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Committee **Environment**
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Evaluation of *Take Action*

1. Purpose

To inform the Committee of the outcome of an evaluation of *Take Action*.

2. Strategic Context

Take Action contributes to the Biodiversity, Water, and Waste goals in the Council's Long Term Council Community Plan. Work is currently underway on a second programme which will contribute to the Council's goals in the areas of air quality, energy, and transport.

3. Background

The purpose of *Take Action* is to help 8-12 year olds understand their environment and the impact they have on it. It aims to enable them to understand that their actions contribute to the environment in which they live and that they can act, both personally and collectively, to change this situation if they wish. It empowers young people to become environmental role models for their families and communities. The ultimate aim is to promote positive environmental behaviour change amongst pupils and schools who undertake the programme.

When a school starts *Take Action* the initial focus is fresh water. With the help of Greater Wellington's teachers and their classroom teacher, students investigate and explore the causes of pollution and water wastage in local streams and rivers, before taking action with solutions (called "action projects"). The programme's flexibility allows schools to adapt it to cater for their particular environmental issues or teaching priorities. Over the four years *Take Action* has been running, it has evolved to meet schools' needs for an effective tool to raise students' environmental awareness and understanding of the natural world. The programme now routinely covers topics such as water pollution and conservation, soil formation, recycling, waste reduction, composting, coastal issues, biodiversity and re-vegetation.

Schools that are alert to its possibilities can use it to cover a variety of curriculum issues. This contributes to the Council achieving its objectives for the programme, namely the widespread uptake of its key messages. After four years, it is appropriate to evaluate *Take Action*'s effectiveness and consider further improvements where necessary. Over the last six months we have been evaluating our existing data and surveying teachers on the programme. This builds on earlier work of a similar nature carried out in 2003. A report has been prepared outlining the findings, which is available for Councillors to see if they wish. The aim of the evaluation is to assess whether *Take Action* is meeting its objectives, how it is being taken up by schools, and whether it is providing value for money. This report provides a summary of this work.

4. Methodology

Since *Take Action* commenced, we have collected data on how we are implementing it and how schools are using it. We have surveyed teachers regularly since term two of 2002 (60 teachers have answered our surveys). We carry out analyses of the programme's strengths and weaknesses for every school once it has completed the programme. We have also tested groups of children see whether their awareness of the environment has increased and what they have learned from the programme.

While a range of aspects of the programme have been evaluated, the following six factors are considered to be the most critical to the success of *Take Action*:

1. Accessibility
2. Value for money
3. Relevance to the curriculum and suitability of the content to children's learning needs.
4. Teacher satisfaction.
5. Children's learning from the programme
6. The nature of the environmental changes schools are achieving.

The findings in relation to these factors are summarised below.

5. Summary of results

5.1 Accessibility

Take Action needs to be easily accessed by schools if it is to be widely taken up and made available to as many students as possible. To enable this to happen, any barriers which might prevent teachers or schools accessing the programme need to be identified and overcome. Potential barriers could be relevance (i.e. that the programme is simply not relevant to or usable by schools), teacher uncertainty, cost, language, safety, demand exceeding supply and the availability of teaching resources.

The issues of relevance and teacher uncertainty are discussed below. The barrier of cost is dealt with by making the programme free to Wellington region schools. Greater Wellington meets all travel costs and subsidises “action project” costs where they arise (most schools find local benefactors such as businesses to pay the cost of materials for physical projects like worm farms or composting arrangements).

Accessibility is also enhanced through the availability of the programme in te reo māori. Key resources have been translated into te reo and one of the 12 guided places each year is reserved for a kura. Teachers are regularly questioned about our coverage of health and safety. They say they are impressed with the attention we give to this aspect of the field trip. Schools are provided with a complete hazard assessment and management system even though the wellbeing of students remains their responsibility. There has been only one significant accident since the programme started (a broken limb of a parent helper).

The problem of demand exceeding supply has been solved through the provision of the self-guided option. It is possible to do the entire programme using the resources and instructions on Greater Wellington’s web site. This has been the case since the programme commenced. While we occasionally get more schools wanting to do the programme than we can cope with, they have invariably been fitted into the next year’s programme.

There are 222 primary and intermediate schools in the region. At June 30 2005, 78 schools had completed the programme (35%). Of these, 15 schools (19%) came back to repeat the programme, most self-guided. Repeat business of this order is encouraging because it suggests the programme is valued by schools. However, the level is only satisfactory and it could be higher. Altogether, the programme has been taken up 92 times since 2000 (including five schools which piloted the programme in 2000).

Attachment 1 lists all of the schools that have completed the programme. Attachment 2 shows their distribution across the region. Although it is pleasing to see nearly 80 schools applying the programme, again the percentage is encouragement to “think smarter” about reaching an even greater number of schools. Table 1 below shows uptake on a territorial authority basis.

Territorial authority	Number of schools completing <i>Take Action</i>	Total schools	%
Wellington	29	71	41%
Hutt City	10	49	20%
Upper Hutt	11	18	61%
Porirua	10	29	34%
Masterton	4	21	19%
Carterton	2	6	33%
South Wairarapa	3	8	38%
Kapiti	8	20	40%
Region	78	222	35%

As the table shows, there has been a smaller amount of uptake in the urban area of Lower Hutt and in some rural parts of the region. Our analysis suggests that for Hutt this is due to these schools being larger, and with syndicates that have more than the usual two or three classes. This makes it harder for one keen teacher to commence the programme and establish a foothold, as is often the case in smaller schools. This year we are developing a form of the programme specifically for larger schools. This is being piloted by Fergusson Intermediate School in Upper Hutt where the whole school is taking part over three terms.

The high level of uptake in Upper Hutt is explained by the large number of self-guided schools in this district this year. Our expectation is that this pattern will be repeated in other parts of the region as we promote the self-guided option in these areas. While some Wairarapa schools have been stand out performers (e.g., Greytown School), the uptake there is less than the regional average. Rural schools require a tailored approach as the causes of the issues of environmental concern are different to urban areas. We have delivered the programme successfully to a handful of rural schools and will be putting more emphasis on this next year.

5.2 Value for money

Table 2 shows the estimated cost per student to deliver the programme in the last four years. This is the cost of delivery only and does not include printing and development costs associated with the production of teaching resources in 2001-02 and 2003-04. It is difficult to extrapolate any trends from this data, other than that the cost per child decreases most when more schools take up the self-guided option. This is the explanation for the lower figures in the first and latest years.

Year	Students	Cost per student
2001-02	1700	\$85
2002-03	1320	\$104
2003-04	990	\$182
2004-05	2195	\$73

The total number of students in 2004-05 reflects the strong emphasis put on training teachers to lead their schools through the programme (i.e. self-guided), rather than guided by Council staff. Having produced a suite of teaching tools and resources aimed specifically at enabling teachers to do this (based on our earlier evaluation and teacher feedback), this is the direction we are now following. This should lead to an even lower “unit cost” and greater value for money in the future.

5.3 Relevance to the curriculum and suitability to learning needs

Schools will not undertake *Take Action* if it does not assist teachers to implement the curriculum and if it is not fun and engaging for students. *Take Action* was designed so that it can be easily integrated into the national curriculum. It was also designed to fit the best practise guidelines for environmental education formulated by the Ministry of Education. It covers learning *about* the environment (the “investigate” part of the programme), *in* the environment (the field trip, or trail, held in a regional park and at a stream by the school) and *for* the environment (taking action through “action projects” to make a difference).

Teachers consider the programme to be highly relevant to the curriculum. Seventy eight percent of the 60 teachers we polled rated its relevance at the top of a five point scale, with a further 17% rating it a four out of five. It has been integrated successfully across eight areas; Science, English, Maths, Learning Languages, Social Sciences, the Arts, Technology, Health and Physical Education.

The suitability of the programme to children’s learning needs is measured by assessing the suitability of the field trip and the resource books we provide. Ninety one per cent of teachers rate highly (four and five out of five) the suitability of the field trip for their students’ different learning needs. Their comments show that they are especially impressed with the hands-on nature of the learning, the strengthening of science skills, and the capacity of the material and Greater Wellington’s staff to adapt to students’ different abilities. However, teachers with classes below the age group recommended for the programme (8-12), found their students struggled with some of the concepts and activities covered during the field trip. This re-enforces our perception that

the best results are achieved by children in the upper levels of the primary education system.

Engaging the students is of key importance to achieving understanding and buy-in. *Take Action* was intended to be fun to do. The vast majority of teachers (96%) rate the activities their classes perform in working through the *Take Action* resource book to be engaging for their students.

On all three of these indicators, teachers' ratings improved over the 2002 to 2004 period. This is partly explained by a larger proportion of older children in 2004, but it is also due to the modifications made as the programme has been delivered. In particular, it reflects more recently developed guides, resources and training to help teachers integrate the programme into their school's long term planning and across all areas of the curriculum.

5.4 Teacher satisfaction

Since teachers are the gate keepers to *Take Action*'s presence in a school, their satisfaction with the programme is very important. We looked at how easy is it for teachers to implement the environmental initiatives we are promoting and their satisfaction with the job we are doing in their classrooms. To assess this we looked at the part of the programme where children "take action" to help the environment. This is the most demanding part for teachers and requires committed teacher input. Not surprisingly, teachers' scores for this aspect of the programme were lower than elsewhere in the evaluation. Asked to rate how essential the taking action part of the programme was, 53% gave it a score of five, and 37% a score of four (out of five). However, teacher satisfaction is increasing. We recognised in 2003 that teachers needed more help with this phase and produced "how to" guides for coastal restoration, biodiversity, worm farming, composting, recycling, and spreading environmental messages.

To be successful *Take Action* must be delivered to teachers and children with a high degree of competence and professionalism. When teachers were asked whether the delivery of the programme was to their satisfaction, seventy five per cent rated our delivery at the top of the scale. A further 23% rated it highly. The delivery received consistently positive and very positive responses over all three years. This is important as teachers are routinely presented with a myriad of information and programmes that organisations want taught in schools. Schools will choose those programmes which they know will provide a quality product for their students.

5.5 Children's awareness and learning

If students are not learning how to care for the environment, the programme would need not be meeting its objectives. Evidence of learning has been gathered by surveying student's knowledge before and after their involvement and by analysing comments from teacher surveys.

All of the teachers who answered this question (50 out of 60) indicated that the programme had been a useful learning experience for their students. Not unexpectedly, they identified its utility as increasing student's knowledge of

conservation, stream health, and storm water. In addition, they also highlighted children's increased understanding of the scientific approach, the hands on nature of the programme, and increased social skills developed through co-operative learning and experiencing real-life situations.

A random sample of students from both 2003 and 2004 answered questions before and after the programme about storm water drains and how to improve the health of a stream. Their responses show that the number of students who can successfully describe the functions of a storm water drain doubles by doing the programme (from 37% to 74%). Student knowledge of how to care for their local stream increased threefold over the course of the programme (from an average of less than one suggested remedy per child to 2.5 per child – based on answers from 162 students). This increased knowledge is also evident to our staff when they question the children at the end of the programme. Although a good result, there is still room for improvement in these figures.

Does the programme cause children to change their behaviour? Assessing behavioural change is difficult to do with the information available and the absence of long term focused studies of children. However, comments from 12 teachers who responded to this question indicate outcomes do last after the programme's completion. Six out of the 12 schools cited children having an enthusiasm and willingness to pick up litter in the school grounds, without teacher prompting. Five schools stated that students were still taking responsibility for sorting recyclables and organising their collection. In addition students were teaching new and younger students in the school about the recycling system. Students also brought in recycled items for art resources. Worm farming, recycling and planting were the most frequently occurring ongoing action projects.

Two of the 12 schools indicated that receiving an Enviroschools Award (in the first year of the awards scheme in Wellington) had helped keep the ideas current in the school. One school commented that a favourable ERO report had also helped. This comment has been repeated to the *Take Action* team by other principals whose schools have been involved in the programme.

Teachers reported generally good support from district and city councils during and after *Take Action*. This included supplying bins to schools for recycling projects and providing schools with plants and mulch for plantings in the school grounds. This link with local authorities is helpful to the sustainability of action projects in schools.

However, teachers also volunteered the usual suspects of lack of time, staff changes, and children leaving as factors working against longer term environmental change within their schools. With the programme only four years old, it is not clear yet how long lasting the impact of *Take Action* will be in schools. However, we recognise the need to help schools to progress along this path and put an emphasis on doing this.

5.6 Environmental outcomes

The outcomes generated by *Take Action* are not only educational; they are also ecological and practical. We assessed the contribution schools and students are making to the environment through student “action projects”. These projects run the full gamut, from messages for families on caring for streams and stream-life, to active restoration of degraded water ways, school-wide recycling systems and walking school buses. The evaluation shows that approximately fifty per cent of the projects undertaken by schools doing *Take Action* are practical improvements to their local environment which have the potential to have a lasting impact (e.g., re-vegetating stream banks, re-cycling school waste, composting and worm farms etc). (More information about these projects will be presented at the Committee meeting.)

As indicated above, the written resources produced in June 2004 to help schools undertake practical projects have proven useful in increasing the proportion of longer lasting projects. Our approach to teachers is to promote these kinds of action projects.

6. Could *Take Action* be improved?

Whilst the findings presented here suggest *Take Action* is both effective and delivered well, there are also some aspects that could be improved. These include the following:

- Increasing the uptake is of paramount importance. There are still more schools that we can and should reach. Our experience thus far shows that the most effective way to do this is to train teachers to lead the programme themselves. The increase in staff resources provided in the last budget round will definitely yield increased numbers of both guided and self-guided schools.
- Targeting the programme at the under-represented areas of Lower Hutt, Masterton, and rural parts of the region. By using the self-guided option this can be achieved without others missing out.
- Developing a system to evaluate more thoroughly the effectiveness of the self-guided option. Our knowledge of their success is more anecdotal than that of the guided schools.
- Clarifying the programme’s objectives so they are more measurable. From the beginning, the objective of *Take Action* has been to deliver the benefits of environmental education to as many children as possible. Although the programme’s objectives have been explicit, it has lacked measurable targets that can be routinely assessed. It may be appropriate to set more demanding targets for children’s learning (e.g., that 90% know the functions of a storm water drain) and more specific targets for numbers, size, and location of schools. In addition, while we have reasonable data on student achievement, this needs to be collected more thoroughly.

- Creating networks of like-minded teachers who can support each other in developing environmental education in their schools after their interaction with Greater Wellington has ceased. This is already underway.

7. Communications

The overall positive tone of this evaluation can be used to promote the programme and assure teachers of its quality and effectiveness. A summary of the report will be sent to schools as part of the marketing of the programme in September. Further opportunities to promote *Take Action* in this way will be investigated.

8. Recommendations

It is recommended that the Committee:

1. *receives the report; and*
2. *notes the contents.*

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Attachment 1: Lists of schools that have completed the *Take Action* programme

Attachment 2: Map of schools that have undertaken *Take Action* from 2000 until Term 3, 2005