

**JOINT WASTE DISPOSAL BOARD
11 MARCH 2004**

**'WASTE WATCH' PROJECT UPDATE
(Report by Project Director)**

1. Introduction

- 1.1 Members will be aware that the Re3 authorities submitted, in September 2002, a joint bid to the DEFRA Waste Minimisation and Recycling Fund. The bid was for funding to support a joint project aimed at helping to raise awareness amongst residents of existing recycling schemes.
- 1.2 Although the Re3 authorities were not initially successful, we were ultimately awarded £195,000 to fund the project. Due to the timing of, and stipulations on, the award, the active part of the project had to be demonstrably completed in a period of six months up to the end of March 2004.
- 1.3 This report details the progress of the Communication and Awareness Raising Project that Officers from each of the three authorities and our consultants, Waste Watch, have been working on since October 2003.

2. Recommendation

- 2.1 **That Members note the contents of this report.**
- 2.2 **That Members receive a presentation from Waste Watch, in support of this report, on the progress of the Communication and Awareness Raising Project.**
- 2.3 **That Members agree to receive a further report on the results of the Communication and Awareness Raising Project at a subsequent meeting of the Joint Waste Disposal Board.**

3. Supporting Information

- 3.1 The main aims of the Communication and Awareness Raising Project can be summarised as follows:

Assessment of baseline performance, including participation in existing recycling schemes.

Development of strategies and insight that would support the Re3 authorities in subsequent years.

A marketing and awareness raising campaign to raise participation rates in the councils' kerbside recycling schemes.

- 3.2 Our consultants, Waste Watch, have broken the project down into two phases. Although due to the time constraints both phases have had to run concurrently, the first has sought to inform the second. The two phases are summarised in the table below.

Development Phase

- i) Participation study of the councils kerbside collections,
- ii) A three month Doorstepping campaign to assess attitudes to recycling and highlight available recycling services,
- iii) Communications audit – of existing council material and communication techniques,
- iv) Production of a Re3 communications plan for the next two years.

Implementation Phase

- i) Re3 branded marketing campaign,
- ii) Study of the methods available to the councils in introducing effective recycling in areas of flats and HMO's,
- iii) Study into breaking down the local barriers to non-participation in three different types of Central Berkshire community,
- iv) The production of a locally themed teaching pack on waste and recycling aimed at Key Stage XXX of the National Curriculum,
- v) An INSET day for teachers from the three Councils (including funded cover for the teachers),
- vi) A launch of the Re3 brand .

- 3.3 The Development Phase includes the elements of the project that take longest to complete. As such, and because of the short timescale available, many of the tangible results of the project are only now beginning to be available.
- 3.4 The Participation Monitoring exercise was the first major element to be undertaken. The exercise has highlighted the variance between neighbourhoods in terms of participation in our individual kerbside collections.
- 3.5 This information is a useful benchmark that can help to inform future initiatives in each of the Re3 authorities. The overall results of the participation exercise are included at Appendix 1.
- 3.6 The next, and largest single activity, is the Doorstepping campaign. Doorstepping began early in January 2004 in Wokingham District. The team of 9 Doorsteppers, will upon completion, have spent four weeks in each of the three local authority areas and will have visited in the region of 40,000 households.
- 3.7 Doorstepping can be undertaken in a number of ways depending on whether you wish to promote or to gather information. In this project we decided to go for a combination of both.

- 3.8 In the Re3 Doorstepping campaign, Residents are asked to undertake a brief questionnaire. The questionnaire has been designed to both test their understanding of the recycling facilities available to them and help the Doorstepper to engage them in a more meaningful discussion involving their attitudes to recycling. In this way residents are encouraged to maintain or begin participation and we are able to glean useful information ranging from the clarity of our leaflets to the reasons why our schemes do not appeal to some residents.
- 3.9 If a resident is not at home when the Doorsteppers call, a leaflet is posted through their letterbox introducing the Re3 project and outlining ways in which the resident can take part in the questionnaire or simply contact their authority for more information.
- 3.10 No results are available at the moment (Doorstepping in Reading is still ongoing). But anecdotal evidence from both Wokingham District Council and Bracknell Forest Borough Council suggests that there has been a very encouraging rate of requests for questionnaires and, even better, for recycling boxes.
- 3.11 During the period November 2003 to the end of January 2004, Waste Watch carried a 'Community' Study in each of the three authorities. In Reading they looked at ways in which ethnic communities might be better engaged by the Councils recycling services. In Wokingham District, Waste Watch took a similar approach for rural communities and in Bracknell Forest Borough they looked at urban areas that Officers there felt were performing below their potential in recycling terms.
- 3.12 Among other activities qualifying as 'work in progress' are: the Communications Plan which aims to be a strategy for the Re3 brand over the next 1 to 2 years, The Education Pack and Inset Day (Draft of information for teachers included at Appendix 2), An 'Estates' Report looking at the techniques that have been successful in terms of introducing recycling in areas of flats and HMO's and also a launch for the Re3 brand.
- 3.13 A five-week Marketing Campaign, involving a designed advert in a combination of locations, is scheduled to begin after Easter. The locations will range from Bus (backs and/or sides), Adshells and newspapers.
- 3.14 In conjunction with the visual campaign, a series of radio adverts will be aired on our local commercial stations.
- 3.15 Despite the fact that the end of the project is fast approaching, there is much left to report to Members. As such it is proposed to prepare a further report for Members at a subsequent and appropriate Joint Waste Disposal Board Meeting.

4. Legal Implications

- 4.1 No Legal Implications arising from this report.

5. Financial Implications

- 5.1 The DEFRA Waste Minimisation and Recycling Fund awards a maximum amount to each successful bid. Expenditure against the project is reported back to DEFRA throughout the term of the project. At its conclusion, and subject to proof of how much has been spent, DEFRA reimburse the expenditure of the authority.
- 5.2 Bracknell Forest Borough Council have, in common with the PFI element of our joint work, acted as the Lead Authority in relation to the finance of this project.
- 5.3 In accordance with the contract with Waste Watch Bracknell Forest have so far approved an initial payment of 60% of the £195,000 total cost. Another payment, equivalent to 30% will be made in early March and a final payment of 10% will be made upon completion.
- 5.4 Upon payment of the final sum due to Waste Watch, Bracknell Forest Borough Council will be able to claim back the entire expenditure on this project.

Background Papers

Contacts for Further Information

John Osborne, Project Director, 01344 355606

e-mail john.osborne@bracknell-forest.gov.uk

Oliver Burt, Waste Management, 0118 9390900

e-mail: Oliver.Burt@reading.gov.uk

Initial results of Participation Monitoring : Re3 (selected areas)

	No of households participating	No of households surveyed	Participation (%)
Wokingham			
Mon: Route E1	472	1022	46
Tues: Route D2	682	1204	57
Wed: Route G3	305	895	34
Thurs: Route G4	360	989	36
Fri: Route D5	488	1099	44
Average		5209	43
Bracknell Forest			
Zone 2 Wed/Round 2	214	658	33
Zone 2 Thurs/Round 1	216	1274	17
Zone 2 Fri/Round 2	146	571	26
Average		2503	25
Reading			
East Reading (off Wok' Rd)	497	927	54
West Reading (Potteries)	371	733	51
Caversham Heights	640	832	77
Whitley	520	979	53
Average		3471	59
Summary	4911	11183	44

Re3 Teachers Information sheets:

Features:

National Curriculum Links for all activities:

- Summary sheet with table outlining subject links for all activities
- More detailed information for each activity

Glossary:

Brief explanation of terms used in pack, particularly waste related terms.

Fact Boxes:

- Spread throughout the pack with the aim of providing short pieces of interesting information, which will make the reader think.
- Wherever possible containing locally relevant information
- Also to include comparisons with other countries

Further information details:

- Other publications
- Useful websites
- Videos
- CD-roms

Text:

What is Waste?

Waste, rubbish or refuse all refer to the same thing: the things we no longer need, so have thrown away.

For individuals the most obvious form of waste is the household rubbish we leave out each week for the council to collect, and the litter we see lying on the ground.

However if we want to fully understand waste we must remember that virtually every part of our society generates it. So not only households, but also hospitals, schools and businesses, from offices to manufacturing industries, create waste.

We also have to remember the hidden waste behind anything we use, by looking beyond what we can see going into the bin, and considering the whole lifecycle of a product.

Before a product is purchased by the consumer there will have been waste associated with its:

- The extraction / harvesting
- Transport
- Manufacture

Using a product can also generate waste:

- For example a car using oil, and a toy using batteries
- In fact almost everything we do creates waste.

Global Waste Issues:

Human society has achieved much in areas such as technological invention, medical research and cultural sophistication. However over the centuries we have also become more and more wasteful. The earth's natural resources are being extracted at faster and faster rates, and are increasingly being used to make goods with short lives, which we then discard.

We are then left with two problems:

- Running out of natural resources
- The methods we use to discard our waste cause environmental damage

Our Ecological Footprint:

William Rees, the Canadian professor of urban planning at the University of British Columbia, coined the term "ecological footprint", it is a measure of the land area needed to sustain a particular population at its current level of resource consumption and waste generation.

Thanks to work done by Professor Rees and his colleague Mathais Wackernagel, it is possible to calculate a family or individual footprint, based on consumption patterns, type of transportation used, amount of living space, diet, energy use and waste generation.

As societies have developed they have demanded more goods and services. The Earth is our only source of raw materials and we have become more and more demanding on it to provide us with materials, as well as to supply our increasing needs for energy to transport manufacture goods and support our lifestyles.

Some resources are renewable (such as wood, only of course if sufficient trees are planted to replace those felled) some are not, such as fossil fuels like oil and coal. Once we have extracted and used up the last of these resources we cannot grow or make more of them.

FACT BOX: Computers, email and the Internet were heralded as the means to reduce our need for paper, yet globally paper consumption has more than tripled over the past 30 years.

(source World Resources Institute; Earthtrends)

There remains great inequality and as a result huge differences in the consumption patterns across the globe. The more developed nations use huge amounts of the earth's resources when compared with the less developed nations of the South.

Country	Annual consumption per person			
	Paper (kg) 1998	Motor gasoline (litres) 1997	Passenger cars (per 1,000 people) 1996	Meat (kg) 1998
USA	293	1,688	489	122
UK	159	519	360	76
Japan	238	422	373	42
Bangladesh	1.3	2	0	3
Cameroon	2.7	22	7	15
Guatemala	18.9	70	10	20

(source ERC: Resource consumption)

Why does this matter?

FACT BOX:

Wackernagel has calculated that the average American footprint is 24 acres (9.8 hectares), a consumption level that, if enjoyed by everyone on earth, would require 5 planet earths to provide the necessary resources and space for wastes.

(source: www. People and planet.net. Environmental footprints: a tale of two families, by Don Hinrichsen)

Obviously this is unsustainable and we need to drastically rethink the desirability of continuing such patterns of living.

In addition to using more products, these products are increasingly designed to be disposable or at least intended to have relatively short lives. The era of mass production has made products cheaper and cheaper, and as a consequence, if they break they tend to be replaced rather than repaired. We thus consume more products and generate more waste.

A further negative impact of our high levels of consumption is that the extraction of resources often impacts negatively upon Southern countries for example through destructive mining or logging. We have increased our wealth and prosperity at a price – we have built mountains of waste in the North and left scarred environments in the South.

FACT BOX:

Household waste in UK is increasing by 3% every year.

FACT BOX:

The average household throws away one tonne of rubbish every year.

What happens to all this rubbish?

Landfill:

The simplest and cheapest method of disposing of our waste in the UK has historically been to bury it unsorted in holes in the ground. These are known as Landfill sites.

Problems:

- Waste of resources – once buried these resources are then lost and cannot be used again
- These sites can be sources of Pollution through:
 - a) Leachate – a liquid that accumulates within landfill sites and if it escaped would pollute groundwater and surrounding soil. Good design and management is needed to prevent pollution. Older sites relied on natural dilution to disperse the effects, but new landfills usually use liners to contain the liquid. Leachate is collected for treatment before discharge or re-circulated within the site.
 - b) Methane and Carbon Dioxide – generated when biodegradable waste such as paper, card, textiles, food and garden waste, rots without oxygen. Both gases are greenhouse gases and contribute to global warming. About two thirds of the waste landfilled is biodegradable. Some sites have gas controls, and 75 even extract the gas to generate energy. Burning the methane produces Carbon Dioxide, which has a much weaker global warming effect.

FACT BOX:

In 2004 there are 1,500 landfill sites in UK.

FACT BOX:

10 MW of electricity are currently produced from landfill gas in UK.

FACT BOX:

Space approved for landfill is set to run out in the next 5 to 10 years (source – Environment Agency).

Landfill:

Activity – image based, using photographs of Landfill site – preferably Smallmead.

Activity – calculations based on number of dustcarts going to Smallmead landfill each week and life expectancy of the landfill at this rate.

Incineration / Energy from waste:

An alternative method of waste disposal is to burn or incinerate it. Nationally the UK incinerated 8% of its municipal waste in 2000/01, although locally in Bracknell Forest Reading and Wokingham incineration is not used. Other European countries incinerate higher proportions of their waste than UK:

- Denmark 52%
- France 24%

Some incinerators use the heat produced to generate electricity or for district heating, and are known as Energy from Waste plants. Whilst this remains a better option than incineration without energy recovery, burning waste produces air pollution and plants need to have sophisticated equipment to remove this. Emissions from incinerators are tightly controlled by the Environment Agency, and have greatly reduced since 1990, with Dioxin emissions falling by over 98% since tighter standards were introduced in 1996.

Once the waste has been incinerated, the resulting ash is either disposed of in landfill or used in the construction industry.

Of course burning our waste also has the disadvantage of destroying resources that could have been reused or recycled.

How does this affect your area?

Local Waste Issues:

Bracknell Forest, Reading and Wokingham together generate over 207,000 tonnes of waste from households every year.

Breakdown of household waste figures generated in each borough/district April 2002 – April 2003, and its fate:

2002/03 household waste	Total household waste	% recycled	% landfilled	Tonnage composted
Bracknell Forest	56,040 tonnes	18%	72%	3003 tonnes
Reading	72,896 tonnes	11%	86%	2,382 tonnes
Wokingham	54,813 tonnes	23%	77%	3,579 tonnes

Of course households are not the only areas that generate waste, and the factories, businesses and offices in these three areas create additional commercial waste which also has to be collected and disposed of.

What happens to all this waste?

In Bracknell Forest, Reading and Wokingham any rubbish put out in general waste wheelie bins or dustbin bags is landfilled. The same is true of any waste put into the 'general waste' containers at the Civic Amenity sites. Currently over 80% of the rubbish from households in these three areas is buried in a hole in the ground, and this is a huge waste of resources.

Q1

The three councils recognise this and are working together to reduce the amount of rubbish that is thrown away and to increase recycling. Their new plan of action is called: **Re3 – Zeroing in on waste.**

How does this affect you? (1)

The solution is here: Re3

- **Reduce**
- **Reuse**
- **Recycle**

Reduce:

To try not to generate the waste in the first place. It is the key to long term solutions to our waste problems.

At a personal level this can mean taking your own bag to the shops, so that you don't need to pick up carrier bags, or choosing products with minimal packaging, and avoiding disposable goods.

At a manufacturing level 'reduce' means to consider the waste implications of a product when it is designed, ensuring that products are designed to last as long as possible and can easily be repaired, as well as making them from materials that can easily be recycled.

Reuse:

To use things more than once, either for the same thing – plastic bottles can be refilled time and time again, or finding a different use for it - Ice cream tubs and margarine tubs make useful storage containers.

To find another use for something which you no longer want rather than throwing it away. This could be passing something onto a friend or charity shop.

Recycle:

To recycle something is to reprocess it into a new product. The new product can be the same as the original, such as an aluminium can made from recycled aluminium cans, or it could be something completely different, such as a pencil made from a recycled vending cup.

There are opportunities to recycle rubbish through the various kerbside collection schemes operated by your three councils, as well as by using the recycling containers at the Civic Amenity sites such as that at Longshot Road, and at other sites such as supermarkets.

What happens to the recyclables collected through the kerbside schemes and the civic amenity sites?

They are taken to a Materials Recycling Facility (MRF) at Beenham, where they are carefully sorted and separated into the different materials, and any contamination or non-recyclable material removed. Each material will then be

baled and sent on to reprocessing facilities where they will be recycled into new products.

Activity – Board Game based on MRF

Recycling will not work unless there is a market for the recycled products. This means that if we are only truly recycling if, in addition to using kerbside schemes and recycling banks, we also buy recycled goods. This is known as 'Closing the Loop.'

How can you tell if something has been recycled?

Unless something specifically states that it has been made from recycled materials, or at least contains a proportion of recycled material, the symbols found on products can be confusing:

- There is no law governing the use of environmental symbols, only recommendations.
- The 'Mobious Loop' is used to denote that a product contains all or a proportion of recycled material. However it is also used to state that a product is potentially recyclable (even though facilities for that material may not exist in that area).
- The Green Dot actually means nothing in UK as it refers to a collection scheme operating on the continent.

What is recycling?

Example of **glass recycling** – diagram of the process.

FACT BOXES Glass:

- In UK we use 6 billion glass bottles and jars every year.
- The average rate for glass recycling in Europe is 55%.

But in 2000 the UK only recycled 25% of its glass, with 75% sent to landfill. Switzerland recycles over 95% of its glass.

- It takes about 3,000 bottles to fill a bottle bank
- The first bottle bank was set up in UK in 1977, and there are now nearly 23,000 around the country.

(figures from British Glass, and Wastewatch)

Glass is made from sand (silica) using intense heat to melt it. However using sand alone would make a fragile glass, so soda ash (calcium carbonate) and limestone (calcium carbonate) are added to make a stronger, more useful glass. Sand, soda ash and limestone have to be quarried or mined, and are not renewable resources.

When glass is buried in landfill it does not break down, and instead lies there uselessly forever.

Glass can be recycled an infinite number of times without loss of quality, and the more we recycle the less our natural resources will be depleted.

Recycling glass also saves energy as it takes less energy to melt one tonne of recycled glass than it does to make one tonne of glass from raw materials.

When glass is collected for recycling it needs to be separated into different colours: green, brown and clear, as these are the three most common colours we use for glass products. Clear glass would be contaminated and tinted if green or brown bottles were mixed in with it.

In UK the most common colour collected for recycling is green (over 50%) but our factories use mostly clear (for food products we want to see) and brown (beer and spreads). In the past this meant we had a surplus of green glass, and its value was very low. However recently new markets for green glass have been developed, such as 'Glasphalt' a road surfacing material that incorporates glass.

Activity – making paper from waste paper

Activity – sorting out order of cards demonstrating stages of paper recycling process

How does this affect you? (2)
Your school bag!

(Using a school bag and its contents to illustrate the range of materials that can be recycled.

Also using it to illustrate other 'r's e.g. reduce and reuse

<i>Bag</i>	<i>Fabric</i>
<i>Books</i>	<i>Paper</i>
	<i>(Cardboard)</i>

<i>Lunchbox</i>	<i>Foil (wrapping sandwiches)</i>	<i>Metal</i>
-----------------	-----------------------------------	--------------

<i>Plastic yoghurt pot/bottle</i>	<i>Plastic</i>
<i>Fruit</i>	<i>Food and green waste -</i>
<i>Compost</i>	<i>Cardboard)</i>
<i>Drinks carton</i>	

Illustration of school bag and its contents.

Bag:

This bag is made from fabric.

Fabric facts:

% of average dustbin contents – 2%

7.5 billion articles of clothing are thrown away each year.

Nearly 2 million shoes are thrown away each week in UK.

Textiles can be made from animal-based natural fibres such as wool and silk, and from plant-based fibres such as cotton, flax, and jute.

They can also be made from man made fibres such as nylon, acrylic and polyester, which are made from oil-based chemicals.

Unwanted and outgrown clothes and shoes can be passed onto friends or relatives, sold at car boot sales, given to jumble sales and charity shops, or put into Clothing banks where they will be reused or recycled into industrial wiping cloths and filling materials.

Books:

Pages made from paper with cardboard cover.

Paper / cardboard Facts

%of average dustbin contents – 33%

Historically paper has been made from a variety of materials including straw, hemp, jute, sugar cane and cotton. In fact some banknotes today are made from cotton. However nowadays the vast majority of paper is made from pulped wood.

Paper is one of the easiest materials to recycle, and paper can be made from 100% waste paper. Fibres are the basic ingredient needed for papermaking, and every time paper is recycled the fibres get shorter. Paper can usually be recycled five times before new fibres have to be added.

Paper is a highly versatile material with thousands of uses, and we use huge amounts of it every year.

We each use six trees worth of paper every year.

Foil:

Foil is made from a metal – aluminium

Metal facts:

% of average dustbin contents – 7%

Metals are mined from the ground either by open cast or deep shaft mining, and have been used by humans for over 5,000 years. Open cast mining in particular has negative environmental consequences due to the destruction of natural habitats.

Some metals (such as gold) are found in their natural state, and so need relatively little processing. But most are hidden within ores, which require lots of energy and many stages to extract.

Recycling metals has been carried out for thousands of years, and saves both resources and energy:

Using aluminium scrap instead of bauxite saves 95% of the energy.

Using steel scrap instead of iron ore saves 75% of the energy.

Bottle:

This is made from plastic.

Plastic facts:

% of average household dustbin contents – 11%

Plastics are made from oil, and plastic production accounts for 8% of the world's oil consumption.

The first plastic was invented in 1839, but plastics were not used to make everyday household goods until 1960s, and it has only been in the last 30years that plastic has become a commonplace material in our homes. Plastics have transformed many areas of our lives, providing us with a huge variety of products, and it would be difficult to imagine life without them. However this valuable resource is often used to make disposable goods, and plastic packaging for example makes up a large volume of the contents of our dustbins.

Plastic recycling can be complicated due to the great variety of types of plastics, which need to be sorted before they can be recycled. Indeed some goods are themselves made out of more than one type of plastic.

Fruit:

Compost:

In the UK about 29.3 million tonnes of domestic rubbish is produced each year. Over 60% of this is biodegradable, with an average of 38% made up of food waste such as vegetable peelings, tea bags and food scraps.

Between 50kg and 125kg of biodegradable garden waste is generated per person each year in the UK.

Compost forms as a result of the natural breakdown of organic material derived from living animals and plants. The "breaking down" is aerobic i.e. an oxygen using process performed by the bacteria, fungi, insects and animals, which inhabit soil. Micro-organisms convert the material into carbon dioxide, water vapour and a stable residue, compost. Composting is nature's own and oldest method of waste disposal and soil fertilisation.

Compost is valuable as:

- A soil fertiliser
- A mulch
- A soil conditioner, improving soil structure in both clay and sandy soils.
- It can reduce soil erosion and stop desertification
- It can also be used in 'bioremediation' to restore contaminated soils

Activity – minibeast investigation

Activity – decay experiment

Action – How can you make a make a difference?

Activity – Investigation into the recycling options available where you live.

