

Waste Education Facilities Evaluation: Wipe Out Waste Program

Gold Coast City Council



“Don’t thank me, thank the waste truck”

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About the title: “*Don’t thank me, thank the waste truck*” is a direct quote from one of the students who was involved in a lesson in the *Wipe Out Waste* van. He wrote this on the questionnaire after the thank you at the bottom of the last page.

Acknowledgement of input into this evaluation

The contributions of the following people are acknowledged. Without their willingness to provide data and/or be interviewed in depth, the evaluation would not have been possible

Phil Curran: Envirocom
Adrian Smith: Gold Coast City Council
Des Green: Gold Coast City Council
The staff of the *Wipe Out Waste* program
The teachers and students at participating schools

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Evaluation Highlights

Wipe Out Waste is a high quality school education waste reduction program. It compares very favourably when measured against other programs of a similar nature. The program:

- reaches a large number of school students, over 30,000 in the 2004 school year.
- provides a comprehensive range of curriculum linked lessons for all age ranges [eighteen lessons currently].
- is staffed by competent trained teachers who are well managed and supported by a highly competent management team.
- has been developed and is managed by an organisation that understand the use of education for waste reduction
- is very well supported by schools, rebooking rates and usage rates are very high and teacher feedback is extremely positive
- is well supported by the community and there is solid evidence of the program having direct impact on household waste behaviour, via the children that are educated.
- impacts on student knowledge and behaviour.
- is supported by high quality teaching/learning materials, a website and a range of related program so it is not just a one-off lesson.
- is flexible in that if the van cannot access the school then teachers provide in classroom lessons so that the program continues
- supports school staff and the school management to consider waste issues beyond a curriculum context.

The long term commitment by the Gold Coast City Council to fund the ‘**Wipe Out Waste**’ Program enables schools to include the program in their curriculum on an annual basis and to build teaching units that lead up to and follow the visit of the van.

This program is the benchmark for facilities based school education program

Given the focus on schools *the Wipe Out Waste* program has had a less discernable impact on the adult community, although the van is used at major community events.

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Introduction

The Gold Coast City Council has a long history of using community education to reduce waste and to promote resource recovery. Education of residents is seen as a priority means of reducing waste to landfill, with improved recycling a significant part of the message. The *Wipe Out Waste* Program is the priority means of carrying education messages about waste reduction, recycling and reuse into schools. It focuses primarily on educating primary school aged children and their families about waste through the use of a mobile education facility. Unlike some programs elsewhere, *Wipe Out Waste* has a specific schools focus, and the use of the facility at community events etc is a much lower level objective.

This report documents the activities of the *Wipe Out Waste* Program since 2000, and evaluates activity against a number of outcomes, which are linked to the objectives of the program. This evaluation forms a significant part of a broader evaluation of waste education activity across Queensland, which is described in the box below.

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 project]. The Queensland wide evaluation collects 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 will be incorporated into the broader Queensland evaluation report.

Note that this report provides evidence in the form of quantitative and qualitative data. Quotes, in italics, are used to illustrate qualitative findings. These are drawn from program records, annual and evaluation reports and focus discussion held by the evaluator. A series of graphs and tables are included to document quantitative results.

Objectives of the Program

The *Wipe Out Waste* Program is an initiative of the Waste Management Section of Gold Coast City Council and was officially launched in May 2000. The Program is conducted on behalf of the Council by EnviroCom Australia. The objectives of the program are to:

- promote the three Rs of the Waste Management Hierarchy: Reduce, Reuse, Recycle.
- encourage student awareness (and indirectly parents), of the need to conserve natural resources and to deal with waste in an environmentally friendly manner.
- educate students in the availability and practical use of Council’s recycling facilities and kerbside household recycling program.
- educate the public at special events on the availability and use of Council’s recycling facilities and kerbside household recycling program.
- promote vermiculture and composting to reduce waste to landfill and to provide a useable commodity.

Brief Description of the *Wipe Out Waste* Program

Note: the brief description below is augmented by that in the *Wipe Out Waste* Case Study, attached.

The *Wipe Out Waste* Program is structured around the Mobile Waste Education Facility (MWEF). This facility provides a unique learning environment and is a marketing icon for the program. The delivery and evaluation of lessons for primary schools presented from the waste van, a refurbished Council mobile library. Display features in the van include flip-top cupboards and layered display cabinets. All displays are interchangeable and can be easily adapted to suit varying age levels and curriculum needs. Displays focus on a variety of topics including the correct use of the Council waste collection service, the impacts of litter, worm farming (including a working worm farm) and composting. Space is also available to feature children's artwork and audio visual and web based education resources can also be accessed.

In addition the mobile facility is complemented by a number of other educational programs. These are:

An in-school program where educators visit pre, primary and secondary schools and deliver classroom based lessons.

The '*Wipe Out Waste*' Challenge that provides technical assistance, resources and advice to schools wishing to implement practical waste minimisation strategies. See Appendix 2 for a more complete description.

Supporting Resources to assist schools to incorporate waste management issues into the curriculum, including the 'Providing the Links' teaching resource, the *Wipe Out Waste* website, a series of children's storybooks and regular newsletters see Appendix 2].

Special Events & Competitions that serve both as marketing strategies for the Program, as well as further encouraging waste issues to be integrated into the curriculum; for example, the annual *Wipe Out Waste* poster competition.

Use at community events where the MWEF staffed by its educators attend and provide a community education program, thus enabling an important link between schools and the broader community.

Wipe out Waste is integrated within Education Queensland's curriculum outcomes, particularly those associated with the New Basics/Rich Tasks that emphasise the need for students to engage in learning that recognises ongoing change associated with social, technological and economic conditions, often examining real life issues affecting their community.

The long term commitment by the Gold Coast City Council to fund the *Wipe Out Waste* Program enables schools to include the Program in their curriculum on an annual basis and to build teaching units on the basis of the information and assistance provided. Council has commissioned a second facility which will come into service in the middle of 2005.

Components of the study

Data for this evaluation was drawn for a number of sources. The hierarchy in Appendix 1 describes each source as it provided data for each outcome. In summary sources included:

- Visit to the Gold Coast to gain appreciation of the facility and its use. Three *Wipe out Waste* lessons were observed at Merrimac State School. Then a write up of the program as a case study
- In-depth interview with the project manager and relevant council staff to determine use and impact information for each facility.
- Interview with the relevant waste contractor.
- Collection of data held by council and contractor about use, knowledge, behaviour and recycling rates within the target communities [jurisdictions].
- Review of relevant waste disposal, recycling and contamination [including waste audits] data, where available and applicable. Review of other existing data [community surveys etc].
- Three snapshot surveys; students, community teacher surveys. These were administered in the February, March 2005 period [see appendix 3]. 365 students, 6 adults and 11 teachers completed the surveys,
- Other stakeholder data collecting by focus group discussions and questionnaire about their thoughts and feelings regarding what works and what does not, and why.

Note re the snapshot surveys. February/March is probably not the ideal time for this to occur. In all locations other than the Gold Coast bookings were at a lower level than for the remainder of the year because of the time lag after the Christmas period. On the Gold Coast school bookings were high, but community use low.

Findings

Has the Wipe out Waste occurred as intended?

The Gold Coast City Council [GCCC] has established a strategic approach to the management of solid waste. This is contained within *2020 Vision on Waste*, which was released in September 2002. This vision focuses on ways that “*Gold Coast City can develop its capacity to be more sustainable and integrated in its approach to solid waste management.*” It establishes approaches to waste reduction, improved recycling and improved waste management within a context of high population growth and large tourist numbers. Baseline data in 2002 is established in the vision, which estimates that if population and tourism trends continued at the same rate, 68% more waste [over 636,000 tonnes] would need to be accommodated in landfill. This would be a huge cost to the Gold Coast community and the environment. Hence the establishment of the Vision and the strategic approaches to waste reduction that it establishes.

The vision is:

Naturally the world’s best solid waste manager.....because we will change the solid waste focus from collection and disposal to conservation and recovery and thus contribute to sustainable use of natural resources to enhance our lifestyle, economy and environment for current and future generations.

Education has a primary strategic role in achieving this vision. The GCCC has established eight strategic education programs, which combined seek to meet the goal of gaining *broad community commitment to the principles and practices of resource conservation and recovery*. It is within this context that the *Wipe out Waste* Program sits. It is notable however that *Wipe Out Waste* is not identified as a major separate program, within the vision. Rather it sits within the Cross Regional Education program and is given little prominence within the vision document. This is

an anomaly given the centrality of community education, most especially the schools' component to the GCCC's vision and goal.

The GCCC's Waste and Litter Education Strategy 2004 addresses this anomaly. *Wipe Out Waste* is identified as a prominent part of the program, with strategic directions identified for the future, including the purchase and fit out of a second van.

Information from key informants indicates that GCCC spends about \$1 per head on waste education. A significant proportion of this is for funding of *Wipe Out Waste*. This is a high-level contribution and indicates that the program is well supported by council. Apart from funding support, council also provides on the ground assistance by using one of its prime movers to move the facility from location to location. This is a major task and demonstrates important integration of the program within council.

Council has clearly established its support for a comprehensive schools program that aims to impact on waste now and to develop future Gold Coast citizens who reduce waste and are highly involved in recycling.

Envirocom, the contractor that manages the *Wipe Out Waste* Program has provided a comprehensive, multi faceted program that meets Councils desires and extends them. The schools program has significant curriculum links across a range of Key Learning Areas including; Science, Health and Physical Education, Art and Technology, and is very well accepted by schools and their teaching staff.

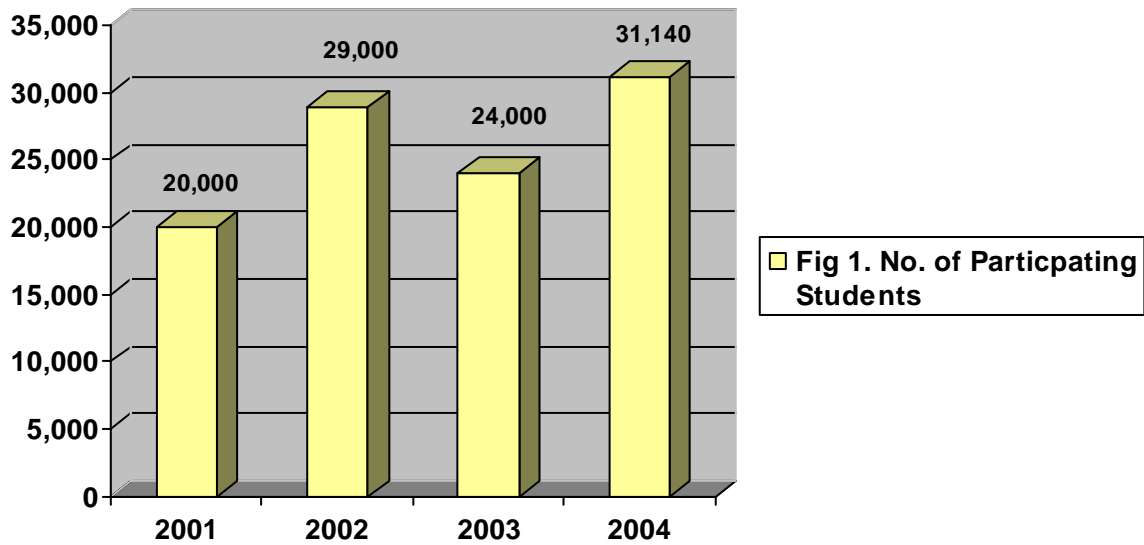
It is notable that *Wipe Out Waste* was used as a model by Toowoomba/EDROC and LAWMAC in the development of their approaches to mobile education facilities.

What is the level of access to the program by schools, students and the community?

Figure 1 shows the number of students participating in the *Wipe Out Waste* Program since its inception. The majority of students participate in the program through the MWEF.

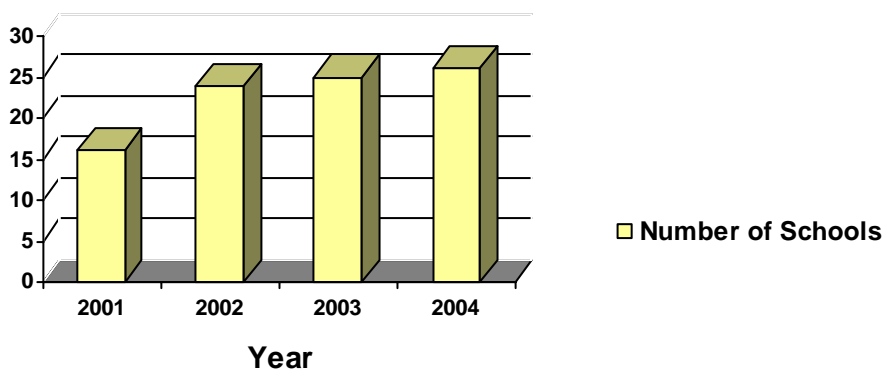
Since May 2000, 69 different primary schools have participated in some aspect of the program. Of the 69 schools, 64 were repeat participants of the program. At present there are 77 primary schools on the Coast; 51 of these schools have been visited at least once by the MWEF.

At the time of writing 45 schools had confirmed a booking for the MWEF in the 2005 school year and the program had commenced operation in the second week of the school year. Therefore lag time was minimised and the program was in operation for the maximum period of time possible. This is an important finding because it is of little value if the mobile facility sits in the garage



In addition the figure below shows the number of schools participating in non MWEF presentations, note that schools may be visited more than once during the year; figures do not include schools engaging in the *Wipe Out Waste Challenge*. In 2004 lessons were held with 56 classes from 31 schools.

Fig. 6 Non MWEF visits to schools



Community access data is less well quantified. The *Wipe Out Waste* van spends less than 10% of its time at community events, rather than at schools, and as indicated above the community component is less of a priority than the schools component of the program.

The events where the facility has a presence include the Gold Coast Show and Gold Coast Races. The facility is used at these events each year. Some other less major events are also targeted when it is possible to move the facility into these locations and away from the schools.

It is noted that the current facility is not particularly well set up for adult community use. The displays are simple and not particularly interactive. Access is also somewhat difficult, with minimal traffic flow into the front section of the van. It is also difficult to move the van and so block bookings are essential [see below]. The facility however does send a strong message just by its presence at various events. Its iconic value should not be downplayed.

The presence of the *Wipe Out Waste* van at a range of community events performs a dual role, demonstrating the Council's commitment to environmental education and delivering key waste messages as well as allowing teachers/parents and their children the opportunity to learn more about the program and to consider organising a visit for their school.

It is noted that The *Wipe Out Waste* website functions as a one stop shop, providing a comprehensive overview of the program, including case studies from schools, highlighting innovative practical waste minimisation strategies, and an on-line booking process. It provides information to students and adults alike.

Is there evidence of the usefulness and appropriateness of the Wipe Out Waste program?

Residents Views: In general terms the Gold Coast community demonstrates high community acceptance of the Council's Waste Management Services. The GCCC has conducted a resident's satisfaction survey since 2001. Important contextual findings from this survey for this review of *Wipe Out Waste* are that:

- In total in 2003/04 94% of Gold Coast Residents are satisfied with the provision of waste service. [This figure is made up of; very satisfied [81.2%] or somewhat satisfied [12.8%].
- In 2004, 43% of residents thought council fact sheets about waste were excellent and a further 25% thought that they were good. However 14% thought they were poor/very poor. A slight downward trend is evident when comparing data over time.
- *Wipe out Waste* was quite well recognized [unprompted] by residents. When taken in total the facility and the program were recognized by the following percentage of residents:
 - 2001: 13.3%
 - 2002: 15.7%
 - 2003: 15.9%
 - 2004: 16.2%

Note: for some readers the relatively low percentage of adults who recognize the van might be somewhat surprising. It should be noted however that *Wipe Out Waste* primarily targets school students and the satisfaction survey is completed by adults.

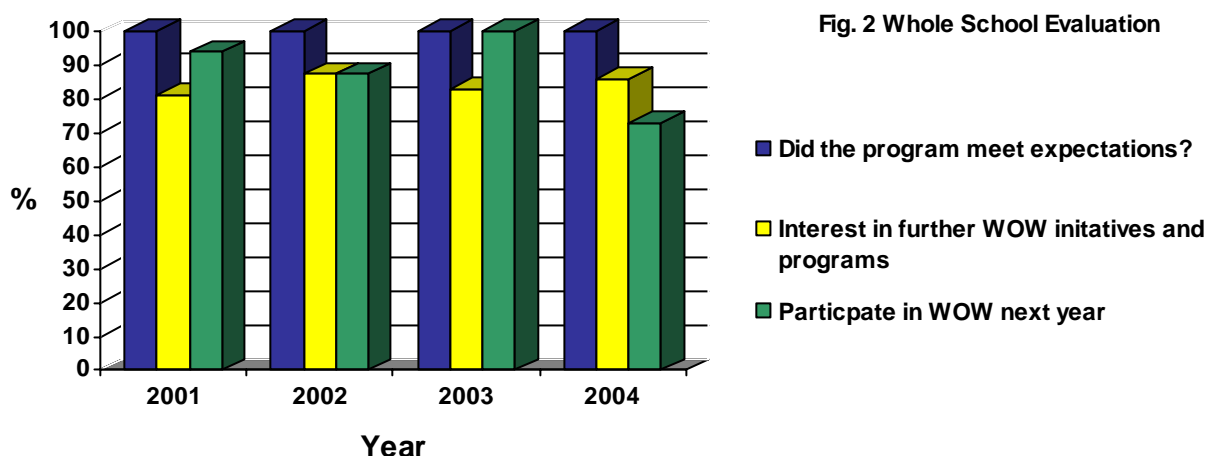
- Of interest is that residents did not rate face-to-face education as a preferred method of receiving information about waste. This has some implications for the use of the van at community events, where interaction needs to be less structured and not "lesson based."

Participants' Views: School evaluation forms are directed to all schools that have participated in the program using the MWEF. They are designed to seek information, as well as function as a booking tool for the Program. The box below contains the questions in the survey. In addition space is provided for teacher comment.

Whole School Evaluation

1. Did the 'Wipe Out Waste' Program meet expectations?
2. Would the school like to see further 'Wipe Out Waste' initiatives throughout the year i.e. competitions?
3. Does the school require the 'Wipe Out Waste' Program in the next school year?
4. Would the school like to make a tentative booking?

Figure 2 outlines the evaluation results for the Program since its inception; and a selection of teacher comments is also included.



The following comments made on the demonstrate teacher support for the program:

"All the teachers agree that the program is excellent with your presenters of the highest calibre, congratulations". Miami Primary School.

"As usual a thorough, professional and enjoyable presentation. The children look forward to it. Please send worms. Thanks." Gaven State School.

"All teachers & students had very positive feedback. The program had great results around our school - with students becoming more proactive. Hopefully this will extend into long term results. Many thanks." Caningeraba State School

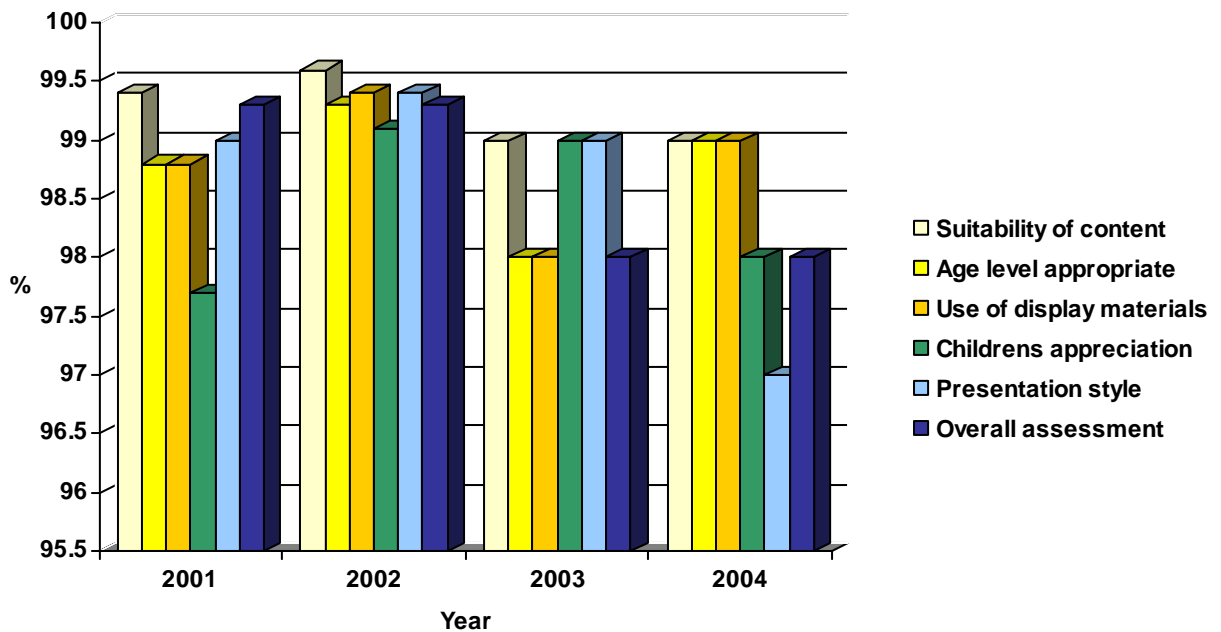
In addition, evaluation forms are provided to teachers at the beginning of each lesson and collected at the end. Teachers are asked to rate six aspects of the program on a scale from 1–5, with 1 indicating excellent and 5 indicating very poor. The aspects evaluated are:

- suitability of content
- appropriateness of content to age level
- appropriate use of display materials
- children's appreciation of the lesson
- presentation style and delivery

overall assessment of the presentation
space is also provided for general comments

Teacher evaluation of various aspects of the program is extremely positive, indicating the lessons are well targeted and the associated delivery and supporting resources are also of high quality. Figure 3 shows the proportion of teachers that rated aspects of the program either 1 or 2. However it is noted that teachers vary in their attentiveness to the lesson, understandably in some cases taking the opportunity for a brief break from daily teaching duties to recharge their batteries. The fact that the Program is free and that the students like it and are engaged also undoubtedly influences evaluation positively.

Fig. 3 Teacher Evaluation (Proportion of teachers rating program elements between 1 & 2)



Parent survey forms are also provided to assess the impact of the *Wipe Out Waste* Program outside the school environment. From the Council's perspective information collected provides an indication of the movement of information from the school to the home.

Five students from each class are provided with evaluation forms to be completed by their parents. On completion these forms are returned to the teacher who forwards them to the Program Coordinator. Approximately 30% of all forms are returned [a relatively high return rate for a survey of this type] which provides a useful indication of the level of information transfer.

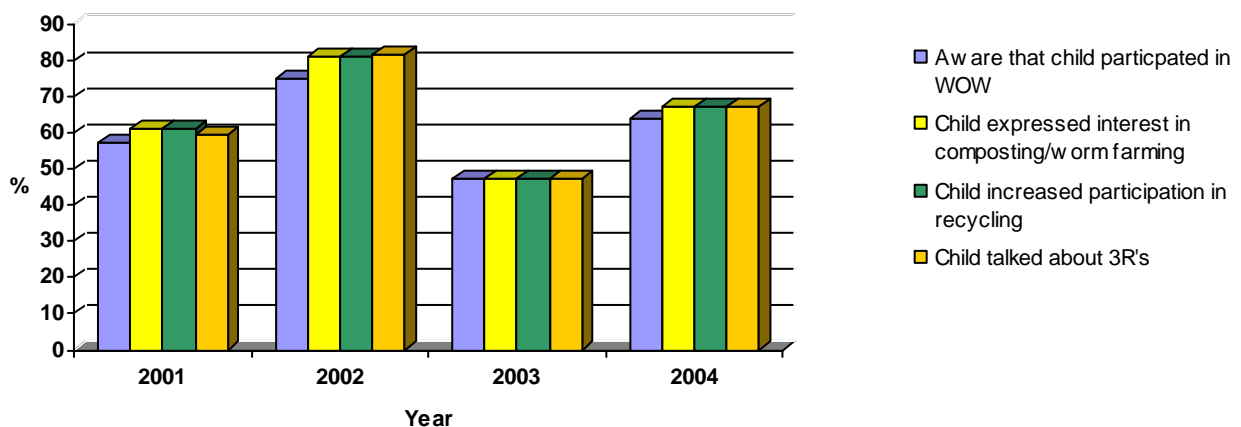
The survey asks the following questions:

1. Before this questionnaire, were you aware that your child recently attended a '*Wipe Out Waste*' presentation?
2. Has your child mentioned or expressed an interest in composting, mulching or maintaining a worm farm at home?
3. Has your child increased their participation in the separation of waste in your home for recycling?
4. Has your child talked about reducing, reusing and recycling at home?

The figure below illustrates the results of the parent evaluation since the inception of the Program. These results demonstrate that students do transfer messages from school to home and that the program causes increased participation by children in household recycling arrangements occurs. Discussing the 3Rs at home and participation in recycling outranks general awareness of the program and interest in establishing an organic recycling system.

Figures from parental evaluations are reinforced by anecdotal data collected at Community Events, whereby visitors to the van indicate that their child had discussed the Program with them or had educated them on various waste management issues, particularly correct items to recycle.

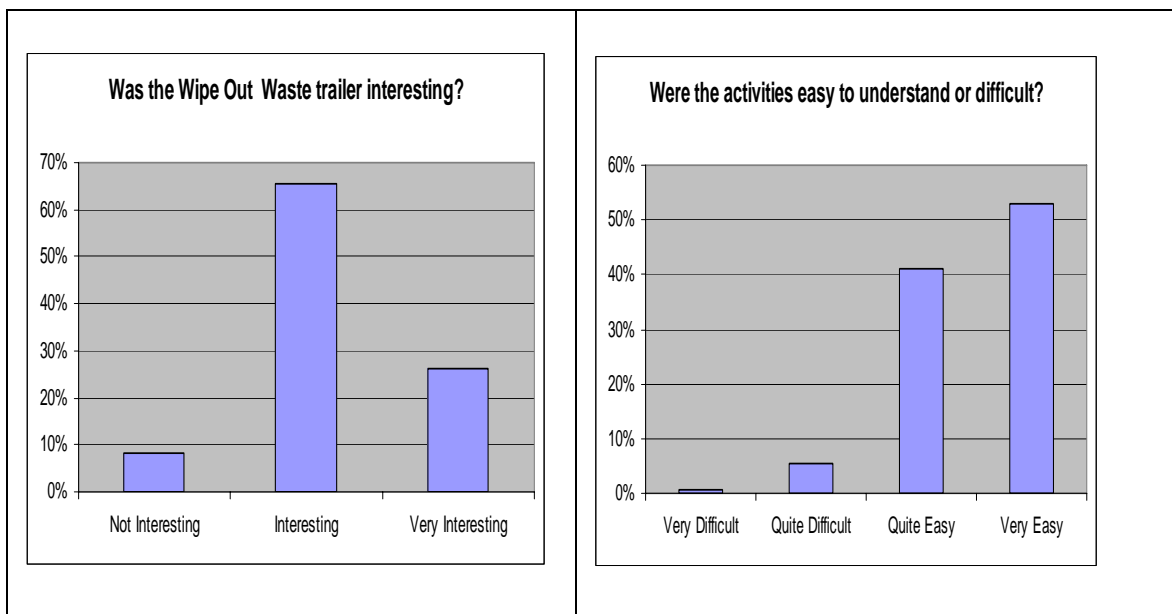
Fig. 4 Parental Evaluation



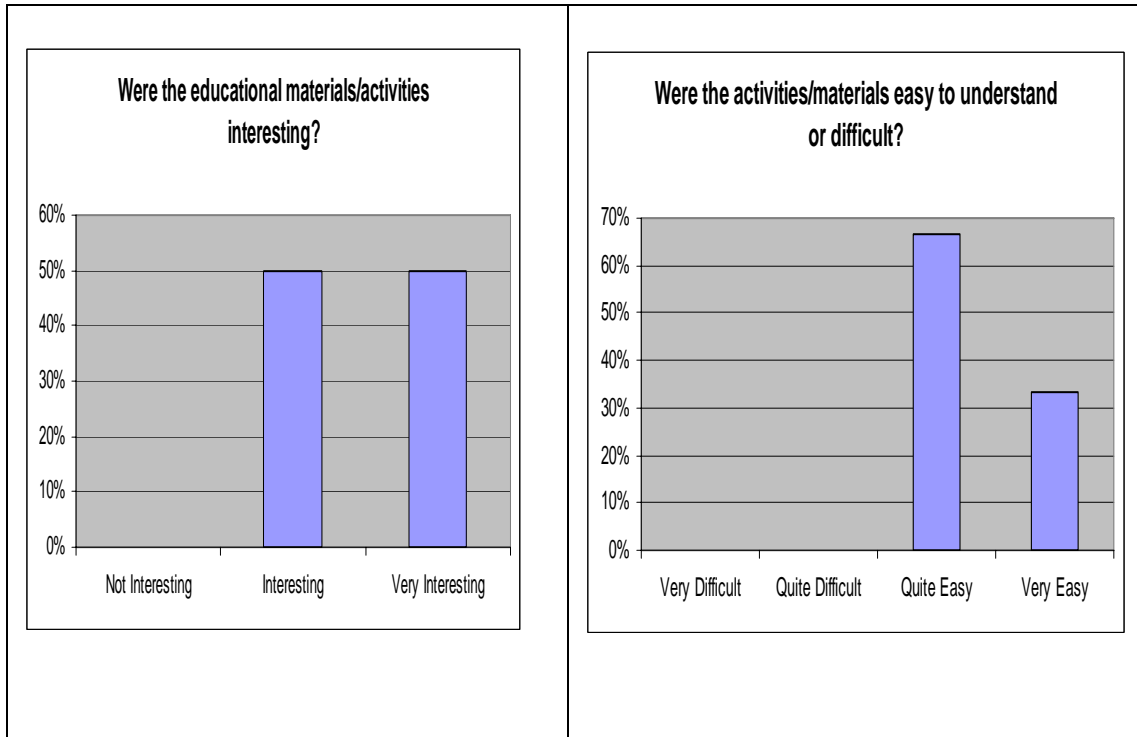
As can be seen by the findings above, *Wipe Out Waste* is a highly effective program. It is seen as useful and appropriate by teachers and parents. The collection of a significant amount of evaluative data over time has assisted the contractor to demonstrate the programs effectiveness to all key stakeholders and has been a most welcome addition to the current evaluation.

The Council's view of the fact that this project is useful and appropriate is best illustrated by their decision to spend an additional \$340,000 approx to purchase and fit out a second facility. This will maximise the use of education, place two facilities on the road for busy periods in the year [currently schools are being turned away] and allow for the older van to be lent [on a user pays basis] to some neighbouring councils. It may also extend the program into a larger number of community events

The snapshot surveys conducted in 2005 indicated that the 365 students drawn from more than six schools, across all grades found the van interesting and easy to understand.



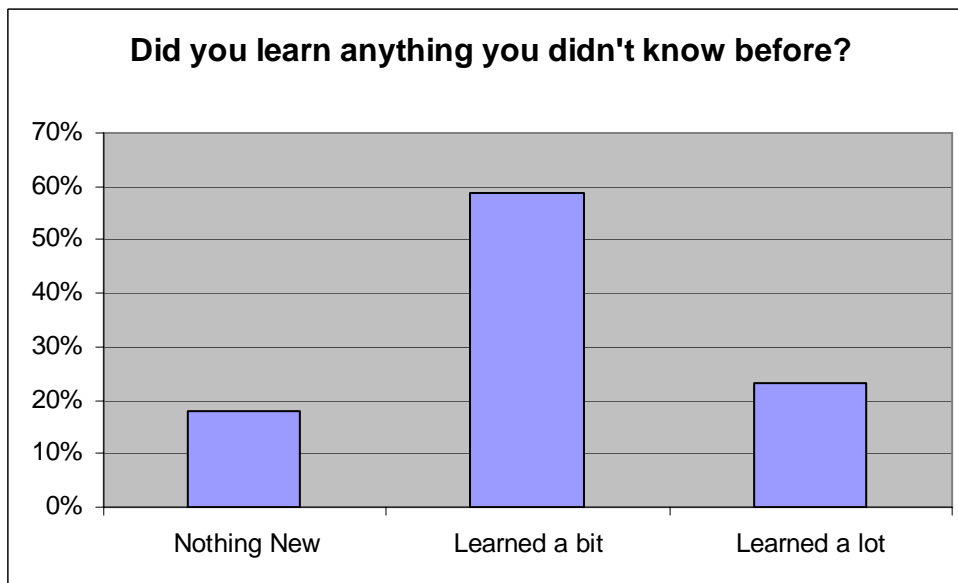
Adults also found the *Wipe Out Waste* experience interesting and easy to understand [see table below]. In fact it may be that the content is pitched too low for most adults. The new van should address this issue.



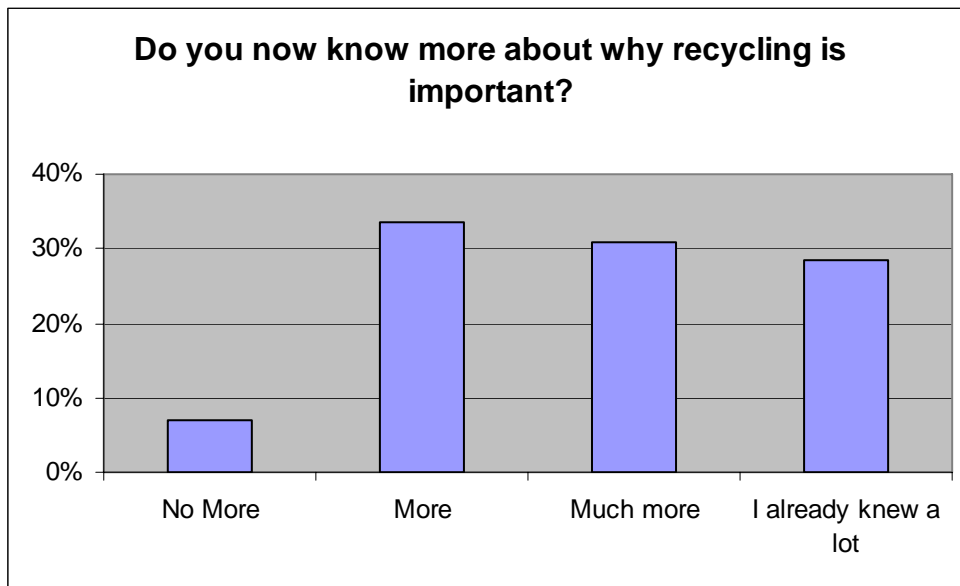
Have there been knowledge changes among participants of the Wipe Out Waste Program?

Students reported significant changes in knowledge as indicated by the following graphs

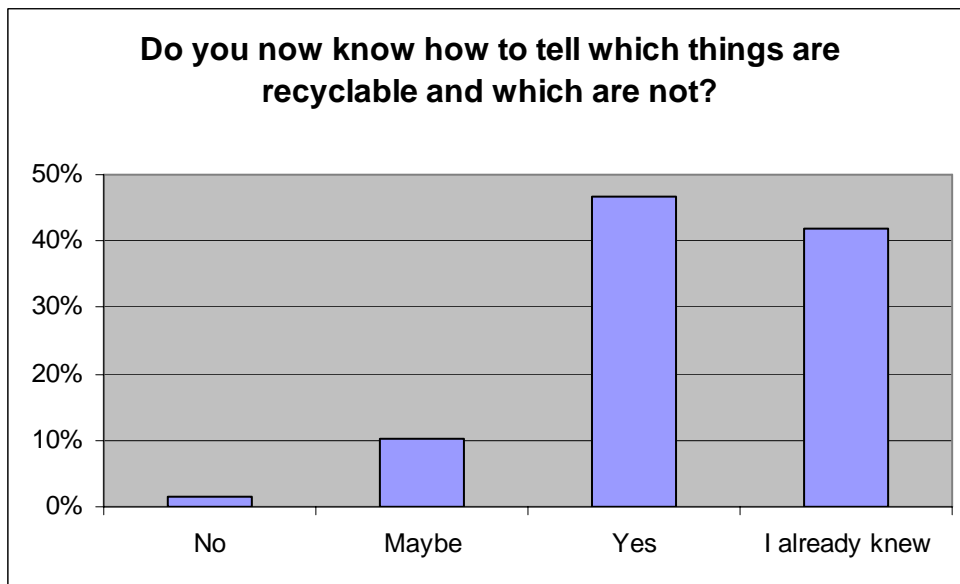
The figure below indicates that 17% of students learnt nothing new, however 22% learn a lot and almost 60% learnt a bit.



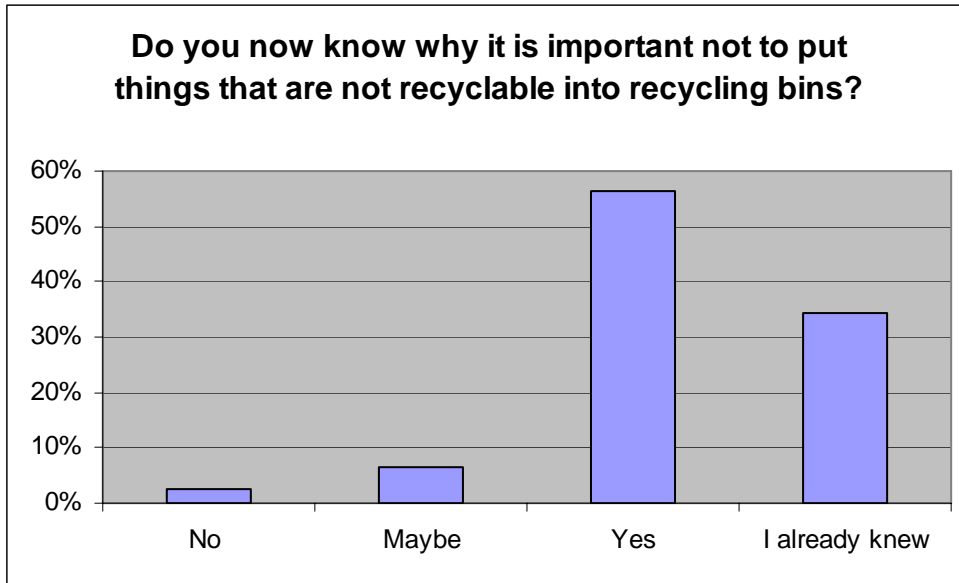
Although almost 30% of students indicated that they knew a lot about recycling the figure below show that significant learning was reported with over 60% indicating that they learnt more or much more.



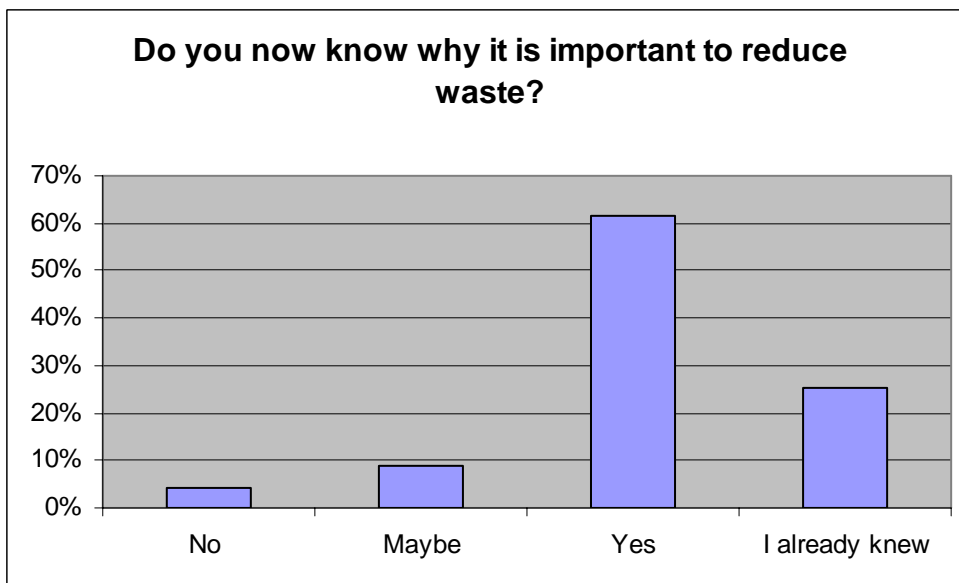
Over 40% of students indicated that they already knew about what was recyclable. Although self reported data this speaks volumes for the other education programs that the GCCC conducts [or for the student's learning through *Wipe Out Waste* in previous years]. Still almost 50% of students participating in the program indicated that they learnt more about what was able to be recycled.



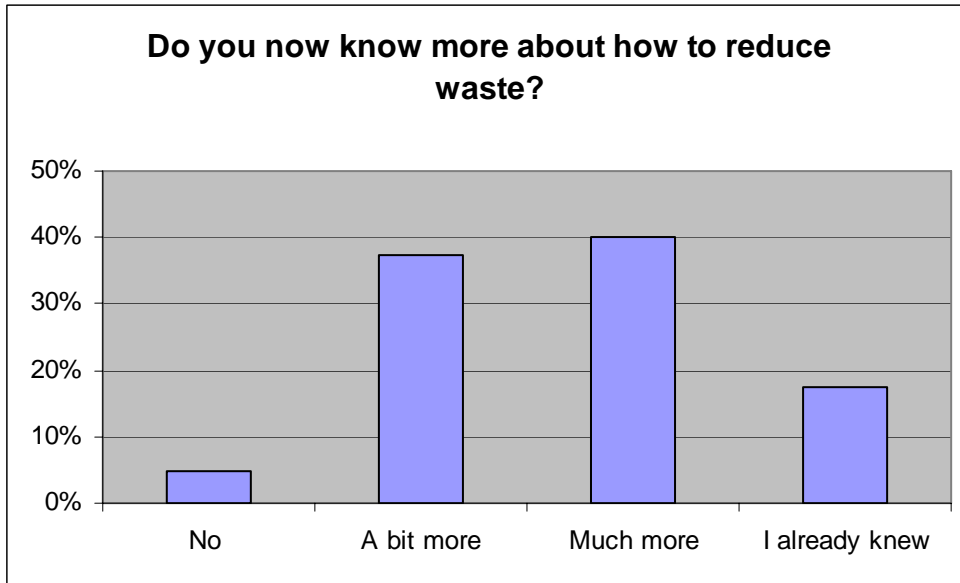
In broad terms the findings below validate that students learnt a substantial amount about what to put into the recycling bin. This question was used to confirm previous findings and it does that.



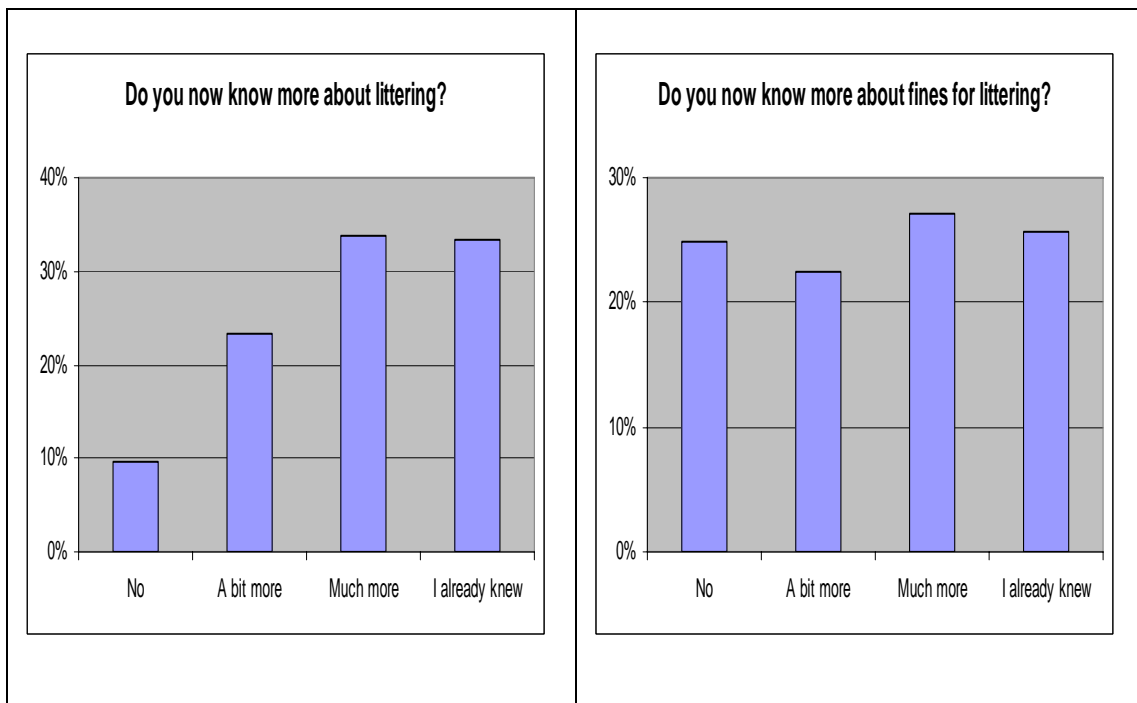
Over 60% of students gained new learning about why it is important to reduce waste through the program. This sets the context for other knowledge and behaviour changes later in life and thus is an important outcome of the program. Less than 5% of the students surveyed said that they did not learn about waste reduction.

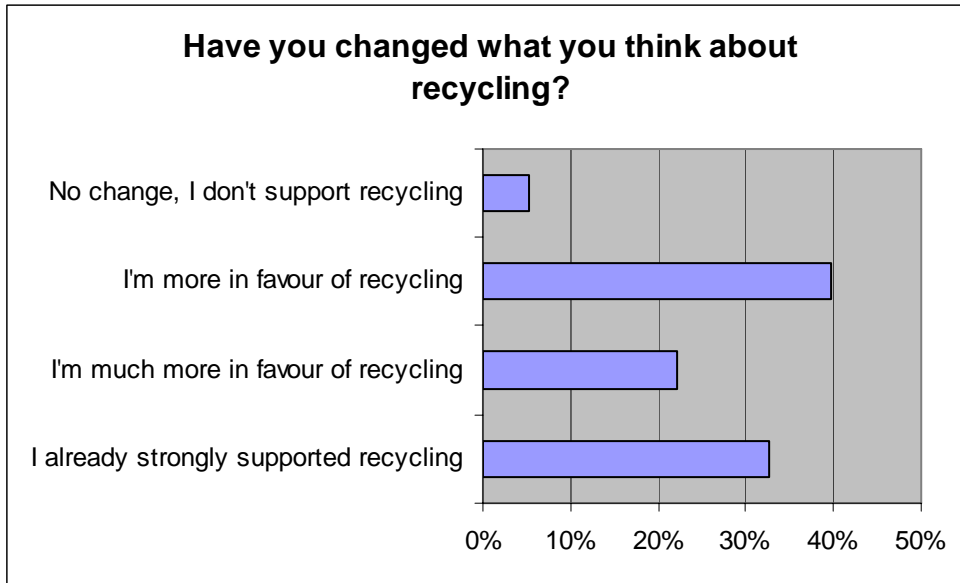


While the findings about how to reduce waste [see table below] were not as impressive well over 70% of students learnt more about waste reduction practices

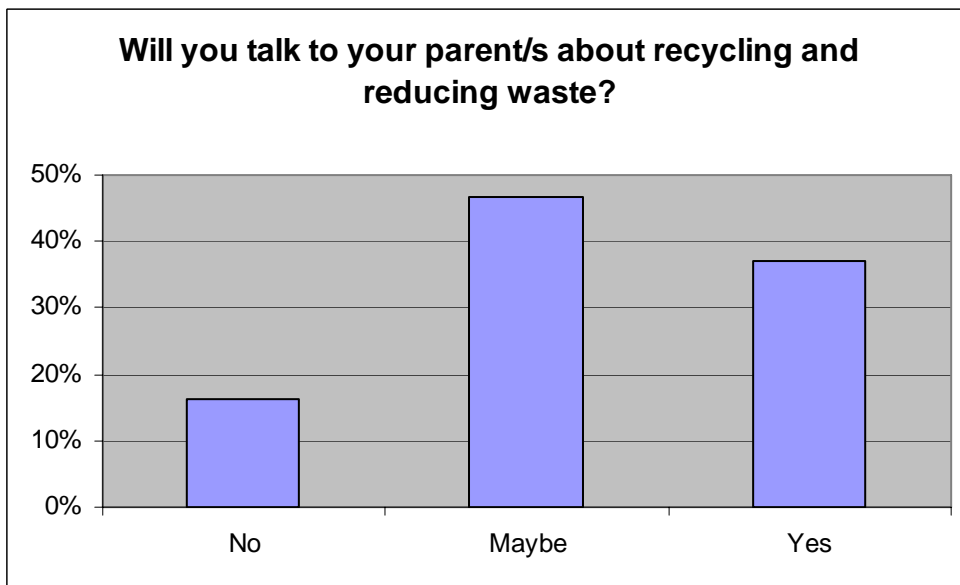


Littering is a relatively small part of the *Wipe Out Waste* Program's content. But it is a highly visible part of the waste issue and anecdotal evidence says that children and young people contribute directly to the problem [unlike some other waste streams, where adults are the major contributors]. The following table indicates that the program had a significant impact on litter knowledge although baseline knowledge was quite high.





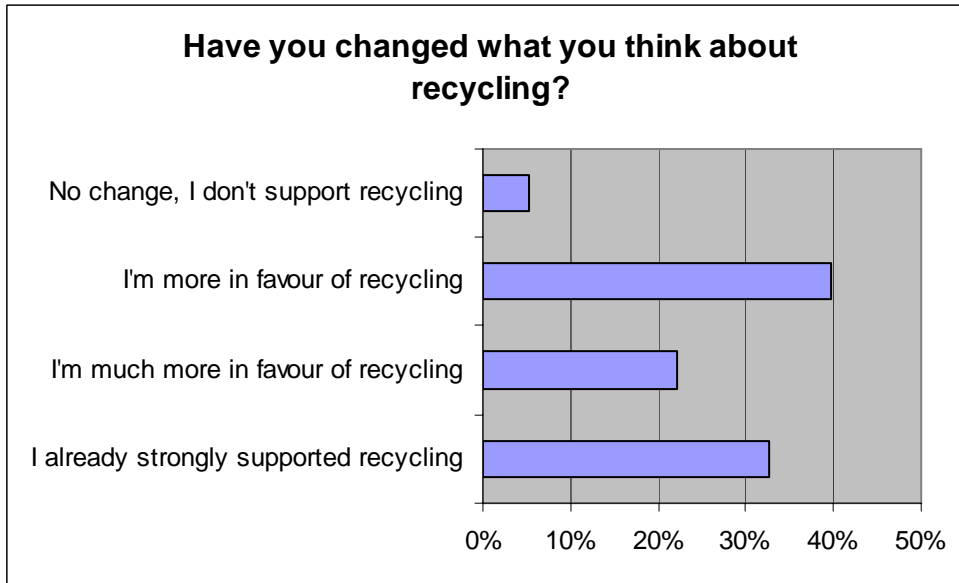
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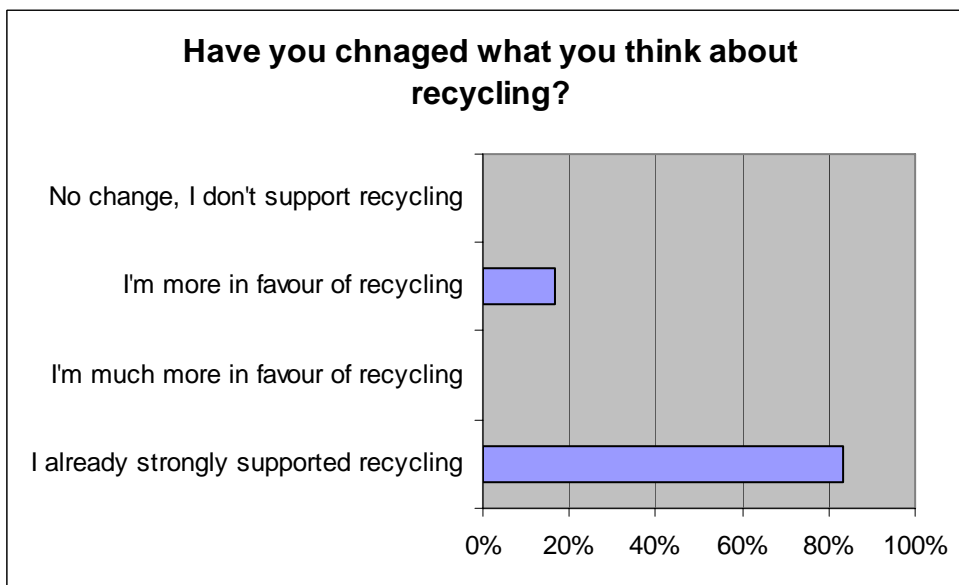
Is there evidence that Wipe Out Waste has produced attitude changes among those who participated?

The GCCC reports that the community has a generally positive attitude to waste management. The resident satisfaction survey and the low level of waste related complaints attest to the existence of a positive mindset. It is claimed by the council that the *Wipe Out Waste* program contributes significantly to this positive view. *It sets the context in our community for people to be concerned about waste.* The high use of website also demonstrates high community interest.

Attitudes towards recycling were tested in the snapshot surveys. School students indicated in the following table that they have positive attitudes to recycling and that the *Wipe Out Waste* program had impacted on these; 40% saying that they were more in favour of recycling and a further 22% saying that they were much more in favour



The situation is somewhat different for adults where 82 percent of them already indicated strong support for recycling.



What evidence is there of the Gold Coast community changing their waste related behaviour [or reporting changed behaviour intentions]?

Above, Table 4 indicates that students involved in the Wipe Out Waste Program have talked with their parents about waste reduction, become more involved in household recycling and shown interest in composting and worm farming. These behaviours have been demonstrated for the period 2001 to 2004. For example: 60% of students were more involved in household recycling as a result of the program in 2001, 80% in 2002 48% in 2003 and 65% last year.

Also this program demonstrates that young people do talk with their parents about issues that have been discussed at school, Results from the ongoing evaluation of Wipe Out Waste conducted by Envirocom [see figure 4 above] demonstrate that

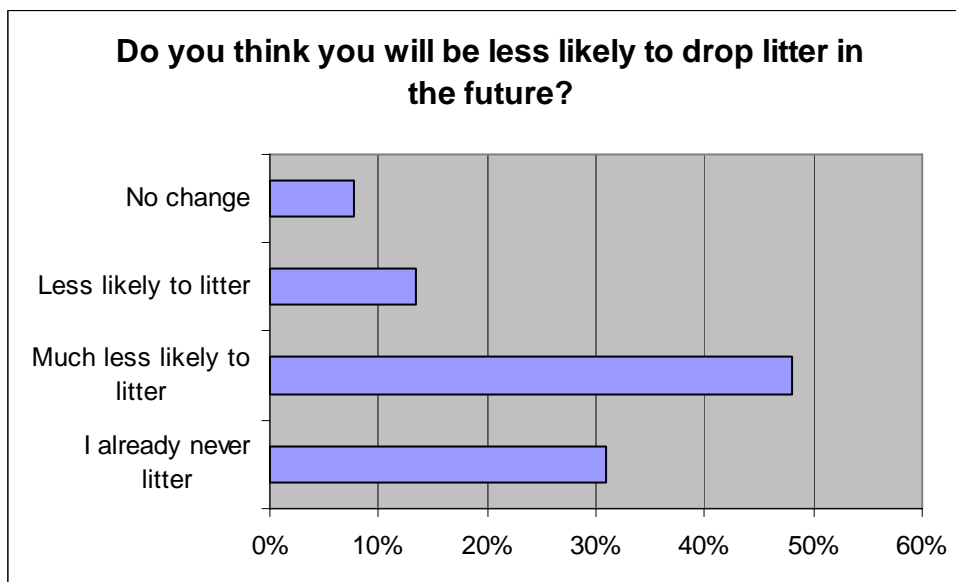
those young people involved in this program have talked with their parents about waste reduction as follows:

Table 5. Percentage of students talking with their parents about waste reduction

Year	Percentage of students
2001	59%
2002	81%
2003	48%
2004	65%

These are impressive results which show the impact of the program continuing over time.

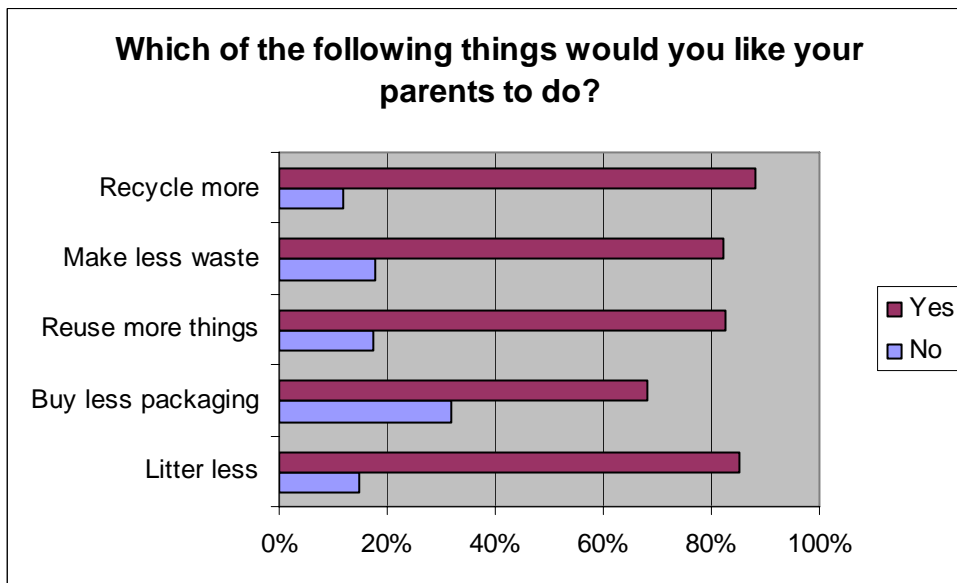
The snapshot survey also demonstrated behaviour shifts [intention at least]. For example the findings in the table below are encouraging, with almost 50% of students much less likely to litter as a result of the program. Given that 31% indicated that they never littered in the first place, the program has had a significant effect



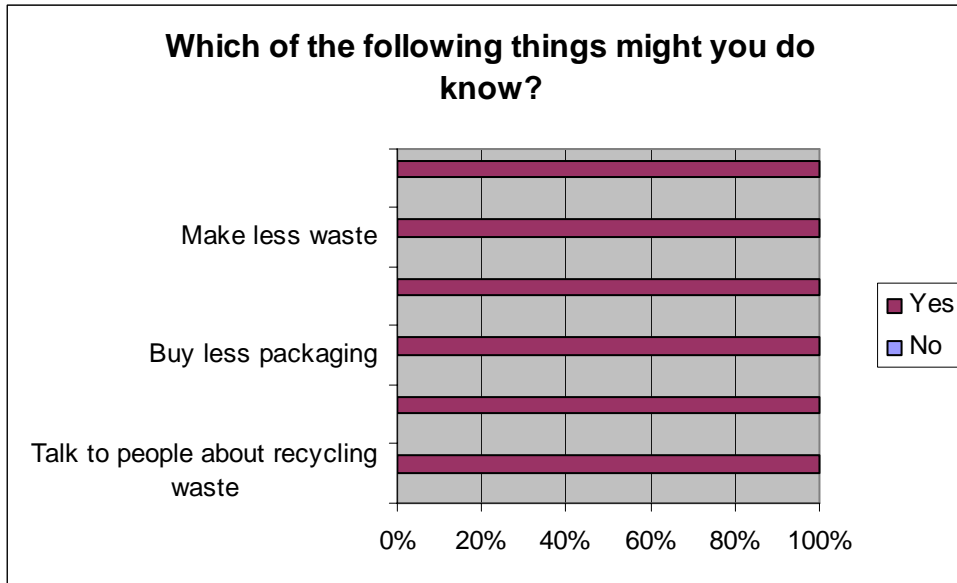
Students indicate that they will talk with their parents about waste [46% maybe and 38% yes] although 16% said that there was no way that they would discuss waste. Some quite strong comments were received about this issue. Sadly one young person said *I don't talk with my parents about anything....*



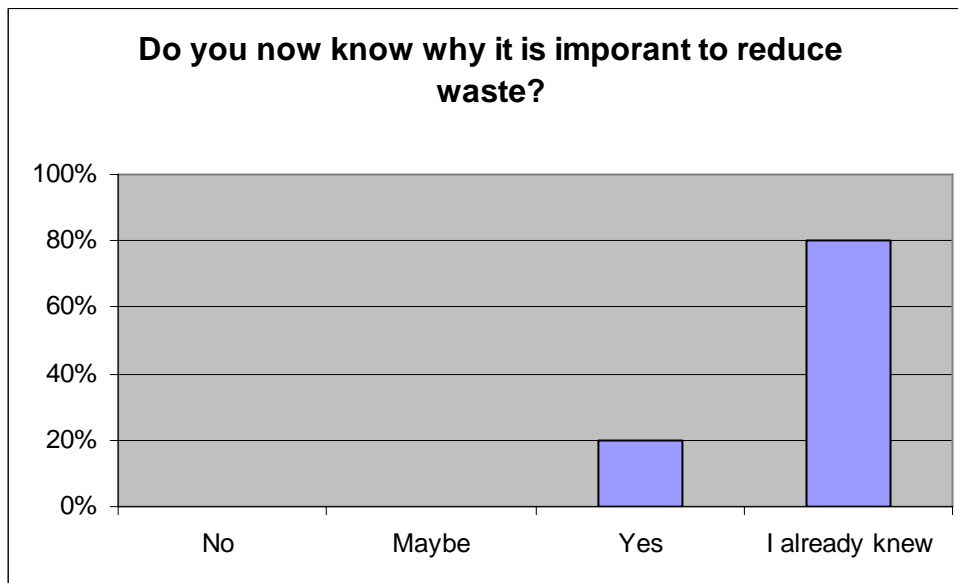
Young people were very clear about what they wanted their parents to do, with all of the actions below scored quite highly. The one slightly lower percentage relates to the purchase of less packaging and comments indicated that they thought that their parents had little choice about what packaging they might purchase.



100% of adults indicated that they would do more as a result of the program, see table below

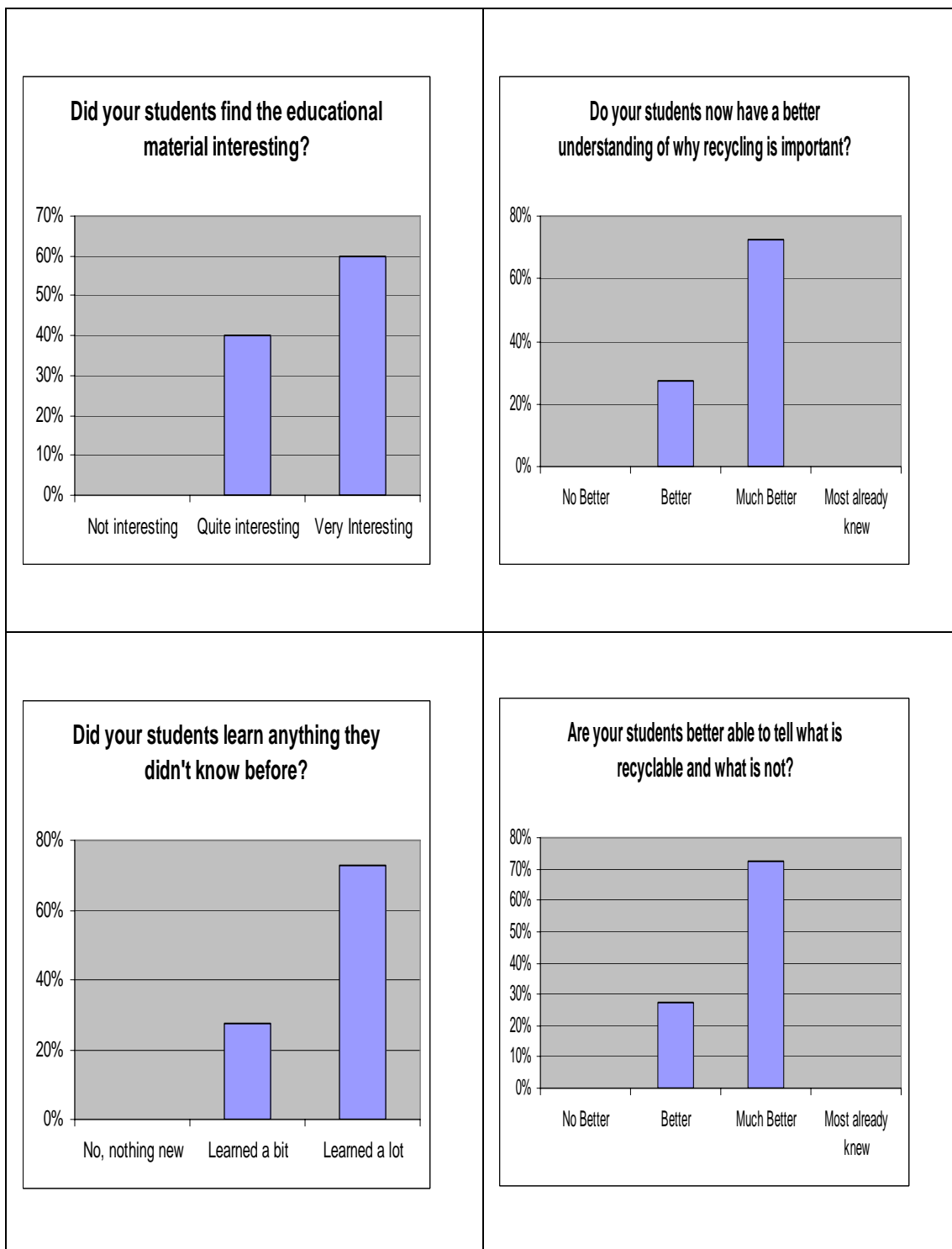


It is clear that the *Wipe Out Waste* program has less impact on adults than young people. This is to be expected because it is purpose built for primary aged children. This finding is illustrated by the following data drawn from the adult version of the snapshot survey. It is broadly consistent with other data that showed that adults already knew what was being presented.



Wipe Out Waste works well with students, The table below shows that teachers, as independent, detached observers are of the view that the program successfully targets the young people in their classes. Teachers saw the program as very interesting for their students [60%; the remaining 40% said their students were quite interested]. They also indicated that it improved student knowledge, especially about recycling.

Teacher Feedback: Gold Coast. *Wipe Out Waste* Project.



What evidence is there of increased recycling rates, improved compliance and/or reduced waste generation on the Gold Coast?

Despite a comprehensive review of the GCCC waste data by the evaluator and the council staff no direct evidence can be found to link the education undertaken through the *Wipe Out Waste* program with improvements in the level of recycling,

reduction in contamination of recycled materials and/or reduction of the volume of waste to landfill.

This is not to say that such impacts have not occurred. Rather, that the ways in which the waste data and the data evaluating the results of a number of specific interventions are linked is not precise enough to allow for cause and effect information to be obtained. Given the extent of self reported behaviour change that results from the *Wipe Out Waste program*, it is clear that there is impact on the waste and recycling streams. Quantifying these impacts is a more challenging process and requires specific studies and data collection and analysis processes to be established. It is in the interests of all in the Gold Coast community and for the *Wipe Out Waste* program for this to occur. Some ideas for consideration, to support this process are to be found in Appendix 4

Other relevant findings

Wipe Out Waste has been recognised with a number of environmental awards that have assisted in raising program profile and credibility.

Wipe Out Waste was a finalist in the Banksia Environmental Awards 2003, in the category "Environmental Leadership in Communications." The Banksia Awards are the most prestigious national environmental awards in Australia.

The Program Coordinator of the *Wipe Out Waste* received an Outstanding Achievement Award in the Comalco *Green and Healthy Schools Awards* (South East Queensland Region) in 2003. The nomination was as a result of unsolicited recommendations from schools that had participated in the *Wipe Out Waste* Program.

Major Conclusions

The Wipe Out Waste Program is Effective and Efficient

The Gold Coast City Council and Envirocom are to be congratulated for delivering a highly effective and efficient program. Even prior to this evaluation the data collected from participating schools indicated that *Wipe Out Waste* has had significant impact. Teachers report high level knowledge growth among their students and parents 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. Also 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.

Gold Coast City Council is strongly supportive of this program. It demonstrates this support through:

- significant funding of the Program
- the use of its prime mover to move the *Wipe Out Waste* Wagon every week or more regularly as required.
- funding of a new *Wipe Out Waste* van to come on line in the middle of 2005

Significant Numbers of Students are Accessing the Program

There would be very few face-to-face education programs in Australia that access over thirty thousand participants in a year. *Wipe out Waste* achieved this in 2004 and has consistently provided education to over 20,000 young people per annum since 2001. The secret is that the program works in block periods in each school and schools rebook annually. This means that all classes in a school can attend the

sessions and that students revisit the van each year. The range of lessons across each grade means that knowledge gained in one year is built upon the next and that lessons are not repeated for any one student. It also means that there is considerable incentive for teachers to build upon the program in the classroom, either prior to or after the *Wipe Out Waste* visit.

Adults in the Community are Being Educated through Wipe Out Waste

Adult community education is resulting from this program in two ways:

- As described above, those students who participate in the program pass messages on to their parents. This is encouraging and confirms the effectiveness of the program. It would be useful however, if the actions that flowed from this process could be identified. It would be of value in the future if more information could be obtained from a larger sample about what these actions were. This would require a revamp of the parent's evaluation form.
- Adults are also targeted through the use of the van at a number of community events. It must be noted that little data is available on the number of adults accessing the van or the impact of this contact on their knowledge or behaviour.

It is noted that the van needs to be moved by a prime mover and this limits the capacity of the program to be flexibly used across a number of locations over a single week. Block placement in schools means that the program has had significant impact on school students, but less on the adult community.

The Program Impacts on Knowledge and Behaviour

There is solid evidence throughout the findings above, that the program has a significant impact on the knowledge and behaviour of those who are involved in the Program. While data collection could be extended somewhat to provide even more information about what is occurring, the results of this program are impressive. There is unambiguous feedback that the program is having an impact; and the program's intended outcomes are being met.

Program Evaluation

Wipe Out Waste has a relatively strong evaluation framework and data collection processes in place. Much useful data was provided prior to the commencement of the current evaluation. This allowed for documentation of impacts of the program over time.

There is room however, for some improvement in the evaluation framework for the program. There is also room to find ways to tie the outcomes of the program more directly to the waste and recycling activities that the family does at home. It is important to note that there is no evaluation of education and its links to waste data. No monitoring of waste to landfill or recycling rates occurs in order to measure the impact of any program. It is as though the intervention occurs at a level removed from the issue.

Recommendations

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].

Appendix 1. Waste Education Facilities Evaluation Project: Outcomes Hierarchy: *Wipe Out Waste* Gold Coast Project.

Project Outcome	Relevant objective [see below].	Evaluation Question	Data Source
7. Reduced waste generation/improved recycling rates and compliance on the Gold Coast.	Objectives 1, 4, 5	What evidence is there of increased recycling rates, improved compliance and/or reduced waste generation on the Gold Coast	<ul style="list-style-type: none"> • Council data on recycling rates and level of compliance • Household data on waste reduction behaviour • Community survey
6. Improved recycling behaviour and/or behavioural intention	Objectives 1, 2, 4, 5	What evidence is there of the Gold Coast community changing their waste related behaviour [or reporting changed behaviour intentions]?	<ul style="list-style-type: none"> • Data from project Key Informants • Community survey • Project reports • Teacher survey • Contractor survey
5. Improved attitudes towards waste management and recycling	Objectives 1, 2, 5	Is there evidence that <i>Wipe Out Waste</i> has produced attitude changes among those who participated	<ul style="list-style-type: none"> • Data from project key informants • Community survey/teacher survey/student survey • Project reports • Contractor survey
4. Improved knowledge about waste/recycling/reuse/reduce issues and choices	Objectives 1, 2, 5	Have there been knowledge changes among participants of the <i>Wipe Out Waste</i> Program	<ul style="list-style-type: none"> • Project evaluation results • Key informant data • Community/Teacher/ Student surveys
3. Schools and the community see the <i>Wipe Out Waste</i> Program as	Objectives 3, 4	Is there evidence of the usefulness and appropriateness of the <i>Wipe Out Waste</i> program	<ul style="list-style-type: none"> • Project admin, rebooking rates etc • Teacher and Student surveys

useful and appropriate			
2. Schools and the community access the <i>Wipe Out Waste</i> program	Objectives 1, 3, 4	What is the level of access to the program by schools, students and the community?	<ul style="list-style-type: none"> • Level of uptake of the program.
1. The <i>Wipe Out Waste</i> program is carried out.	Objectives 2, 3, 4, 5	Has the <i>Wipe out Waste</i> occurred as intended?	<ul style="list-style-type: none"> • Program delivery compared to program intent.

Note: The *Wipe Out Waste Program* is oriented towards schools in that approximately 90% of the funding and effort is directed towards education of school students.

Wipe Out Waste Program Objectives

1. To promote the 3Rs of the Waste Management Hierarchy - reduce, reuse and recycle
2. To encourage student awareness (and indirectly parents), of the need to conserve natural resources and to deal with waste in an environmentally friendly manner
3. To educate students in the availability and practical use of Council's recycling facilities and kerbside household recycling program
4. To educate the public at special events on the availability and use of Council's recycling facilities and the kerbside recycling program.
5. Promotion of vermiculture and composting to reduce waste to landfill and to provide a usable commodity.

Appendix 2: Additional Information about the *Wipe Out Waste* Program

Wipe Out Waste provides additional support for schools when implementing a unit of work into the curriculum. Support materials are outlined as follows.

Providing the Links: This resource provides teachers with the tools to assist them in developing units of work based around waste related issues that encourage students to take action to reduce waste. The '*Providing the Links*' kit addresses issues that are directly linked to consumption, usage and disposal of materials, many of which are not readily considered.

Storybooks: The program has developed a series of three storybooks/titles to coincide with topics taught in the MWEF. They are;

- The Litter Detectives
- Cosmo and the Composters
- The 3Rs

The *Wipe Out Waste* Challenge provides practical assistance to schools, across all educational sectors, in the design and implementation of waste minimisation strategies. The fundamental aims of the *Wipe Out Waste*' Challenge are to:

- Provide students with hands on experience and skills in waste minimisation
- Assist schools to decrease waste volumes and, where possible, waste management costs¹

It is important to note that the *Wipe Out Waste* Challenge was not an original component of the Program. Gold Coast City Council chose to fund the Challenge as a result of feedback received via teacher and whole school evaluation.

Figure 5 below illustrates the type of practical waste minimisation activity undertaken by schools and the relative popularity of each activity in regard to assistance provided by the *Wipe Out Waste*. A number of factors influence the figures, including the provision of free worm farms to schools and contractual issues that do not enable all schools to access Council recycling services².

Schools engaged in the Challenge are encouraged to collect and provide data to the Program in order to effectively measure the impact of waste minimisation measures (eg reduction in waste to landfill, reduction in waste collection or other costs, attitudinal or behavioural change among students) and to use as case studies to further encourage participation.

Data sheets and guidelines provide assistance in this process, although it must be noted that while schools are happy to present case studies of a general nature, the provision of data on diversion rates and other quantitative factors are less common. There are numerous reasons for this including separation between teachers and school registrars responsible for tracking costs, general teaching and time pressures

¹ Presently Education Queensland budget processes do not reward schools for savings in their utilities budgets; reduction in costs for waste management for instance will be reflected in a lower overall budget allocation when reviewed; utilities budgets are reviewed every second year.

² Council operates its own bulk waste collection service, competing with various commercial waste businesses, consequently only schools that engage the Council to collect bulk waste are entitled to free recycling MGB's. Council as also recently introduced commercial bulk recycling services that is likely to positively influence recycling rates in schools.

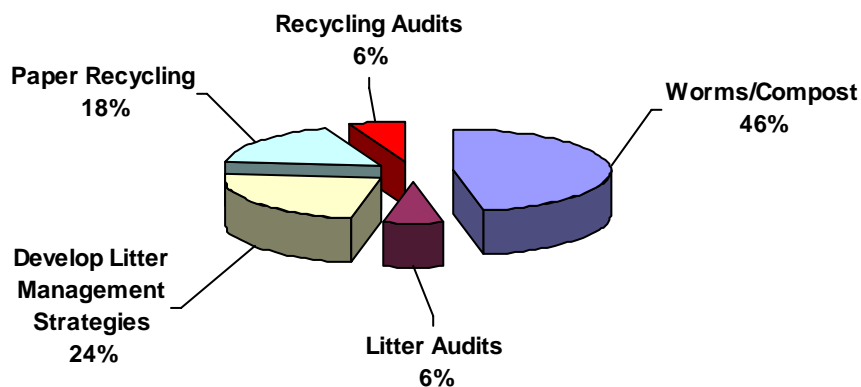
and an emphasis on the successful implementation of a program and the students participation in it rather than its broader consequences. The likely implementation of the Queensland Ecologically Sustainable Schools Initiative (QESSI) in 2005 may provide a greater impetus for schools to gather data.

To assist schools in practical waste minimisation a CD-Rom has been produced. The CD-Rom format was chosen as it allows for regular updating and addition as well as minimising resource use.

The major themes of the CD-Rom are:

- Assessing Waste Production & Disposal - audits, surveys and waste alternatives
- Recycling Programs – developing and sustaining recycling in school
- Litter Reduction Programs – incentive schemes, conducting litter audits
- Organic Waste Reduction Programs – establishing worm farms and compost systems
- Case Studies – success stories from Gold Coast schools
- Black Line Masters – copies of surveys, signage, questionnaires etc.

Fig.5 Wipe Out Waste Challenge - Waste Minimisation Activities



Appendix 3: Snapshot Data Collection Surveys

What Did You Learn? What Will You Do? Wipe Out Waste Visit: Adult Community Questionnaire

Thank you for filling out this form. It will take you about five minutes. Your feedback will help us to improve our education services. Please circle the best answers for you and add your comments in the spaces provided.

DO NOT WRITE YOUR NAME ON THIS FORM.

Please give the completed form to the staff member on site

1	Were the educational materials/activities in the Wipe Out Waste trailer interesting? 1 Not interesting 2 Quite interesting 3 Very interesting
2	Were they easy to understand or difficult? 1 Very difficult 2 Quite difficult 3 Quite easy 4 Very easy
3	Did you agree with what they were saying? 1 No, I disagreed with most 2 Yes, I agreed with most 3 I agreed with all of it
4	Did you learn anything you didn't know before? 1 No, nothing new 2 I learned a bit 3 I learned a lot What were the main things you learned? _____
5	Do you now know more about why recycling is important? 1 No more 2 More 3 Much more 4 I already knew a lot
6	Do you now know more about how recycling is done? 1 No more 2 More 3 Much more 4 I already knew a lot
7	Do you now know how to tell which things are recyclable and which are not? 1 No 2 Maybe 3 Yes 4 I already knew
8	Do you now know why it is important not to put things that are not recyclable into recycling bins? 1 No 2 Maybe 3 Yes 4 I already knew
9	Do you now know why it is important to reduce waste? 1 No 2 Maybe 3 Yes 4 I already knew
10	Do you now know more about how to reduce waste? 1 No 2 A bit more 3 Much more 4 I already knew
11	Do you now know more about why littering is a problem? 1 No 2 A bit more 3 Much more 4 I already knew
12	Do you now know more about penalties for littering? 1 No 2 A bit more 3 Much more 4 I already knew
13	Have you changed what you think about recycling?

	1 No change, I don't support recycling 3 I'm much more in favour of recycling	2 I'm more in favour of recycling now 4 I already strongly supported recycling
14	Do you think you will do anything differently in future? 1 No 2 Maybe 3 Yes If yes, what will you do differently? _____	
15	Which of the following things might you now do? 1. Recycle more 1 No 2 Yes 2. Make less waste 1 No 2 Yes 3. Reuse more things 1 No 2 Yes 4. Buy less packaging 1 No 2 Yes 5. Litter less 1 No 2 Yes 6. Talk with people about reducing waste 1 No 2 Yes	

Thank you very much for your help

**What Did You Learn? What Will You Do?
Wipe Out Waste Visit: School Students Survey**

Thank you for filling out this form. Your answers will help us to improve our lessons. Please circle the best answer for you and add your comments in the spaces provided. **DO NOT WRITE YOUR NAME ON THIS FORM.**

Please give the form back to your teacher

1	Was the Wipe Out Waste trailer interesting? 1 Not interesting 2 Quite interesting 3 Very interesting			
2	Were the activities easy to understand or difficult? 1 Very difficult 2 Quite difficult 3 Quite easy 4 Very easy			
3	Did you agree with what they were saying? 1 No, I disagreed with most 2 Yes, I agreed with most 3 I agreed with all of it			
4	Did you learn anything you didn't know before? 1 No, nothing new 2 I learned a bit 3 I learned a lot What were the main things you learned? _____			
5	Do you now know more about why recycling is important? 1 No more 2 More 3 Much more 4 I already knew a lot			
6	Do you now know how to tell which things are recyclable and which are not?			

	1 No	2 Maybe	3 Yes	4 I already knew
7	Do you now know why it is important not to put things that are not recyclable into recycling bins?			
	1 No	2 Maybe	3 Yes	4 I already knew
8	Do you now know why it is important to reduce waste?			
	1 No	2 Maybe	3 Yes	4 I already knew
9	Do you now know more about how to reduce waste?			
	1 No	2 A bit more	3 Much more	4 I already knew
10	Do you now know more about littering?			
	1 No	2 A bit more	3 Much more	4 I already knew
11	Do you now know more about the fines for littering?			
	1 No	2 A bit more	3 Much more	4 I already knew
12	Have you changed what you think about recycling?			
	1 No change, I don't support recycling		2 I'm agree more with recycling now	
	3 I agree much more with recycling		4 I already strongly supported recycling	
13	Do you think you will be less likely to drop litter in future?			
	1 No change	2 Less likely to litter	3. much less likely to litter	3 I already never litter
14	Will you talk to your parent/s about recycling and reducing waste?			
	1 No	2 Maybe	3 Yes	
15	Which of the following things would you like your parents to do?			
	a. Recycle more	1 No	2 Yes	
	b. Make less waste	1 No	2 Yes	
	c. Reuse more things	1 No	2 Yes	
	d. Buy less packaging	1 No	2 Yes	
	e. Litter less	1 No	2 Yes	

Thank you very much for your help

**What Did You Learn? What Will You Do?
Wipe Out Waste Visit: Teacher Feedback Questionnaire**

Thank you for filling out this form. It will take you less than ten minutes to complete. Your feedback will help us to improve our educational services. Please circle the best answers for you and add your comments in the spaces provided. **DO NOT WRITE YOUR NAME ON THIS FORM.**

Please give the completed form to the staff member on-site.

1	Did your students find the educational materials in the Wipe Out Waste trailer interesting?
	1 Not interesting 2 Quite interesting 3 Very interesting
	If interesting, what made it interesting?

	<hr/> <hr/> <p>If <u>not</u> interesting, how could it have been more interesting?</p> <hr/> <hr/>
2	<p>Did they find these materials/activities easy to understand or difficult? 1 Very difficult 2 Quite difficult 3 Quite easy Very easy If difficult, what made it difficult? What could have made it easier?</p> <hr/> <hr/> <p>If easy, what made it easy?</p> <hr/>
3	<p>Did your students learn anything they didn't know before? 1 No, nothing new 2 They learned a bit 3 They learned a lot What were the main things they learned?</p> <hr/> <hr/>
4	<p>Do they now have a better understanding of why recycling is important? 1 No better 2 Better 3 Much better 4 Most already knew</p>
5	<p>Do you they now have a better understanding of how recycling is done? 1 No better 2 Better 3 Much better 4 Most already knew</p>
6	<p>Are they now better able to tell which things are recyclable and which are not? 1 No better 2 Better 3 Much better 4 Most already knew</p>
7	<p>Do they now have a better understanding why it is important to keep non-recyclable items out of recycling bins? 1 No better 2 Better 3 Much better 4 Most already knew</p>
8	<p>Do they now have a better understanding why it is important to reduce waste? 1 No better 2 Better 3 Much better 4 Most already knew</p>
9	<p>Do they now know more about how to reduce waste? 1 No 2 A bit more 3 Much more 4 Most already knew</p>
10	<p>Do they now know more about the cost of littering? 1 No 2 A bit more 3 Much more 4 Most already knew</p>
11	<p>Do they now know more about penalties for littering? 1 No 2 A bit more 3 Much more 4 Most already knew</p>
12	<p>Did you find the messages in these materials appropriate?</p>

	<p>1 No, I disagreed with most 2 Yes, I agreed with most 3 Yes, I agreed with all</p> <p>Which messages did you disagree with or find problematic, if any?</p> <p>_____</p> <p>_____</p> <p>_____</p>
13	<p>If you noticed any gaps in the information provided, what were they?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
14	<p>Please outline how this session fits in with other lessons or school activities.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
15	<p>Can you suggest any ways to improve waste education for school children or the community in general?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
16	<p>Are there any other comments you would like to make?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Thank you very much for your help

Appendix 4: Ideas for identifying waste stream impacts of the *Wipe Out Waste* program in the future.

Recommendation GC8 identifies that the GCCC and Envirocom should work together to identify ways of determining the impacts of the program on the waste stream; most particularly recycling rates, contamination rates and waste to landfill rates. The following are some possible ways that this process might occur.

At the school level

- Identify 10% to 20% of schools per year who are prepared to be involved in the program and especially in the Waste Challenge. Using energy, water and waste data, pre and post, track the school's use and waste of resources over the twelve month period and provide a report to Council about the results of this program. The Queensland Sustainable Schools Program might provide assistance here. The website for the NSW Sustainable Schools program contains a web based tool which might also assist.
- Conduct a program with the cleaning staff of a percentage of *Wipe Out Waste* schools to undertake a visual weekly audit of the waste produced by the school. A simple form for completion would need to be produced to aid this process. Weekly reports could be collated and analysed to determine both the immediate effect of the program and the trends over time. Again this information could be included in the report to Council.
- Teacher classroom audit program. Similar to the project above, but a percentage of classroom teachers undertake a weekly waste audit process. Students could be involved in the audit and collating and analyzing the data.

At the home level

- The current household survey form is amended to include more information amount of waste reduced etc. Parents are requested to provide self reported data to Envirocom for analysis and reporting.
- Up to 10 student champions are identified in a percentage of schools. They work with GCCC and Envirocom to determine and implement local processes of data collection about the household impact of the program.
- The *Wipe Out Waste* program is enhanced by a household audit program. A series of targeted households are audited progressively [pre and post school visit] in order to measure impact of the program. This proposal needs to be funded but it will provide excellent snapshot data about the impact of the program.
- In conjunction with Envirocom, Council varies its waste data analysis process up to four times per year so that data from an identified school catchment can be separately analysed. It is acknowledged that this is a difficult proposal to implement, especially as pre and post [school program] data would be required. At a maximum four schools per year could be targeted for this process. This will provide comprehensive data about the impact of the program on the waste stream.