 or [peter.collins@epa.qld.gov.au](mailto:peter.collins@epa.qld.gov.au)).

## Qld EPA Waste Education Council Questionnaire

Please answer the following questions about your Council's waste education program by circling or "bolding" the best answers and writing in the spaces provided. Skip any questions which don't apply to your Council.

Please send the form back to Grahame Collier at [tissues@acay.com.au](mailto:tissues@acay.com.au) [or fax 02 9949 3703 or mail to T Issues Consultancy PO Box 728, Balgowlah NSW 2093] **by March 3, 2005.**

1	Name of Council _____		
2	Name of officer _____		Phone _____
	Email Address _____		
3	Is education a part of your council's approach to waste management? 1 No      2 Development in progress      3 Yes [Go to Question 5]		
4	If there is <u>no</u> waste education program currently in place, why is that? _____ _____ <i>Thank you, you have finished. Please send back your response.</i>		
5	Do you deliver education programs to the following <u>school students</u> ?		
	a. infants	1 No	2 Yes
	b. primary school	1 No	2 Yes
	c. secondary school	1 No	2 Yes
6	What are the objectives of waste education for school <u>students</u> ?		
	a. to provide information about recycling	1 No	2 Yes
	b. to encourage people to recycle	1 No	2 Yes
	c. to improve compliance with recycling systems	1 No	2 Yes
	d. to improve attitudes to waste management and recycling	1 No	2 Yes
	e. to change people's recycling and compliance behaviour	1 No	2 Yes
	f. to improve awareness of reuse and reduction of waste	1 No	2 Yes
	g. to reduce the waste taken to landfill	1 No	2 Yes
	h. to increase self reported waste reduction behaviour	1 No	2 Yes
	i. Other [please specify] _____		
7	Do you deliver education programs to <u>residents</u> ?		1 No    2 Yes
	If so, does this include the following?		
	a. brochures and similar	1 No	2 Yes
	b. stickers/fridge magnets	1 No	2 Yes
	c. calendars	1 No	2 Yes
	d. radio advertisements	1 No	2 Yes
	e. press advertisements	1 No	2 Yes
	f. outdoor advertisements	1 No	2 Yes
	g. press releases/ local column	1 No	2 Yes
	h. press advertisements	1 No	2 Yes
	i. other [please specify] _____		
8	What are the objectives of waste education for <u>residents</u> ?		

	<ul style="list-style-type: none"> <li>a. to provide information about recycling</li> <li>b. to encourage people to recycle</li> <li>c. to improve compliance with recycling systems</li> <li>d. to improve attitudes to waste management and recycling</li> <li>e. to change people's recycling and compliance behaviour</li> <li>f. to improve awareness of reuse and reduction of waste</li> <li>g. to reduce the waste taken to landfill</li> <li>h. to increase self reported waste reduction behaviour</li> <li>i. Other [please specify] _____</li> </ul>	1 No	2 Yes
9	<p>Do you deliver education programs to <u>business/industry</u>?</p> <p>If so, does this include the following?</p> <ul style="list-style-type: none"> <li>a. business/industry trade events</li> <li>b. written information</li> <li>c. audits/environmental assessment programs</li> </ul> <p>Other [please specify] _____</p>	1 No	2 Yes
10	<p>What are the objectives of waste education for <u>business/industry</u>?</p> <ul style="list-style-type: none"> <li>a. to provide information about recycling</li> <li>b. to encourage people to recycle</li> <li>c. to improve compliance with recycling systems</li> <li>d. to improve attitudes to waste management and recycling</li> <li>e. to change people's recycling and compliance behaviour</li> <li>f. to improve awareness of reuse and reduction of waste</li> <li>g. to reduce the waste taken to landfill</li> <li>h. to increase self reported waste reduction behaviour</li> </ul> <p>Other [please specify] _____</p>	1 No	2 Yes
11	<p>Do you deliver education programs to <u>visitors/tourists</u>?</p> <p>If so, does this include the following?</p> <ul style="list-style-type: none"> <li>a. signage</li> <li>b. billboards or other outdoor material</li> <li>c. press or radio advertisements</li> <li>d. print material in location [e.g. hotels etc]</li> <li>e. other [please specify] _____</li> </ul>	1 No	2 Yes
	<p>What are the objectives of waste education for <u>visitors/tourists</u>?</p> <ul style="list-style-type: none"> <li>a. to provide information about recycling</li> <li>b. to encourage people to recycle</li> <li>c. to improve compliance with recycling systems</li> <li>d. to improve attitudes to waste management and recycling</li> <li>e. to change people's recycling and compliance behaviour</li> <li>f. to improve awareness of reuse and reduction of waste</li> <li>g. to reduce the waste taken to landfill</li> <li>h. Other [please specify] _____</li> </ul>	1 No	2 Yes
9	<p>Do you deliver education programs to any other target groups?</p> <p>1 No                      2 Yes</p> <p>If so, please specify the target group, the method of delivery and the objectives.</p> <p>_____</p>		

	_____																		
10	<p>How are waste education programs funded?</p> <p>1 funded directly by Council  2 funded as part of the contract with the waste contractor  3 funded by a grant from another agency  4 funded by another means. (Please specify) _____</p>																		
11	<p>If waste education is funded as part of a waste contract who is the contractor and what percentage of the contact is allocated to education activity?</p> <p>Contractor _____</p> <p>a) No education component  b) Up to 5% is allocated to education  c) Between 6% and 10% is allocated to education  d) Between 11% and 20% is allocated to education  e) Between 21% and 40% is allocated to education  f) Over 40% is allocated to education</p> <p>Note responses to this question are commercial in confidence</p>																		
12	<p>Have you conducted an evaluation or collected any other evidence that the waste education works?</p> <p>1 No                      2 Yes</p> <p>Please describe the available evidence. _____</p> <p>_____</p>																		
13	<p>If no evaluation has been undertaken, why is that?</p> <p>_____</p> <p>_____</p>																		
14	<p>Did the evaluation show any of the following?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">i. improvements in rate of recycling</td> <td style="width: 10%;">1 No</td> <td style="width: 20%;">2 Yes</td> </tr> <tr> <td>j. improved compliance with recycling system</td> <td>1 No</td> <td>2 Yes</td> </tr> <tr> <td>k. evidence of reduced waste</td> <td>1 No</td> <td>2 Yes</td> </tr> <tr> <td>l. evidence of reuse options being taken more often</td> <td>1 No</td> <td>2 Yes</td> </tr> <tr> <td>m. reduction in littering</td> <td>1 No</td> <td>2 Yes</td> </tr> <tr> <td>n. Other [please specify] _____</td> <td></td> <td></td> </tr> </table>	i. improvements in rate of recycling	1 No	2 Yes	j. improved compliance with recycling system	1 No	2 Yes	k. evidence of reduced waste	1 No	2 Yes	l. evidence of reuse options being taken more often	1 No	2 Yes	m. reduction in littering	1 No	2 Yes	n. Other [please specify] _____		
i. improvements in rate of recycling	1 No	2 Yes																	
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k. evidence of reduced waste	1 No	2 Yes																	
l. evidence of reuse options being taken more often	1 No	2 Yes																	
m. reduction in littering	1 No	2 Yes																	
n. Other [please specify] _____																			
15	<p>Please provide the specific research findings (e.g. 10% reduction in waste over 2 year period) here or attach a copy of the evaluation report.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>																		
16	<p>Are there any other comments you would like to add on the subject of waste management education?</p>																		



- on the Gold Coast
- in Maroochydore
- in Toowoomba and EDROC
- in Northern Queensland, through 29 councils affiliated with LAWMAC.
- a Queensland wide component.

As part of the whole of Queensland study, your assistance in completing the attached questionnaire would be appreciated. It will take approximately 15 minutes to complete and should be returned to Grahame Collier at [tissues@acay.com.au](mailto:tissues@acay.com.au) [or fax 02 9949 3703 or mail to, T Issues Consultancy PO Box 728, Balgowlah NSW 2093] **by March 3 2005**.

Waste contractors have a lot of information which may assist in evaluating the reach, extent or effectiveness of local waste education efforts and your assistance in completing the attached questionnaire would be greatly appreciated.

All information that you provide will be treated as confidential. While it will be reported in a general way, commercial in confidence provisions will apply to individual information. Information will be cross checked against that provided by Councils.

For further information about this study, please contact Grahame Collier at (02 9948 8243 or at [tissues@acay.com.au](mailto:tissues@acay.com.au) ) and/or Peter Collins at the Queensland EPA at 07 3227 7966 or [peter.collins@epa.qld.gov.au](mailto:peter.collins@epa.qld.gov.au)).

## Queensland EPA Waste Education Evaluation: Waste Contractors Survey

Please answer by circling the best response or writing in the space provided. Skip any questions that don't apply to your company. Note that all information is commercial in confidence.

Please send the completed form to Grahame Collier at [tissues@acay.com.au](mailto:tissues@acay.com.au) [or T Issues Consultancy PO Box 728, Balgowlah NSW 2093] **by 3/3/05**

1	Company Name _____																												
2	Name _____ Job title _____																												
3	How many Councils does your company provide waste contract services for? _____																												
4	How often is providing education services part of the contract? 1 never    2 occasionally    3 usually or always																												
5	<p>If there is no education component in the contract, why might this be the case? <i>Mark the appropriate response [more than one if necessary]</i></p> <ul style="list-style-type: none"> <li>• The Council was not interested in negotiating an education component..... Comment.....</li>   <li>• There were insufficient resources in the contract to fund education....Comment....</li>   <li>• There were too many higher waste management priorities..... Comment....</li>   <li>• Other, please specify</li> </ul>																												
6	<p>When your company provides education, does it cover the following?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">j. waste reduction and consumption issues</td> <td style="width: 10%;">1 No</td> <td style="width: 10%;">2 Sometimes</td> <td style="width: 10%;">3 Yes</td> </tr> <tr> <td>k. reuse of products considered waste</td> <td>1 No</td> <td>2 Sometimes</td> <td>3 Yes</td> </tr> <tr> <td>l. how and when recycling is done</td> <td>1 No</td> <td>2 Sometimes</td> <td>3 Yes</td> </tr> <tr> <td>m. what can be recycled</td> <td>1 No</td> <td>2 Sometimes</td> <td>3 Yes</td> </tr> <tr> <td>n. avoiding of contamination of recyclables</td> <td>1 No</td> <td>2 Sometimes</td> <td>3 Yes</td> </tr> <tr> <td>o. littering issues</td> <td>1 No</td> <td>2 Sometimes</td> <td>3 Yes</td> </tr> <tr> <td>p. Other content areas; please detail.</td> <td></td> <td></td> <td></td> </tr> </table>	j. waste reduction and consumption issues	1 No	2 Sometimes	3 Yes	k. reuse of products considered waste	1 No	2 Sometimes	3 Yes	l. how and when recycling is done	1 No	2 Sometimes	3 Yes	m. what can be recycled	1 No	2 Sometimes	3 Yes	n. avoiding of contamination of recyclables	1 No	2 Sometimes	3 Yes	o. littering issues	1 No	2 Sometimes	3 Yes	p. Other content areas; please detail.			
j. waste reduction and consumption issues	1 No	2 Sometimes	3 Yes																										
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n. avoiding of contamination of recyclables	1 No	2 Sometimes	3 Yes																										
o. littering issues	1 No	2 Sometimes	3 Yes																										
p. Other content areas; please detail.																													
7	<p>For each council where you are the contractor delivering education indicate the targets of the education that you are delivering</p> <ul style="list-style-type: none"> <li>• <i>Schools programs. Number of councils.....</i></li>   <li>• <i>Industry/business programs. Number of councils.....</i></li> </ul>																												

	<ul style="list-style-type: none"> <li>• <i>Residents programs. Number of councils.....</i></li> <li>• <i>Visitors programs. Number of Councils.....</i></li> </ul>
8	<p>Has any of this education been evaluated? 1 No    2 Yes</p>
9	<p>If so, what evaluation methods have been used?</p> <hr/>
10	<p>What were the main results and conclusions?</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
11	<p>Are there any further comments you would like to make about waste management education?</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

**Thank you for your help**

## Appendix 4: Establishing facilities based education programs: Some guidelines for effective programs.

Note the following is an initial draft, see Recommendation...

Fixed Location Education Facilities	Mobile Education Facilities, [a bus, van or wagon]
<p><b>Choosing to build a fixed facility</b> Fixed facilities operate best when the following factors are taken into account:</p> <ul style="list-style-type: none"> <li>• They can be established near a MRF or landfill and educational programs can be linked to on-site experience.</li> <li>• They make maximum use of a flexible, purpose built teaching space.</li> <li>• The facility is designed so that adult and school oriented learning can occur.</li> <li>• How people are going to access the facility is considered at the outset. The cost of excursions for schools is a real issue and is potentially a reason not to build a facility. Care must be taken at the planning stage not to build a white elephant.</li> </ul>	<p><b>Choosing a mobile facility</b> Mobile facilities operate best when the following factors are taken into account:</p> <ul style="list-style-type: none"> <li>• There is a need to cover a wide geographical area.</li> <li>• The intention is to target large numbers of people.</li> <li>• There is a need to share the facility between councils.</li> <li>• Exposure via the media is desirable</li> <li>• Resources are available to move the facility from place to place.</li> <li>• If the facility can be staffed in an ongoing manner. Failing this there should be high quality teaching/ learning materials produced so that the facility can be used as a learning centre by local teachers and others.</li> <li>• The facility is designed so that adult and school oriented learning can occur.</li> <li>• Movement of the facility from place to place is relatively simple.</li> </ul>
<p><b>Locating the Facility</b> Choose a suitable location for the facility.</p> <ul style="list-style-type: none"> <li>• With parking for buses and cars included,</li> <li>• Preferably place the facility as near to public transport routes if possible.</li> <li>• Limit free parking at the facility, so that the participants in the program are encouraged to share cars or use buses so as to reduce environmental impact.</li> <li>• Care must be taken to avoid injury for participants. Stringent protocols must be developed and adhered to for landfill or MRF visits.</li> </ul>	<p><b>Locating the Facility</b> Choose a suitable site to place the facility in each location.</p> <ul style="list-style-type: none"> <li>• This should allow for maximum exposure, and be central to the particular site. Under the trees on the back oval of a school does little to further the educational messages associated with the presence of the facility.</li> <li>• Place the facility nearby to the road but in a safe location</li> <li>• Leave space around the facility so that people can participate fully and segment off a space so that the facility gets maximum possible exposure for incidental messages [e.g. signage etc].</li> <li>• Care must be taken to avoid injury for participants. Stringent protocols must be developed and adhered to for movement in and around the facility.</li> </ul>

<p><b>Using the facility</b> Maximum use should be made of the facility by</p> <ul style="list-style-type: none"> <li>• wide promotion into schools and the community</li> <li>• a flexible booking system which allows easy access</li> <li>• offering the use of the facility for meetings and other purposes, so as to maximise the exposure</li> </ul>	<p><b>Using the facility</b> Maximum use should be made of the facility by</p> <ul style="list-style-type: none"> <li>• wide promotion into schools and the community</li> <li>• a flexible booking system which allows easy access</li> <li>• offering the use of the facility for a wide range of purposes [shows events, street fairs etc, so as to maximise the exposure and broadly promote the message</li> </ul>
<p><b>Promoting the facility and its messages</b></p> <ul style="list-style-type: none"> <li>• Develop an aggressive PR plan which maximises the exposure of the facility in the local press. Develop a press kit that supports this</li> <li>• Use the facility as a site for a range of public launches and other events.</li> <li>• Work closely with the communications experts in council and locally to determine ways of furthering the waste messages communicated to the community through the facility</li> <li>• Feed the press good news stories, with a real life emphasis that emerge from the programs that the facility conducts. Use real quotes and real people where possible</li> </ul>	<p><b>Promoting the facility and its messages</b></p> <ul style="list-style-type: none"> <li>• Develop an aggressive PR plan which maximises the exposure of the facility in the local press.</li> <li>• Use the facility as a site or backdrop for a range of public launches and other events.</li> <li>• Work closely with the communications experts in council and locally to determine ways of furthering the waste messages communicated to the community through the facility</li> <li>• Feed the press good news stories, with a real life emphasis that emerge from the facility. Use real people and their waste stories.</li> </ul>

## **Appendix 5. Recommendations from Location Specific Projects Gold Coast City Council *Wipe Put Waste Program***

GC 1 It is recommended that the Gold Coast City Council gives the *Wipe Out Waste Program* greater prominence in the GCCC 2020 vision.

GC2. Given that Gold Coast City Council undertakes a resident satisfaction survey annually, it is recommended that GCCC uses this survey more fully to obtain data about the impact of *Wipe Out Waste* and resident needs for complementary programs

GC3. With the advent of the second van, it is recommended that GCCC and Envirocom identify ways in which the *Wipe Out Waste* program can be extended more fully into the adult community so that adults are provided with a comprehensive waste education program that matches that offered to primary aged students. For the purpose of this recommendation TAFE and the University should be seen as part of the adult community.

GC4. There is value in tightening the relationship between schools and community oriented programs. The following recommendations are provided to Envirocom and GCCC about how to do this:

- In each location offer a parents' session in the *Wipe Out Waste* van, immediately after the finish of the day or before the start of school. Promote this widely through the schools and ask students to encourage their parents to attend.
- Link the *Wipe Out Waste* visit to the school fete or other major local event, so that the van is used in school and with the community during the same week.
- Offer the P&C or equivalent an information session about the *Wipe Out Waste Program*. Perhaps GCCC could provide a guest speaker for these events.
- Offer a small incentive [prize] for the household that comes up with the best approach to waste reduction at each school visit. If resources are available this incentive could be a household waste and energy audit.
- Run a waste free lunch day in conjunction with the school canteen and the community on one day of the van's visit.

GC5. Slight modifications are recommended to Envirocom for the general content of lessons.

- Increase the focus on waste reduction behaviour, both student's own behaviour and that of their parents.
- In all lessons strongly encourage students to take messages home and get their parents to change behaviour.
- Liaise with GCCC to film the local MRF in operation and incorporate it into the content of programs.
- Increase the focus on anti-littering messages in the lessons for younger students
- Increase the weight of the sustainability message for older students

GC6. It is recommended that because of the quality of the *Wipe Out Waste* program, Envirocom through the GCCC seeks funding to develop and conducts training for councils in other jurisdictions about program planning, management and evaluation for waste facilities education.

GC7. It is recommended that Envirocom reviews its evaluation strategy for *Wipe Out Waste* and identifies ways to build more rigorous assessment of knowledge and behavioural impact of the program. This could include:

- Adapting some questions from the questionnaires in Appendix 3 into the evaluation strategy.
- Developing a pre and post visit questionnaire regime for some participants and/or their parents.
- Conducting limited household waste audits with pre and post the program activity in a small number of houses in a small number of schools.
- Identifying how to link educational visits to a school and/or Waste Challenge take-up with household disposal data.
- Conduct a competition in each school visited that gives a prize to the house that reduces its waste to landfill most in a one month period. Document the amount of waste to landfill reduction and/or materials recycled as an evaluation response to the program.
- Develop specific case studies about the success of the program. Place these on GCCC and Envirocom websites.

GC8. It is recommended that the GCCC and Envirocom identify ways to obtain more information about the impact of the *Wipe Out Waste* program on the waste stream. This might require the conduct of a specific study, beyond the current waste data information [see Appendix 4].

### **LAWMAC/Kerby Program**

Kerby is an excellent educational tool, but its effectiveness is severely limited by the lack of understanding of the educational process, a failure to evaluate its effectiveness and proper educational materials and systems. The following recommendations are designed to address these limitations and to ensure that full benefit is gained from an effective tool

K1. It is essential that if Kerby is to be used in schools that it must provide better links to the curriculum and the ongoing education process about waste and environment issues within the classroom before and after the visit. In this regard lesson plans are required that introduce Kerby and promote follow-up work after the bus has left the school [introduction to waste lessons]. These should be provided prior to the use of Kerby in all schools that Kerby visits see also recommendation K11].

K2. It is recommended that LAWMAC employ an education officer for a period of six months to develop a curriculum linked schools package of lesson materials for use with Kerby. In the main these should be focused on pre-school to primary aged children, with some lesson material for secondary students in a limited number of key learning areas only. In addition, this officer should develop a list of hints for using Kerby at local community events.

K3. Further to recommendations K1. and K2. above it is recommended that LAWMAC seek funding and appoint a full time education officer. The role of this officer would be to support councils in the delivery of education generally, to assist in maximizing the use of Kerby [and the proposed second LAWMAC bus as educational mechanisms and to develop appropriate educational materials which optimise the educational experiences and programs provided in each facility.

K4. Schools appear to be the major focus of the Kerby program. This is despite the fact that adults generate most of the waste and usually manage the recycling system at home. It is recommended that LAWMAC extend the use of Kerby as an adult

education tool. This might occur by strongly promoting the use of Kerby at all major community events, at school fetes and fairs, in shopping centres and tourist centres. During the time that Kerby is in town, maximum adult exposure is very important. As indicated in recommendation K2. above councils need support on how to gain the maximum use from Kerby as an adult education mechanism.

K5. It is recommended that training in how to plan, deliver and evaluate education for council staff in the LAWMAC region is urgently needed. This should focus in part on how to incorporate the use of Kerby into a strategic approach to education with the community and with school students. Such training should be mandatory for all LAWMAC member councils. It might incorporate case studies from LAWMAC councils about how Kerby has been used strategically as part of an ongoing community education process.

K6. It is recommended that a data base is established so that booking of Kerby and reporting can be carried out on line. Appendix 4 contains information about what this data base might contain. LAWMAC should develop this as soon as possible and makes its use mandatory for every Kerby user.

K7. It is recommended that LAWMAC develop a system for collating all of the information in the database [see recommendation ... above] into a Kerby annual report and that this should be provided to all stakeholders.

K8. It is recommended that LAWMAC developed an evaluation protocol for Kerby and that evaluation occurs at each occasion of use. Appendix 5 is provided to assist LAWMAC in this regard. In addition it is recommended that LAWMAC use the Teacher's Evaluation Form [see appendix 3] to collect information from teachers on each occasion that the bus visits a school.

K9. It is recommended that LAWMAC ensures that Kerby is used equitably across the entire region and by all member councils. It is of concern that some councils have not yet accessed Kerby and while distance and population issues are acknowledged, there is an urgent need to extend the reach of the program.

K10. It is recommended that LAWMAC identifies how Kerby might be used more effectively during the summer period. Perhaps a summer promotion at a major tourist centre/centres might be worth investigating and possibly trialing in the future.

K11. Currently schools that are provided with a Kerby visit get the whole thing for free and are not expected to provide anything in return for receiving an exciting, interesting educational experience for their students. This is not appropriate. It is recommended that LAWMAC places conditions on all schools that are visited by the bus. These include the following

- That schools who are to be visited by Kerby deliver the introduction the Waste lessons as recommended in 1 above
- That the evaluation activities for students, teachers and parents are undertaken in-school in line with Appendix 5. Schools that use Kerby have a responsibility to administer and collate the evaluation and provide a brief report to Council about its effectiveness.

### **Maroochy Shire Council: Waste Alert Program**

#### *Recommendations about Program Administration*

M1. It is recommended that Maroochy Council and the Queensland Environmental Protection Agency place the Waste Alert Program case study on their web sites.

M2. If the Characters 3Rs Dude and Captain Can Man have currency in the community it is recommended that Maroochy Shire Council consider extending their use beyond the Waste Alert Program and branding all their waste education programs with these characters [or one of them].

M3. In order to use the centre more equally across the year and to obtain much more use of the centre generally it is recommended that Maroochy Shire Council and Cleanaway use the February and March period as high profile months for community programs and events. This will require proactive booking during the later months of the previous year. It is further recommended that efforts are increased to encourage schools to book early.

M4. The MRF tour adds to the educational experience for all groups and is a major advantage in a fixed facility located near a MRF. It is recommended that Cleanaway and Maroochy Council identify how MRF tours can occur for all program participants, school students and the community. This might involve reviewing the adult/student ratio for school visits and determining how schools can bring sufficient number of adults on each visit.

M5. The MRF and Centre is currently underutilised and should be used more fully to become a fully regional education Centre. It is recommended that Cleanaway facilitate a meeting between Noosa, Caloundra and Maroochy Councils to identify if there are ways that this might occur in the medium to longer term.

#### *Recommendations about Evaluation*

M6. It is recommended that Maroochy Shire Council and Cleanaway review the evaluation strategy and develop a more in-depth and strategic approach to evaluation. As part of this, new surveys should be developed and implemented. These need to evaluate for knowledge, attitudes and behaviour changes as a result of the program and could be conducted pre and post the program. Evaluation should not just collect data about use and service satisfaction, and improved evaluation forms are required for all program components and targets [e.g. one for adults, one for teachers and one or more for students].

M7. It is recommended that as part of the revised evaluation strategy, Waste Alert educators document anecdotal feedback more completely and use this in the annual report, along with more quantitative information.

M8. Currently impacts from the Waste Alert program are not measured by affect on waste to landfill, and increases in recycling. It is recommended that Maroochy Council and Cleanaway review how information can be collected about the environmental impact of the Waste Alert Program

#### *Recommendations about program access*

M9. It is recommended that significant efforts are made to engage the broader adult community in the Waste Alert Program. Maroochy Shire Council and Cleanaway should continue to work together to develop a strategic approach for increasing community access to the Program and implement this as soon as possible. As part of this, written material about Waste Alert should be developed for the adult community.

M10. It is recommended that Cleanaway identifies ways to link the in-school and in-centre aspects of the schools program together and increase the number of classes [and students] accessing the centre.

M11. It is recommended that further consideration is given by Cleanaway concerning how the Waste Alert program might be directed towards students in secondary schools and in TAFE. There are significant gaps in the program at this end of the target market.

M12. Excursion costs will always be an issue in schools use of fixed location programs. While Waste Alert has gone some of the way in addressing this through the subsidy program, there is a need for further consideration of this issue. This is especially the case in the light of the relatively low number of classes per school that visit the centre. It is recommended that Cleanaway and Maroochy Shire Council review current arrangements with a focus group of school teachers, in order to identify other options for extending the use of the centre.

#### *Recommendations about program content*

M13. Both the schools and community aspects of the Waste Alert Program are heavily knowledge oriented. It is recommended that the content is reviewed by Cleanaway and the Maroochy Council so that attitudes and behaviour aspects are given a higher focus. It is essential that this program strongly promotes recycling and waste reduction behaviour and is able to document affect in this area.

### **Toowoomba City Council/DDROC. Waste Wagon Recommendations**

#### *Recommendations about program access*

T1. It is recommended that Toowoomba City Council identifies ways to link the in-school and in-community aspects of the schools program together and increases the number of classes [and students] accessing the Wagon. Greater numbers of Toowoomba students should be educated via the Wagon.

T2. More extensive and innovative use of the Wagon needs to occur across the Toowoomba community. Proactive engagement with community groups and through precincts is needed to grow the program's impact in the community. Use at small community event, fetes, street parties etc is recommended. In addition it is recommended that Council targets community organizations in a similar way to the current use of the Wagon with disability groups.

T3. It should be possible to increase the number of school students in Toowoomba who are educated via the wagon. It is recommended that Toowoomba City Council holds a focus group of interested teachers to determine ways in which the Wagon can have more impact. Reaching Secondary Schools and providing a teaching/learning resource for teacher use in the classroom prior to the visit are important parts of this expanded approach.

T4. It is clear that the use of the Wagon as an educational method needs to be extended across the DDROC. It is recommended that as a matter of urgency the Waste Management Sub-Committee of DDROC considers how to extend the use of the Wagon across the region. The following Scenario is presented for consideration. This was developed following the meeting of stakeholders and addresses all major barriers identified above.

#### **A Waste Wagon Scenario for the Future**

In line with recommendation T4. the following scenario is proposed for the use of the Wagon in the future, in order for it to be used across all DDROC councils. Major components of this scenario were drawn from the stakeholder focus group held on February 10, 2005.

In this scenario:

- The Waste Wagon becomes an integral regional educational resource strongly supported by the DDROC Waste Management Sub-Committee.
- Systems and information are established so that the Waste Wagon draws as little as possible on council resources and yet has maximum use across DDROC.
- There is an expectation that all DDROC councils will access the Waste Wagon for period totaling at least a three weeks every two years from 1 July 2005. The Waste Management Sub-Committee will monitor use.
- An on-line booking system is developed on DDROC's website so that member councils can book the Waste Wagon for periods up to a month. Block bookings of one week will be the minimum. DDROC will need to undertake some coordination of this and monitoring in the early stages to ensure that the system is effective.
- Councils should consider booking the Wagon for major local events and then building the schools program bookings around that time. This will require communication and DDROC coordination.
- In order to make this system work the following documents and protocols are required. Human and minimal dollar resources need to be found to produce these. Note; it is anticipated that approximately six weeks of work would be needed to complete the entire development process. Some existing Toowoomba and Envirocom products could be adapted for use across the ROC.
  - Booking system and Wagon Use Manual [e.g. towing etc]
  - A brochure, which forms the marketing tool for the Wagon
  - Generic press and banner advertisements which could be placed locally to inform the community that the Wagon will be in town
  - Teacher Kit so that local schools lessons and activities can be conducted by teachers in each school and not use council presenters
  - Material to assist councils to deliver presentations to community groups and at community events.
  - Information about the best ways of using the Wagon at community events, use as a static or staffed display. Using volunteers to staff the Wagon should also be canvassed.
  - Evaluation forms etc [see below]
- A mandatory teacher training requirement could be put in place, so that all schools using the Wagon could be required to have a member of staff trained in education about waste. Envirocom would be best placed to develop a cost effective training process.
- A feedback/evaluation protocol is developed as follows.
  - Feedback: This would involve a simple council user survey that is completed on-line by each council after each block visit.
  - Evaluation of students, teachers and adult community knowledge and behaviour, adapting the surveys developed in this facilities education evaluation project. It would be the responsibility of each booking council to ensure that an evaluation report is produced about each block booking and placed on the DDROC website.
- A Waste Wagon Annual report will be produced by the Waste Management Sub-Committee to be tabled at all councils. This will provide details of use, knowledge growth and behaviour change prompted by the Wagon's visit and resulting education programs.

*Recommendations about Program Administration*

T5. It is recommended that Toowoomba City Council and the Queensland Environmental Protection Agency place the Waste Wagon Program case study on their web sites.

T6 More could be made of the results of local competitions in Toowoomba. It is recommended that every time a Wagon competition is run, the sponsoring council collates and reports on results. This will assist in furthering waste reduction, reuse and recycling messages through the media.

T7. For a limited amount of money each council in DDROC could individualise education material for use in the Wagon. Velcro tabs could be used so that the Wagon could take on a more local flavour in each shire. It is recommended that each DDROC council considers the development of purpose built material and that Envirocom facilitates the development of this material by providing technical and logistic input.

T8. As part of a broadened approach to targeting adults it is recommended that Toowoomba City Council identifies and implements ways to use the Wagon to promote recycling and waste reduction by visitors.

#### *Recommendations about Evaluation*

T9. It is recommended that Toowoomba City Council, DDROC Waste Management Sub-Committee and Envirocom review the evaluation strategy for the Waste Wagon and develop a more in-depth and strategic approach to the evaluation of the program. As part of this, new surveys should be developed and implemented. These need to evaluate for knowledge, attitudes and behaviour changes as a result of the program and could be conducted pre and post the program. Evaluation should not just collect data about use and service satisfaction and improved evaluation forms are required for all program components and targets [e.g. one for adults, one for teachers and one or more for students].

T10. It is recommended that as part of the revised evaluation strategy, Waste Wagon use, effectiveness and efficiency data is collected by DDROC, and impacts on waste to landfill and recycling are also monitored. The collection of data, collation of data and reporting on the evaluation findings should be the responsibility of every user of the Waste Wagon.

T11. Toowoomba City Council is missing lots of valuable information about the community's waste management behaviour by not collecting information at community events. It is recommended that data collection methodology is developed for use at these events when the Wagon is on display.

T12. It is recommended that Toowoomba City Council identifies ways of assessing the extent to which education efforts are reducing the waste stream, increasing recycling rates and reducing contamination. At this stage a rudimentary analysis does not demonstrate that it is having an impact. A process undertaken in conjunction with the contractor needs to find ways of linking behavioural outcomes impacted upon by education with waste reduction.

