



Let's take it from the tip

Yorkshire and Humber
Regional Waste Strategy

July 2003

**YORKSHIRE
AND
HUMBER
ASSEMBLY**
Voice of the region

Executive summary

Waste - and what we do with it is important, nationally and regionally, economically and politically.

Waste is economically valuable, and better recycling rates together with new markets for recycled products could create 1500 new jobs across the Yorkshire and Humber region. In addition, better waste management can cut greenhouse gas emissions.

But it's only as recently as the year 2000 that statutory targets for waste have been in place. Before then, all recycling targets were aspirational.

Consequently, little emphasis has been placed on waste issues at a national, regional and local level.

But now the Government wants more priority given to waste issues, and is expected to introduce new policies to make sure this happens.

Therefore this Waste Strategy aims to develop sustainable waste management systems for Yorkshire and Humber.

Why the waste issue in Yorkshire and Humber needs urgent action

The amount of waste being produced is rising every year at a rate of around 3%. By 2020 there will be twice as much municipal waste as now.

The majority of waste goes to landfill, so economically valuable materials that could be re-used, recycled or composted are lost.

Legislation will compel change toward more sustainable waste management practices. European Directives are enforcing the adoption of waste management practices; European legislation is setting demanding targets; and the UK Government is introducing a local authority scheme of tradable permits for disposing of biodegradable municipal waste.

This region is one of the worst performing in England with an average regional recycling rate of around 6%. This will need to be improved to 21% by 2005/6 to attain the first government target deadline.

But "business as usual" would result in escalating costs, most of which would fall to local authorities and, therefore, Council tax payers to fund.

There has been some ambiguity and uncertainty in national waste policy issues in the past. This has complicated and delayed planning and decision-making for local authorities and the waste management industry. Central government is now creating a clear national policy direction for the regions to follow.

But there is a cost. For local authorities, introducing more sustainable waste management systems will require new investment.

Also obtaining planning permission for all types of waste management facilities is a lengthy and contentious process for local authorities, the waste industries and objectors. In addition, the market for recycled waste materials is under - developed in the Yorkshire and Humber region.

Regional objectives and targets

First, engaging all sectors of the community (local councils, local strategic partnerships, business, families and individuals) in action on waste will be necessary to achieve the targets and objectives of the strategy.

The target is to implement a region-wide waste awareness campaign by the end of 2004, and evaluate and report on its effectiveness by March 2005

Next, less waste means fewer resources are used and less waste treatment is needed. For this objective, the targets are to reduce the annual increase in waste production per household to 2% by 2008/9; and to achieve statutory targets for recycling and composting household waste and diverting waste from landfill.

Third, there are currently two methods used in the region to deal with residual waste: landfill and energy from waste (through incineration), with landfill being the most commonly used. Other forms of residual waste management, such as gasification, pyrolysis and mechanical biological treatment - are likely to become technically feasible and commercially viable and so offer more sustainable options.

Finally, a key role for the Yorkshire and Humber Assembly is to influence the development of new waste policy and legislation and ensure that the interests of the region are promoted.

Providing technical support is an important regional function. Here the targets are to establish networks of contacts from local authorities, waste companies, environmental groups, community organisations and individuals; to disseminate good practice on waste management; to provide updates and interpretation on new legislation; and to facilitate discussions to inform consultation responses to UK and EU Governments.

The role of planning

This strategy also satisfies Government advice to Regional Assemblies to produce technical advice for waste planning authorities. This planning guidance covers good practice and design issues, as well as setting out the capacities and densities of new waste management facilities that will be needed.

Addressing waste issues in Regional Planning Guidance (RPG) helps overcome difficulties in the planning system, and supports local authorities wanting to implement their own waste management strategies.

Activities, such as market development for recyclates, education and lobbying on EU and UK policy, are as important as the planning framework and demonstrate tangible benefits of adopting a regional approach to waste management.

Foreword

This is the first waste strategy for the Yorkshire and Humber Region. The purpose of the strategy is to make it easier, quicker and more cost effective to set up sustainable waste management systems in the region. These must be systems that yield maximum environmental, social and economic gains and allow us to reach, and even exceed, Government targets and legislative requirements.

At the moment, in terms of recycling and composting waste, the Yorkshire and Humber region is the poorest performing region in England. In this strategy we look at why this is the case, what can be done to improve performance and set out an action plan to drive forwards.

The involvement of partners such as the Environment Agency and Government Office for Yorkshire and Humber, local authorities as well as organisations, businesses and people in the region with a interest in waste management has shaped and supported the development of this strategy.

The next stage is using this strategy to make a difference in the way we view and manage our waste. There are challenging targets to meet for reducing and recycling waste, new legislation to comply with and difficult decisions to be made on how best we can dispose of waste that remains. In the first review of this strategy in 2005 we shall be able to see what progress we have made and what else we need to do.

If you have any comments or suggestions about the strategy or would like to discuss regional waste management issues, please contact the Yorkshire and Humber Assembly.

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Introduction

The development of the strategy

The development of the Waste Strategy for Yorkshire and Humber has been co-ordinated by the Yorkshire and Humber Assembly. However, the role in overseeing the formulation of the strategy has been undertaken by a Steering Group. This Group is made up of organisations with an interest in waste, including local authorities, the Environment Agency, waste management industry and environmental groups. During the preparation of the strategy the Steering Group also operated as this region's Regional Technical Advisory Body (RTAB) on waste. In response to comments received on the draft version of the strategy a new RTAB has been formed that will report to the Steering Group. The membership and structure of the Steering Group is detailed in Appendix A and a diagram that illustrates the process followed to formulate the strategy is included in Appendix B.

The involvement of organisations and individuals with an interest in waste management in the region was a priority to help inform the Waste Strategy. Consultation on the strategy was carried in two phases. Phase 1 involved local authorities, environmental groups and waste management companies and considered possible options for managing municipal waste. The feedback from this phase of consultation helped in the formulation of a draft version of the strategy. During phase 2 of the consultation there was then an opportunity to comment on the draft version of the strategy. Workshops were held in the region to raise awareness of the draft strategy and encourage more people and

Regional Waste Strategy for

organisations to come forward with views and suggestions. The feedback received from phase 2 has shaped this version of the strategy. Reports on phase 1 of the consultation on the strategy and the feedback received in phase 2 are freely available from the Assembly. For further details, see the bibliography in Appendix C.

Consultants, M.E.L., were employed by the Assembly to undertake the background technical research to underpin the strategy and in particular to find out how much and what sort of waste is produced in the region and how it is currently managed. This data has been used to produce different projections on patterns of future production of waste. M.E.L. also carried out a review of current and good practice in waste management.

The strategy contains the facts and figures on current waste production and management in the region and forecasts for the future. It sets out 4 objectives and an action plan for how we can work together across Yorkshire and the Humber to achieve the objectives and establish more sustainable waste management practices. The strategy also includes regional planning policies on waste that have been included in Yorkshire and Humber Regional Planning Guidance. These planning policies will help to drive forward the strategy's objectives.

The technical data that underpins the strategy is too lengthy to include within this document. All this information has been written up as a series of technical papers that are freely available on request and on the internet. The list of papers and who to contact to obtain copies are detailed in the Bibliography. Throughout the strategy a number of specialist or technical terms are used that may not be familiar to some readers. A glossary of these terms is included in Appendix D.

Why is a regional waste strategy needed?

There are five reasons why waste is an important issue in Yorkshire and Humber that needs urgent, co-ordinated and effective action.

1. The amount waste being produced is rising every year

The amount of municipal waste is increasing at a rate of around 3% every year. If this trend continues, it will mean that by 2020 there will be twice as much municipal waste as currently produced. This increase in waste is due to a number of factors including increasing levels of consumption as well as an increase in the number of households.

2. The growing volume of waste and the way we currently deal with it has environmental and economic costs

It is often said that we live in a "throw-away society", but this does not reflect reality; we squander much of the value of the goods and materials that we produce and buy. In our manufacturing processes, for example, only 10% of the raw materials used end up in the final product; the rest is wasted. In addition, 20% of the food bought from supermarkets goes straight into the bin. Improving on this level of resource efficiency would, of course, save money and improve business profitability and competitiveness. In this region like the rest of the UK, the majority of waste goes to landfill. This means valuable items and materials that could be re-used, recycled or composted are lost. In addition, the current levels of biodegradable waste going to landfill causes high emissions of methane, a significant greenhouse gas.

3. Legislation will compel change toward more sustainable waste management practices

European Directives on waste are enforcing the adoption of waste management practices in line with a defined Waste Hierarchy (see page 24) that restricts the use of landfill, controls the environmental impacts of waste treatment and encourages more recycling and composting. European legislation on waste sets demanding targets for the UK and

Yorkshire and the Humber

particularly for local authorities. Complying with the legislation will incur substantial costs, especially for local councils.

The Landfill Directive sets very challenging targets for local authorities to divert biodegradable municipal waste (BMW) from landfill.

- To reduce BMW sent to landfill by 2010 to 75% of that produced in 1995
- To reduce BMW sent to landfill by 2013 to 50% of that produced in 1995
- To reduce BMW sent to landfill by 2020 to 35% of that produced in 1995

To achieve these targets, the Government intends to introduce a local authority scheme of tradable permits for disposing of biodegradable municipal waste. (Further details on this scheme, the Landfill Directive and other legislation are provided in Appendix 5).

4. The Government has set all local authorities in the region targets for recovery, recycling and composting

The UK national strategy for waste, Waste Strategy 2000, translates the national targets needed to comply with European legislation into statutory targets for local authorities. (Further details on these are provided on page 23 and in Appendix 5). As a region we are the poorest performing region in England with an average regional recycling rate (in 1999/2000) of around 6%. This will need to be improved to 21% by 2005/6 if we are to attain the first target deadline.

North Yorkshire	10%
Humber	9%
West Yorkshire	8%
South Yorkshire	4%
Regional performance	6%

5. The financial costs of “business as usual”

To continue with our current practices would result in escalating costs, most of which would fall to local authorities and, therefore, Council tax payers to fund:

- Increasing volumes of waste will increase costs above the rate of inflation, even if costs per tonne to treat waste remained constant. If municipal waste quantities increase at 3% per year unchecked, this will double the costs of managing by 2020.
- Landfill tax will increase from its current level of £13/tonne by £3 per tonne in 2005/6 and by at least £3 per tonne in years thereafter on the way to £35/tonne in the medium term. This will nearly triple landfill tax costs.
- The UK will face fines in the region of £180 million per year if it fails to comply with the landfill directive

Why haven't we made enough progress already?

Organisations within the region have made progress towards more sustainable waste management and there are many examples of good practice. More details on this are given in the technical papers on current and good practice listed in the Bibliography. Progress to date has been hindered by a number of barriers and constraints that will need to be addressed if further progress is to be made.

Regional Waste Strategy for

Support for change

Until very recently, waste issues did not attract a great deal of national political importance. Statutory targets for waste were only introduced with Waste Strategy 2000; previously, all recycling targets had been aspirational. As a consequence of this lack of a national lead, less emphasis was placed on waste issues at a regional and local level. The Government has indicated that it now wants more priority to be given to waste issues and is expected to introduce a range of new policy measures, such as an increase in landfill tax levels, to bring this about. It is important that we are all aware of the increasing importance of waste issues, the reasons behind this and the complexities of doing something about it.

Costs

The UK as a whole and this region in particular has had an abundance of landfill that has allowed us to develop waste management based on this form of disposal. It has also made waste management costs relatively cheap. To landfill a tonne of municipal waste, not including landfill tax, still only costs around £30 - £40 per tonne compared to around £85 - £135 per tonne to recycle waste.

Markets for recyclates

Recycling is much more than separating and collecting waste items. It involves developing appropriate reprocessing technologies and facilities, finding uses for the reprocessed materials, generating sufficient demand for the materials so that the whole process becomes financially viable. This is called "closing the loop".

The market for waste materials that can be recycled is under-developed across the whole of the UK, including in this region. Even if local authorities were able to substantially increase the quantities of waste collected for recycling, this material could not be reprocessed and sold within the region. The consequences of this are that the value of waste collected for recycling is low and unstable and does not significantly offset the high costs of collecting it.

Planning

Obtaining planning permission for all types of waste management facilities is a lengthy and contentious process for local authorities, the waste industries and objectors. By their nature waste management facilities, whether they are recycling centres or energy from waste plants, are often unwelcome and significant objections may be made. On one hand, the waste industry feels that there has been inconsistency in planning decisions with applications refused due to public opposition, on the other, health impact fears are a wholly understandable public concern. In the past these issues may have been heightened by an apparent lack of consensus about the relative impacts of different waste management technologies.

How can the regional approach of this strategy help to create sustainable waste management practices across the region?

The purpose of this strategy is to address these barriers to progress in order to facilitate the development of sustainable waste management across Yorkshire and Humber. The strategy will do this by:

- A. Stating the region's agreed objectives for waste management
- B. Collating and interpreting best available data on waste

Yorkshire and the Humber

- C. Providing the regional planning framework for waste
- D. Developing actions to address the barriers to progress
- E. Supporting local and sub-regional Municipal Waste Management Strategies

A. Regional waste objectives

A set of 4 objectives has been formulated. These objectives are adopted by all the partners across the region and they reflect common concerns and shared aspirations.

B. Best available data

We have sought to provide a greater understanding of how much and what sort of waste is produced as well as how it is collected and treated. Extensive research into waste in the region has been undertaken for this strategy. Using past trends, demographic and economic forecasts we have been able to forecast future waste scenarios. This data provides information that can be used to model what actions need to be taken to achieve the objectives. It also makes it possible to identify the types and capacity of new waste management facilities that will be needed.

It is acknowledged that there is insufficient information on how much commercial and industrial, and construction and demolition waste is produced in the region and how it is managed. Further research will be undertaken to build a better understanding of these waste streams. This data will then make it possible to set regional targets for reducing and recycling these types of waste and identify appropriate actions to achieve the targets.

The Steering Group and the Regional Technical Advisory Body have on-going roles to provide technical support on waste management issues, including data management.

C. Regional Planning Guidance for waste

This strategy satisfies Government advice to Regional Assemblies to produce technical advice for waste planning authorities. Planning policy guidance on waste management is set out in Planning Policy Guidance Note 10. It recommends that Regional Technical Advisory Bodies (RTAB) be set up to collate data on waste and provide advice on options for managing waste in line with Government policy. The Steering Group which oversaw the formulation of this strategy acted as the RTAB for this region and the strategy includes a section with draft Regional Planning Guidance for waste. This planning guidance covers good practice and design issues, as well as setting out the capacities of new waste management facilities that will be needed. A new RTAB has been formed that will report to the Steering Group. The RTAB will monitor and review the effectiveness of the new planning policies on waste.

The value of addressing waste issues in Regional Planning Guidance is that it will help to overcome some of the difficulties in the planning system and support local authorities implementing their own waste management strategies. For example, as mentioned previously, obtaining planning permission for all types of waste management facilities is a lengthy and contentious process for local authorities, the waste industries and objectors. Undertaking this strategy and addressing the strategy principles in Regional Planning Guidance will enable the impartial demonstration of the need for facilities of all types. This will also support businesses in the region that are pressing for more waste management facilities to help them to meet their waste obligations and legislation.

Regional Waste Strategy for

D. Developing integrated solutions

The strategy goes beyond what Government requires in terms of land-use planning and Regional Planning Guidance advice. Activities, such as market development for recyclates, education and lobbying on EU and UK policy are as important as the planning framework and demonstrate tangible benefits of adopting a regional approach to waste management. These are all identified in the objectives and additional work in these areas will add value to the work that is already taking place in the region.

E. Support Municipal Waste Management Strategies

Local authorities within the region are charged with the responsibility to meet the Government targets for waste. Most of the 22 councils have either completed or are in the process of drawing up Municipal Waste Management Strategies that set out how they will do this. This strategy should support the local authorities achieve the successful implementation of their own strategies within the framework set by Regional Planning Guidance and supported by the work on market development, lobbying and education mentioned above. However, the strategy will not prescribe how local authorities should deliver their waste services as they are best placed to know what services will meet their communities' needs.

The role of strategy to deliver regional aims

The Waste Strategy primary aim is to help develop sustainable waste management systems in the region. Delivering this will contribute significantly to the vision of a sustainable future for Yorkshire and Humber that is expressed in the strategic framework, *Advancing Together*. A sustainability appraisal of the draft waste strategy was carried out. The purpose of this was to make sure that the strategy would address as many opportunities as it could to take forward sustainable development in the region. The Waste Strategy will also help deliver the objectives of the Regional Economic Strategy. Waste is an economically valuable resource. Improving recycling rates and the market for recycled products could potentially create 1500 new jobs across the region. In addition, reducing waste, re-using it and recycling can reduce greenhouse gas emissions and contribute to the region's target to cut greenhouse gas emissions by 20% by 2010 compared to levels in 1990.



The region's waste

Background

This section provides a brief overview to the region's waste. It considers waste (see definition below) and looks at what sort and how much controlled waste is produced as well as how it is treated and managed. The section also looks at how much waste is likely to be produced in the future. The information contained in this section has been drawn from the research undertaken for this strategy. This research is collated and referenced in the Data Digest (see bibliography).

“Controlled waste” is waste that must be managed and disposed of in line with waste management regulations. It includes **municipal, commercial and industrial waste, construction and demolition waste, special/hazardous waste**. It can come from private homes, schools, hospitals, shops, offices, factories or other businesses. It can include a range of materials such as old newspapers, used glass and plastic bottles, aluminium cans, food and garden waste. It does not include waste from mines, quarries and agriculture (please note though that some agricultural wastes are soon to be classified as controlled wastes).

Municipal waste is waste from households as well as other waste, which because of its nature or composition is similar to waste from households. For the purposes of calculating waste production and recycling rates, municipal

Regional Waste Strategy for

waste is taken to be waste from households, as well as other waste, which, because of its nature or composition, is similar to waste from households.

Commercial and industrial waste is made up of waste produced by wholesalers, shops, offices, catering businesses, factories and industrial plants.

Construction and demolition waste is generated from the construction and demolition industries. It includes materials such as bricks, rubble and soil.

Special/hazardous waste is waste that is potentially dangerous to human health and the environment, such as some medical and commercial wastes. The majority of special waste is from industrial sources.

The information on municipal waste was collected from the local authorities in Yorkshire and the Humber (the waste collection and disposal authorities). The figures returned were either from 1998/1999, 1999/2000 or 2000/2001. Some information on municipal waste, for example, the composition of household waste was gathered from other sources.

The main source of information on commercial and industrial and construction and demolition waste is the Environment Agency. In 1998/1999, the Agency carried out a survey of approximately 20,000 businesses across England and Wales in order to produce estimates of the wastes produced by them. These have been published in Strategic Waste Management Assessments (SWMAs) for each of the English regions. Data on special waste is also collected by the Environment Agency.

Municipal waste

Collecting and disposing of municipal waste is the responsibility of the 22 local authorities in the region. These are identified in the Table below and categorised according to their sub-region. In South Yorkshire, West Yorkshire and the Humber, all of the councils are unitary councils and are both waste collection and waste disposal authorities so they are responsible for collecting and disposing of municipal waste. In North Yorkshire, excluding the City of York Council which is a unitary authority, there is a two tier system of local government with North Yorkshire County Council and the 7 district or borough councils. In this system the 7 district/borough councils are the waste collection authorities. They pass the municipal waste they collect over for disposal to North Yorkshire County Council, which is the waste disposal authority.

South Yorkshire

Doncaster
Sheffield
Rotherham
Barnsley
Bradford

West Yorkshire

Calderdale
Kirklees
Wakefield
Leeds

North Yorkshire

North Yorkshire
Scarborough
Ryedale
Selby
Hambleton
Richmondshire
Harrogate
Craven
York

Humber

North Lincolnshire
North East Lincolnshire
East Riding of Yorkshire
Kingston upon Hull

Yorkshire and the Humber

In the region, 2.6 million tonnes of municipal waste was produced in 1999/2000 and 2.2 million tonnes of this was household waste. Of this household waste, 70% (1.55 million tonnes) was from refuse collection rounds, 25% (0.5 million tonnes) was waste taken to civic amenity sites and 5% was other waste such as collections of bulky items and clinical waste.

Figure 1 shows the proportions of municipal waste (not including waste collected for recycling) produced by each sub-region. West Yorkshire is the largest producer, followed by South Yorkshire, the Humber and North Yorkshire. This is in line with the sizes of the populations and the number of households in each sub-region.

Figure 1: Quantities in tonnes of municipal waste produced in the Yorkshire and Humber region 1999/00 excluding waste collected for recycling

	Household waste				Municipal waste	
	Collection round waste	Civic amenity waste	Other household waste	Total household waste	Other municipal waste	Total municipal waste
North Yorkshire Sub-Region						
Craven	18,500	-	***	18,500	4,300	22,800
Hambleton*	27,100	-	500	27,700	3,400	31,000
Harrogate	43,700	-	3,800	47,500	7,500	55,000
Richmondshire	14,300	-	1,800	16,200	3,800	19,900
Ryedale	13,600	-	2,300	15,900	4,000	20,000
Scarborough	38,300	-	6,500	44,800	20,900	65,700
Selby**	27,500	-	1,200	28,700	6,300	35,000
York	55,600	29,500	5,500	90,600	15,200	105,900
North Yorkshire County	-	83,900	800	84,800	0	84,800
Total	238,700	113,400	22,400	374,600	65,400	440,100
Humber Sub-Region						
East Riding of Yorkshire	108,400	57,800	3,000	169,200	7,300	176,500
Kingston upon Hull	88,100	21,800	9,400	119,300	18,500	137,800
North East Lincolnshire	62,300	10,500	1,500	74,300	5,500	79,800
North Lincolnshire	59,200	13,600	6,000	78,800	5,400	84,300
Total	318,100	103,700	19,900	441,600	36,700	478,400
West Yorkshire Sub-Region						
Bradford	127,000	54,000	16,200	197,200	81,800	295,300
Calderdale	No data	No data	No data	No data	No data	No data
Kirklees*	112,400	37,000	9,900	159,300	61,500	220,900
Leeds	184,800	63,400	15,800	264,000	58,000	322,100
Wakefield	119,900	37,100	9,500	166,500	28,800	195,300
Total (ex Calderdale)	544,100	191,500	51,500	787,100	230,200	1,033,500
South Yorkshire Sub-Region						
Barnsley	80,600	29,000	2,100	111,700	6,500	118,200
Doncaster	104,800	31,600	5,300	141,700	24,200	165,900
Rotherham	85,700	34,600	3,300	123,600	16,900	140,600
Sheffield	178,000	46,000	10,900	234,900	31,500	266,300
Total	449,100	141,200	21,600	611,900	79,100	691,000
TOTAL (ex Calderdale)	1,550,000	549,800	115,400	2,215,200	411,400	2,643,000

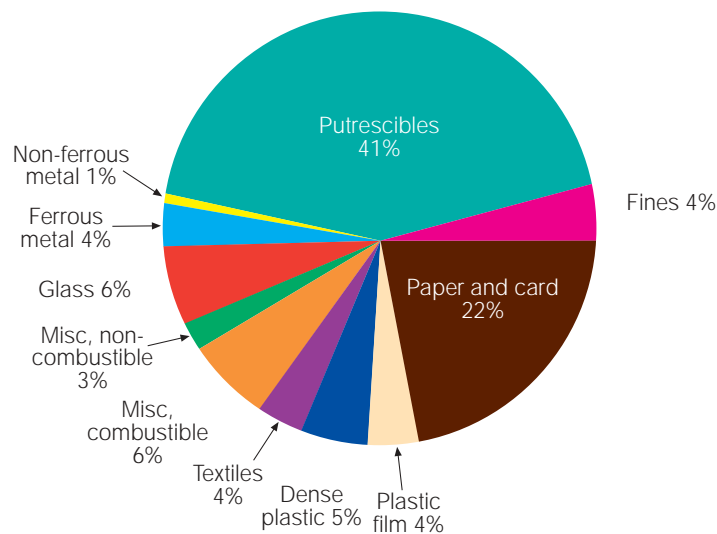
* Data relate to 2000/01 ** Data relate to 1998/99 *** Included in another column - No service provided

Regional Waste Strategy for

Composition of household and municipal waste

Understanding what materials make up waste is important in order to be able to introduce waste reduction and recycling schemes that can make a significant difference to the amount of residual waste. Research has not been carried out in the Yorkshire and the Humber to find out the composition of collected household waste in the region. However, research has been undertaken in other areas and this has been used to estimate the composition of collected household waste produced in the region. The composition of municipal waste is slightly different to household waste as it contains a wider range of types of waste.

Figure 2: Estimated composition of household waste in Yorkshire and Humber 2000



The majority of waste is biodegradable or putrescible (i.e. waste that rots and can be composted like food and garden waste). This makes up 41% of the total amount. The next largest proportion is paper and card at 22% of the total weight.

Recovery and recycling of municipal waste

The term “recovery” means gaining some value from the management of waste. This includes energy from waste, composting and recycling. The distinction between recovery and recycling is important because there are separate targets for recovery and recycling waste set by the Government for local authorities.

(The data sets collected from the local councils in the region do not distinguish between recycling and recovery and composting of green waste is included under recycling.)

During 1999/2000, 162,000 tonnes of municipal waste was collected for recycling. This represents an average recycling rate of municipal waste across the region of 6%. There is, however, a wide range in recycling rates between local authority areas from as low as 3% up to 14%.

Recycling rates in the Yorkshire and Humber region compare poorly against other regions. The Municipal Waste Management Survey 2000/2001 shows that Yorkshire and Humber is the worst performing region in terms of recycling and composting rates with an average rate of 7.2%. The highest rate of 16.4% is achieved in the South East.

Figures 3 and 4 show the quantities of waste recycled in the region by material and sub-region.

Yorkshire and the Humber

Figure 3: Quantities of waste collected for recycling within each sub-region for 1999/2000

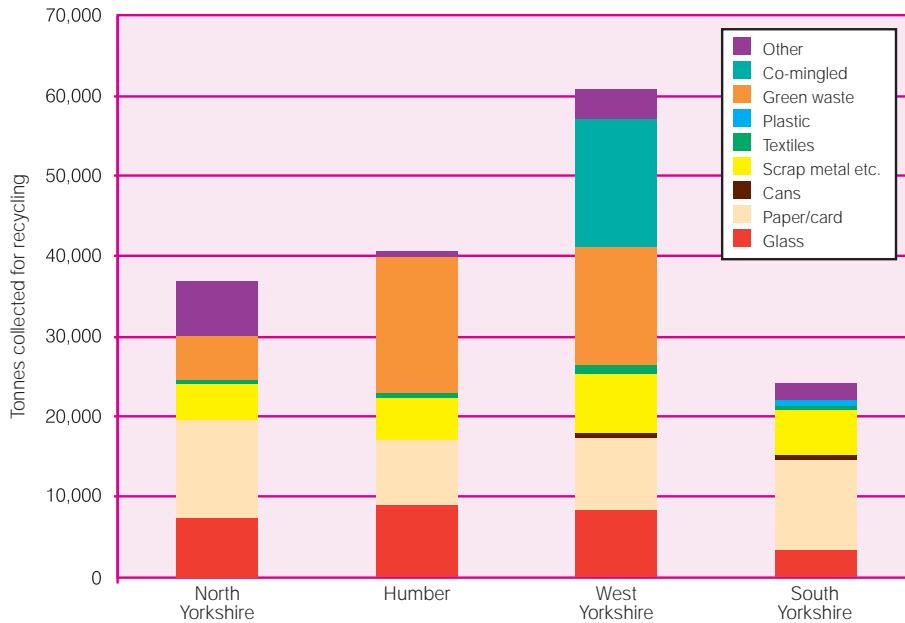
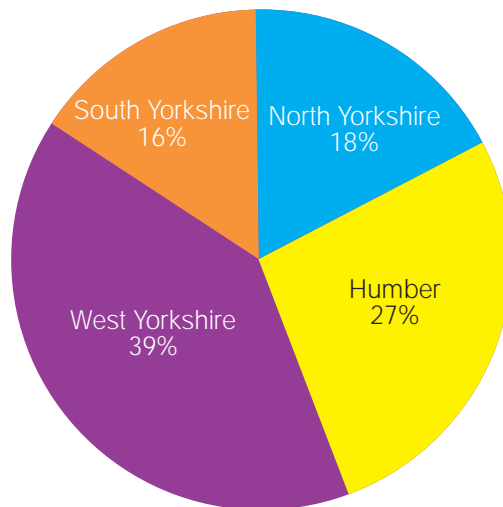


Figure 4: Contribution to waste collected for recycling in Yorkshire and Humber 1999/2000

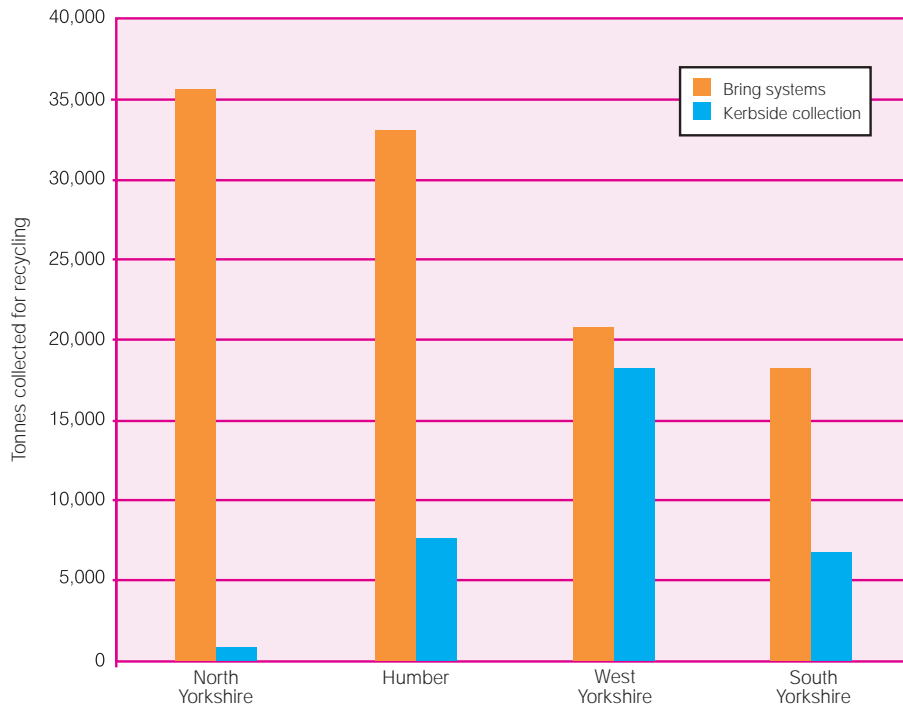


Municipal waste is collected for recycling by either 'kerbside' collection schemes or 'bring' schemes. In kerbside schemes recyclables are picked up from homes or businesses by a collection round like a refuse round. Bring schemes require people to take their recyclables to recycling banks and these can be at either civic amenity sites or other sites, such as supermarkets or public car parks.

The majority of recycling in Yorkshire and the Humber takes place through bring schemes. All the local authority authorities in the region operate bring schemes, but not all operate kerbside collections, particularly those in more rural areas. Figure 5 shows the proportions of waste collected for recycling through kerbside and bring schemes.

Regional Waste Strategy for

Figure 5: Quantities of waste collected for recycling by type of collection method 1999/2000



Disposal of residual municipal waste

In all sub-regions the majority of residual waste is disposed of in landfill sites.

Humber sub-region:

At the moment all residual waste is sent to landfill. A new energy from waste/combined heat and power plant with a capacity of 56,000 tonnes per year is being developed at Stallingborough in North East Lincolnshire.

North Yorkshire sub-region:

All residual waste goes to landfill.

South Yorkshire sub-region:

Currently most residual waste goes to landfill. In Sheffield, the energy from waste plant has a capacity of 135,000 tonnes per year. A new plant is being constructed to replace this facility and increase capacity to 220,000 tonnes per year.

West Yorkshire sub-region:

The majority of residual waste goes to landfill but there is an energy from waste plant in Kirklees which treats 135,000 tonnes of waste per year.

Forecasts for municipal waste

The amount of municipal waste that is produced every year has been growing in recent decades. The average rate of increase in Yorkshire and the Humber is around 3% each year. This is very close to the national average figure in 2000/2001 of 2.7%. The reasons for this increase have not been researched so it is difficult to explain with any certainty why this is happening. It is likely, though, that the growth in waste is linked directly to the following factors:

- Increasing prosperity - larger disposable incomes allows us to buy more goods

Yorkshire and the Humber

- Increasing numbers of households - the number of households is growing as more people live alone or in smaller groups
- More packaging of goods
- Trends, fashion and marketing - encourages more frequent replacement of items
- Widespread attitude that waste is the problem of the local council and that councils should collect whatever is left out for the refuse collection

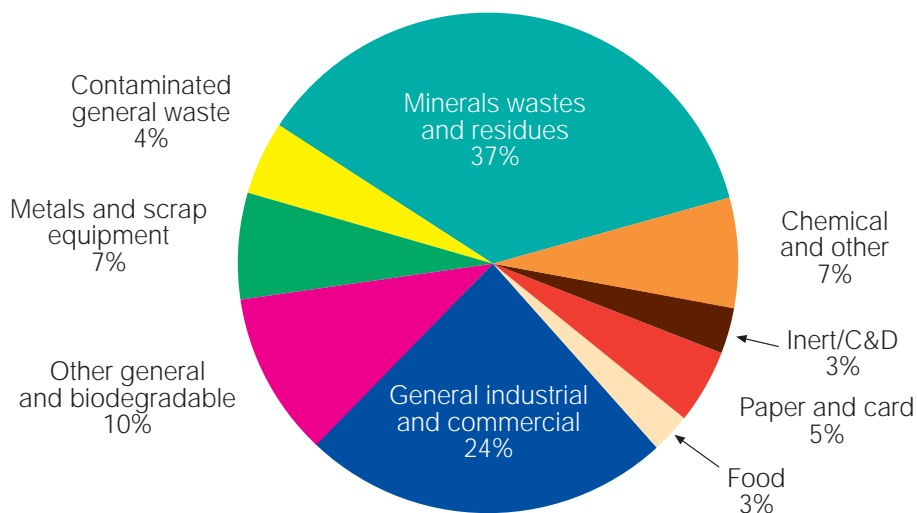
Given this, it is impossible to predict reliably how much municipal waste is likely to be produced in the future. The consultants, M.E.L., developed a series of scenarios to build up a picture of what could probably happen to waste production in the future. These are set out in full in the Data Digest (see bibliography). The message is clear, though, the amount of waste produced is likely to continue to grow every year unless positive steps are taken to address it. For this strategy it has been assumed that with concerted and intense efforts it will be possible to stem the increase in waste per household to 2%. Research will be undertaken to investigate the reasons for the increase, find out what sorts of waste account for the increase and if there are any links with factors such as income, culture and awareness of waste issues.

Commercial and Industrial waste

Publicly available information available on commercial and industrial waste is much less comprehensive and accurate than information on municipal waste. It is, therefore, much more difficult to build up as detailed a picture and understanding of how much commercial and industrial waste is produced, what its composition is and how it is managed.

It is estimated, however, from the data collected by the Environment Agency during 1998/1999 that industrial companies in the region produced 9.5 million tonnes of waste and commercial businesses produced 2.2 million tonnes.

Figure 6: Overall composition of commercial and industrial waste produced in Yorkshire and Humber 1998/1999



Regional Waste Strategy for

The Yorkshire and the Humber region is judged to produce 15.6% of all industrial and commercial waste produced in England and Wales. This is despite the fact that it has only 8% of the businesses and 9% of the employment. The Environment Agency comments that it is due to large tonnages of waste produced by the region's power stations (mainly ash and mineral residues) and its iron and steel industry (mainly slags) amounting to 4 million tonnes. The composition of commercial and industrial waste produced in the region is shown in figure 6.

Commercial and industrial waste in the region is dominated by two materials: mineral waste and residues (the ashes and slags mentioned above) and 'general industrial and commercial waste'. This latter type of waste arises in a form so mixed that more detailed reporting was not practicable as part of the Environment Agency's survey. Nevertheless, other work has shown that this consists predominantly of potentially recyclable materials such as paper and cardboard, food and plastic.

Forecasts for commercial and industrial waste

The quantities and types of industrial and commercial waste are directly related to economic activity as measured by number of companies and number of employees. It is possible therefore to forecast future arisings of commercial and industrial waste using forecasts of regional economic growth and taking into account the impact of new and forthcoming waste management legislation. The Data Digest outlines 5 possible scenarios for forecasting commercial and industrial waste. The scenarios vary from a 10% reduction in waste per employee to a 10% increase per employee.

Construction and demolition waste

8.1 million tonnes of construction and demolition waste was treated or disposed of within the region in 1999. 27% of this was recycled into aggregates or soil, 12 % was reused on landfill sites for restoration or engineering, 33% was landfilled as waste and 35% was sent to sites exempt from waste management licensing for reuse or recycling. The proportion disposed of to landfill (33%) was the highest of all regions and significantly higher than the national average of 24%.

The quantity of construction and demolition waste produced within Yorkshire and Humber is unknown. It is possible that some of the waste dealt with within the region arises elsewhere, although it could be the case that Yorkshire and Humber is a net exporter of construction and demolition waste. There is no data with which to make such an assessment.

Forecasts for construction and demolition waste

Three different projections for future arisings of construction and demolition wastes have been devised based on a range of different assumptions including number of employees, impact on increasing landfill tax and material handling practices. Each of these projections forecasts a decrease in production of either 13% or 17%. Full details are given in the Data Digest (see bibliography).

Further research on commercial and industrial and construction and demolition waste

Research will be undertaken during 2003 and 2004 to develop a better understanding of how much and what sort of commercial and industrial, and construction and demolition waste is produced in the region. The research will also investigate how the waste is currently managed and the potential for reducing and recycling.

Yorkshire and the Humber

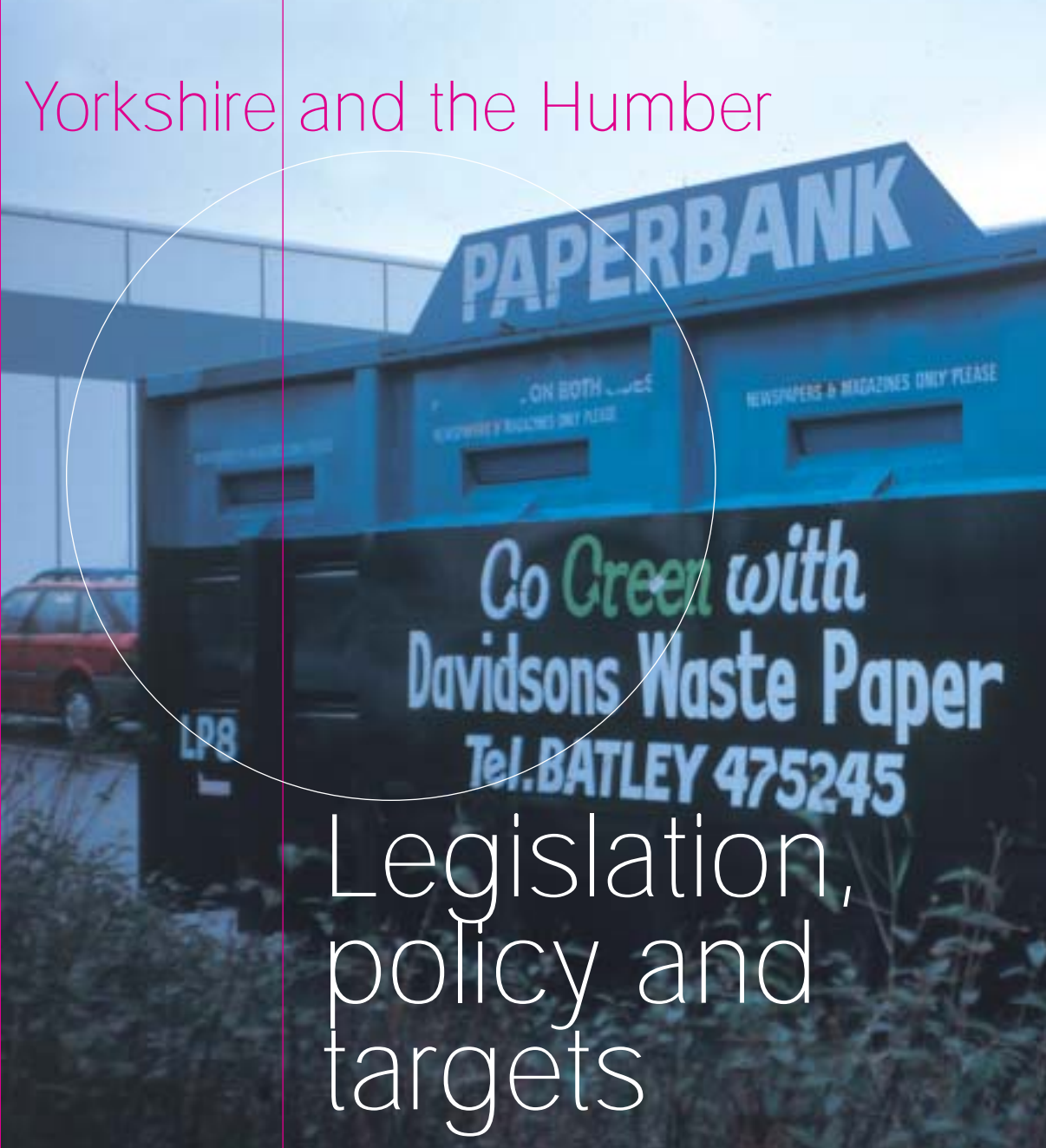
Special/hazardous waste

Data from the Environment Agency shows that around 603,000 tonnes of special/hazardous waste that was moved around the country originated in the Yorkshire and Humber region in 1998/1999. This does not necessarily correspond to the amount of waste produced in the region as each load of waste may be counted more than once or may appear later in the system after some form of treatment has been applied to it. Considering special/hazardous waste originating in the region, just less than two thirds (63%, 278,000 tonnes) went to a destination within the region. North Lincolnshire, Calderdale, Kirklees, Leeds, Doncaster and Rotherham are net importers of the region's special waste while the other districts are net exporters. Around 224,000 tonnes was exported to other regions of the UK.

The Yorkshire and Humber region imported 223,000 tonnes and exported 224,000 tonnes of special/hazardous waste. The region is a net importer of special waste from the East Midlands, London, Northern Ireland, the North East, Scotland, the South West and Wales and net exporter to the East of England, the North West, the South East and the West Midlands.

The Landfill Directive places restrictions on the disposal of hazardous wastes. From 2004 it will not be possible to dispose of hazardous waste alongside non-hazardous waste in landfill sites and sites will have to be classified and licensed to accept either only hazardous waste or non-hazardous waste. It is likely that the number of sites in the UK that will be licensed to take hazardous waste will decrease from over 200 to around 30. At this stage it does not appear that any of the existing landfill sites in the Yorkshire and Humber region will apply to be licensed for hazardous waste. This is a cause for concern and work is taking place with the Environment Agency to determine what new treatment capacity will be needed in the region.

Regional Waste Strategy for



Legislation, policy and targets

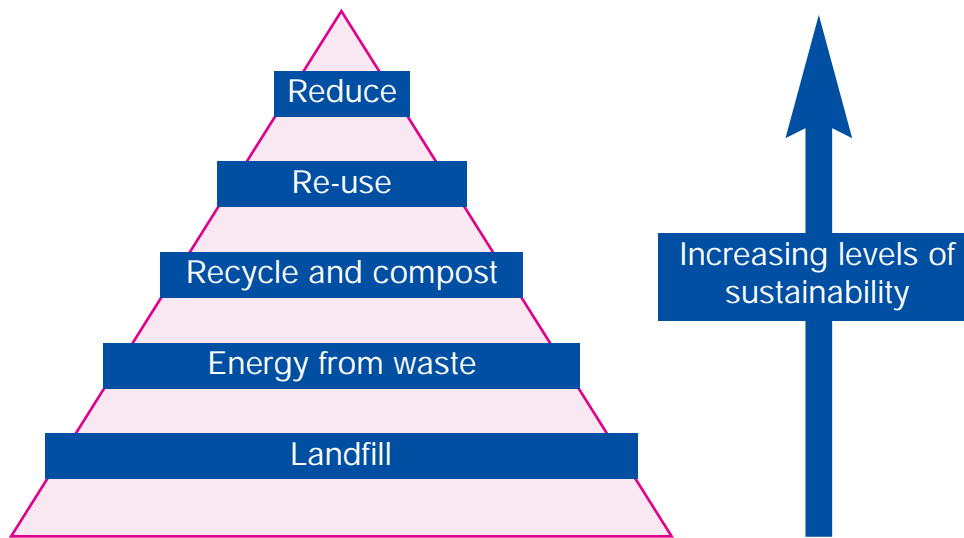
The imperative to develop sustainable waste management systems was first identified at European level. Since 1975 there has been an increasing number of Directives coming out of the European Union to compel member states to improve their waste management systems. This section looks briefly at European legislation on waste and how it has been transposed into UK legislation, policy and targets. It also assesses the implication of these for this region and the role of this strategy. A more comprehensive description of EU and UK legislation is contained in Appendix 5.

EU directives

The overall framework for sustainable waste management was set out originally in 1975 in the Waste Framework Directive that put forward the concept of the waste hierarchy and emphasised the importance of waste prevention. The waste hierarchy is illustrated in the Figure 7. It is based on the premise that the higher levels of the hierarchy reflect more sustainable waste management practices and that waste management policies and practices should try to move up the hierarchy, taking reasonable account of costs and benefits. All Directives since 1975 have been introduced with the purpose of enforcing the waste hierarchy. The most significant Directive emerging recently from the EU is the Landfill Directive. This aims to prevent or reduce the negative effects of landfill. It has a series of targets that have been transposed into UK law.

Regional Waste Strategy for

Figure 7: The waste hierarchy



UK waste policy and targets

Waste Strategy 2000 is the current UK waste strategy. It sets out how the UK is to improve waste management in line with the waste hierarchy and sets targets for reducing the quantity going to landfill to meet the requirements of the Landfill Directive. There are two sets of targets, that relate specifically to municipal waste and are the responsibility of local authorities to achieve. The first set of targets in the strategy are to reduce the amount of biodegradable municipal waste (BMW) going to landfill and the second are for recovering value from municipal solid waste (MSW) with specific requirements for recycling and composting.

The targets for reducing BMW sent to landfill are to be achieved through the introduction of a tradable landfill allowance scheme for local authorities. Local authorities that are waste disposal authorities will each be allocated a number of landfill allowances. They will only be able to send to landfill BMW up to the levels of the allowances that they hold. Local authorities that divert more waste from landfill will be able to trade their unused allowances to a local authority that requires more. Each year the number of allowances will be reduced to restrict the total amount of BMW sent to landfill. The legislation to permit this scheme to operate is currently passing through Parliament.

The second set of targets is for recycling and composting MSW. These targets have been transposed by Government into statutory targets for local authorities for 2003/4, 2004/5 and 2005/6. The targets for the local authorities in the sub-region are set out in Figure 8.

These targets present a considerable challenge and one that most authorities in the region will find very demanding. They are technically capable of being achieved, as has been demonstrated elsewhere in Europe. There are, though, a number of barriers, including costs, planning issues and markets for recycled and composted materials that will need to be addressed to support local councils in their endeavours to attain their targets. The role of this strategy is to provide this support.

Given current national recycling rates of around 12%, it appears that it will be very difficult to achieve the first statutory targets.

Yorkshire and the Humber

Figure 8: Recycling target rates for Yorkshire and Humber local authorities given as percentages of the total quantity of municipal waste collected

Authority	1998/9 Recycling Rate	2003/4 targets	2005/6 targets
NORTH YORKSHIRE SUB-REGION			
North Yorkshire County	7	14	21
Craven	9	18	27
Hambleton	8	16	24
Harrogate	7	14	21
Richmondshire	4	10	18
Ryedale	11	22	33
Scarborough	6	12	18
Selby	3	10	18
York	6	12	18
HUMBER SUB-REGION			
Kingston Upon Hull	7	14	21
North Lincolnshire	8	16	24
North East Lincolnshire	7	14	21
East Riding of Yorkshire	9	18	27
WEST YORKSHIRE SUB-REGION			
Leeds	7	14	21
Calderdale	3	10	18
Bradford	8	16	24
Kirklees	7	14	21
Wakefield	3	10	18
SOUTH YORKSHIRE SUB-REGION			
Barnsley	2	10	18
Doncaster	4	10	18
Rotherham	5	10	18
Sheffield	5	10	18

As a region, this means our overall targets are:

Sub-region	2003/4 targets	2005/6 targets
North Yorkshire	13	21
Humber	16	24
West Yorkshire	13	21
South Yorkshire	10	18
Yorkshire and Humber	13	21

Regional Waste Strategy for

Waste Strategy 2000 also includes a voluntary target to reduce commercial and industrial waste to 85% of 1998 by 2005.

In response to growing concerns across all English regions that the targets in Waste Strategy 2000 will not be attained, the Government Strategy Unit prepared a report, "Waste Not, Want Not, A strategy for tackling the waste problem". It proposed reviews to Waste Strategy 2000 and new national targets. For the first time, the proposals included a national target for waste reduction.

In addition to these recommendations the report suggested a significant increase in the level of landfill tax. The Strategy Unit report suggested that if the tax is to be effective it must be raised to a level that makes landfill more comparable in cost terms to other waste treatment options but does not impose an unacceptable burden on local authorities responsible for waste disposal. The report recommends an increase in the medium term to £35 per tonne.

The Government has responded to the Strategy Unit report in a document published in May 2003. The report sets out how the Government will address the recommendations in Waste Not, Want Not. The main commitments made are:

- Landfill Tax will increase by £3 per tonne in 2005/6 and by at least £3 per tonne in the years thereafter on the way to a medium term rate of £35 per tonne
- The Landfill Tax Credit Scheme has been reformed and a proportion of the funding - £84m in 2003/4, £92m in 2004/5 and £92m in 2005/6 - will be used to fund a new Sustainable Waste Management Programme
- The Sustainable Waste Management Programme will be managed by DEFRA. Its purpose will be to improve waste reduction, recycling and technology and research new technologies for types of waste that are currently not readily reduced, re-used or recycled. In addition, a Local Authority Delivery Task Force will assist local authorities to meet their recycling and composting targets
- Local authority funding of £90m each year for 2004/5 and 2005/6 will be provided through the Waste Minimisation and Recycling Fund.

Waste Strategy 2000 identifies future, aspirational targets for recycling and composting. These were set out in the strategy to give an indication of the likely medium - long term statutory targets. The Strategy Unit report recommends that the targets for recycling/composting should be increased to 45% by 2020. The Government response to Waste Not, Want Not states that national recycling targets will be reviewed in the light of progress made by local authorities to meet the 2003/4 targets.

The current targets already present a tough challenge to local authorities in the region; increasing these further will, of course, increase the scale of this challenge. It is important that local authorities take account of the likelihood that their targets will be raised and ensure that the recycling systems put in place are sufficiently flexible to be adapted to new standards.

An issue of considerable concern in the region is the health impacts of waste management facilities and processes. At the moment studies on this issue provide very little certainty about the impacts of waste management on health. The Government has commissioned a review of the environmental and health effects of all waste disposal and management options. It is due to report on the findings of this review during 2003.

Yorkshire and the Humber



Objectives



This chapter outlines the objectives that will take forward the overall aim of building more sustainable waste management systems across the region. A set of 4 objectives has been agreed. This section looks at each of these objectives in turn, explains why the objective is important and, how it will be promoted and where possible and suggests a target or targets.

Objective 1 Gain community support and involvement in the delivery of the strategy

Objective 2 Reduce waste production and increase re-use, recycling and composting

Objective 3 Manage residual waste in the most sustainable way

Objective 4 Provide technical support and advice

The objectives have been drawn up to take forward the principles of sustainable waste management, i.e., the waste hierarchy, proximity principle, self-sufficiency and so on as well as take into account the barriers to better waste management that exist within the region.

Regional Waste Strategy for

Priority should be given to reduce waste; the target is to cut the average annual increase in waste from 3% to 2% by 2008/9. This is an ambitious target and will need intense, concerted and prolonged efforts to realise. This target has been taken into account in the forecasts of future waste production. The figures for recycling/composting and residual waste and the facilities that will be required to manage the waste are based on the assumption that it has been possible to reduce the 3% annual increase in waste to 2% by 2008/9.

In line with the waste hierarchy the priorities, after reduction, should be to re-use, recycle and compost waste. The targets for these are the statutory targets set by Government (which are likely to be revised upward during 2004) to meet legislative requirements. These are very demanding targets.

The residual waste, i.e. the waste that remains after re-use, recycling and composting, can be managed in a number of ways, including energy from waste, landfill and emerging technologies, such as mechanical biological treatment. There are a number of issues, such as retaining flexibility, that need to be considered when deciding the most appropriate options for the future of the region as the emerging technologies are likely to offer more sustainable residual waste management options. These are discussed later in this section.

The objectives provide the framework for the policies in the regional planning guidance on waste that is set out in a later section of this strategy. This guidance includes policies on all planning issues that affect waste, including design and layout of buildings. It also identifies the types and the capacity of waste management facilities that will be needed on regional and sub-regional basis over the next 15 years.

The action plan describes additional work that will be undertaken within the region to progress the objectives and includes activities on market development for recycled materials, raising awareness on waste issues and lobbying on EU and UK waste policy.

Objective 1: Gain community support and involvement in the delivery of the strategy

Engaging all sectors of the community (local councils, local strategic partnerships, business, families and individuals) in action on waste will be necessary to achieve the targets and objectives of the strategy. Work to progress this is undertaken already locally and sub-regionally by the local authorities. Their efforts can be supported regionally by the Assembly retaining its role to coordinate the development of the strategy and regional planning advice as well as continuing to support the Steering Group to monitor and review the strategy. Other activities that will be undertaken under this objective are, for example, seminars to Local Strategic Partnerships and local authorities on regional waste issues, such as market development and new legislation.

Raising public understanding about waste issues is a vital step to engage householders and businesses to reduce waste and increase re-use and recycling. Many local authorities have education campaigns to promote waste reduction and participation in local recycling schemes. Regional level campaigns are needed to support and complement this work and to reinforce messages about reducing and recycling waste.

Community organisations can have an important role in waste management by developing schemes and services to re-use, recycle and compost waste. There are already examples of initiatives that demonstrate potential benefits of this sort of social enterprise. The Bradford Waste Chasers, for example, operate a paper recycling service to businesses in Bradford and Roseville Enterprises employs people with disabilities to refurbish redundant computers from Leeds City Council, local hospitals and Universities.

It is important that opportunities for social enterprise in waste management are exploited. The Regional Economic

Yorkshire and the Humber

Strategy includes this issue as an objective and funding as well as advice will be available for some schemes from Yorkshire Forward.

A significant obstacle to the community sector developing locally based re-use and recycling systems for household waste is the way that local authorities procure their waste management services. Tendering processes usually favour large operators. Research will be undertaken to explore how local councils can work with the community sector to deliver more sustainable waste management services taking account of local authorities' financial and contractual constraints.

Target:

Implement and region-wide waste awareness campaign by end 2004, evaluate and report on effectiveness by March 2005

Objective 2: Reduce waste production and increase re-use, recycling and composting

Reducing the amount of waste produced in the region must be the priority. Less waste means fewer resources are used and less waste treatment is needed. The target for this objective is to bring down the 3% year on year waste growth by reducing the annual increase per household to 2% by 2008/9.

The Environment Agency is undertaking a major, national research project to investigate what makes up household waste and how people dispose of it and the factors, such as age, culture or income that may have an influence on this. The results of this research will help to focus efforts on how to reduce household waste.

Even if this target is achieved there will be an overall increase in the quantity of waste produced, as there is a predicted growth in household numbers in the region.

The target to stem the growth in waste production is very challenging. Changing behaviour will make some contribution to this; simple action such as not using carrier bags and selecting items in the supermarket with less packaging. More progress, however, will be made from changes to product design and improvements to process efficiency. Opportunities to lobby for this and encourage businesses to start looking at this issue must be created. This will be a key role for the Assembly and the Steering Group. The EU is currently developing an integrated product policy that will look at design of goods, procurement and market development. The Assembly and Steering Group will monitor the progress of this policy and seek to influence it whenever possible.

Evidence from other countries that are more successful in controlling waste growth suggests that variable charging schemes that charge householders according to the quantity of waste they produce are also effective in encouraging waste reduction. The Strategy Unit report, "Waste Not, Want Not" recommended that legislation be introduced to allow waste collection authorities to do this. The Government is to undertake further work to investigate the practicalities of such schemes before extending the powers of local authorities to do this or to introduce pilot schemes.

Regional planning guidance is limited as to the avenues through which it can support wider waste reduction initiatives. However, in terms of the construction industry, it can encourage the re-use of buildings and the adoption of designs that minimise waste in their construction. Also, RPG can promote the use of recycled materials in construction and the reuse of demolition materials in situ.

Regional Waste Strategy for

Re-using goods and materials without reprocessing is the second priority for dealing with waste. Wood, furniture, building materials, white and electronic goods, clothes, books and toys are all examples of items that retain value and can be re-used. It is not possible to set a target for the region in terms of the quantity of waste that is re-used, as it cannot be cost-effectively measured. However, the number of re-use facilities, such as 'real nappy' schemes, or community furniture recycling schemes can give an indication of growth in this area.

The UK Waste Strategy 2000 sets challenging targets for recycling and composting for local authorities. In addition, to these targets, new legislation on waste, such as the Landfill Directive, the Waste Electrical and Electronic Equipment (WEEE) Directive and forthcoming Biowaste Directive, will set parameters for how waste collection and disposal authorities deliver their services. The initial objective for the region in terms of recycling and composting is to meet, at least, the UK policy and legislative targets and requirements. This objective will be reviewed in future years with a view to extending the recycling and composting targets for municipal waste to achieve levels that have been demonstrated to be possible in other EU countries.

The recycling and composting targets for household waste for the local authorities in the region are summarised below:

Year	Target
2005/6	21%
2010/11	30%
2015/16	33.3%

To achieve these targets there will need to be more kerbside collection schemes to serve communities across all parts of the region. It is recommended that local authorities implement much more widespread kerbside schemes. There is already a wealth of good practice that can be drawn on to ensure that schemes deliver value for money. In addition, local councils should seek to provide schemes that serve as many communities as possible and do not exclude rural areas and communities that are considered deprived or socially excluded. New schemes should be designed not only to achieve short term targets but so that they can be expanded in the future to meet higher targets with minimum new investment.

As well as much more widespread kerbside collection schemes, more facilities, such as recycling bring sites, civic amenity sites, material reprocessing facilities and composting plants. Regional Planning Guidance has put in place the planning framework in terms of capacity, density and design of new waste management facilities. However, even with Regional Planning Guidance in place gaining planning permission for needed facilities is likely to raise public opposition and be subject to lengthy delays so long lead in times for new facilities should be anticipated.

There is also a need to increase the recycling of commercial and industrial waste. The Landfill Directive, WEEE Directive, End of Life Vehicles Directive and Packaging Regulations place greater pressures on commerce and industry to recycle and appropriate waste management facilities will be required to facilitate this. The draft planning guidance also reflects this.

Separating and collecting waste for recycling is pointless without a market for the material. One of the most important objectives of this strategy is to establish robust regional markets and reprocessing facilities for materials collected within the region. The draft regional planning guidance supports this objective.

There are economic and employment opportunities arising from material reprocessing. These should be maximised, and the potential to attract investment to develop a national centre for specialist recycling operations should also be explored.

Yorkshire and the Humber

Building stable markets for recyclates will also require product development. The quality of materials collected can assist with this and local authorities, waste contractors and reprocessors will need to work together to ensure that materials are collected in a way that realises their value for reprocessing.

The other side of market development is establishing demand for products. This can be assisted by procurement policies that support the purchasing of goods and materials made from recyclates. The public sector in the region, local authorities, universities and the health providers, should take a lead in this.

Businesses involved in reprocessing, distributing and selling goods and materials made from recyclates need appropriate support to ensure they are able to secure adequate investment, identify the most appropriate technology and secure necessary planning permissions and waste licenses.

Targets:

Reduce the annual increase in waste production per household to 2% by 2008/9

Achieve statutory targets for recycling and composting household waste and diverting BMW from landfill

Objective 3: Manage residual waste in a sustainable way

Currently, there are two methods used in the region to deal with residual waste: landfill and energy from waste (mass-burn incineration) with landfill being the most commonly used.

Landfill is recognised as the residual waste management option that has the most damaging impact on the environment and new legislation has placed tighter controls on how much and what sort of waste can be disposed into landfill sites. Looking at the availability of landfill sites and capacity in the region, it is estimated that existing sites and licenses provide capacity until 2007/8. This estimation is based on an assumption that no additional incinerators or other residual waste treatment facilities are built and that all residual waste is landfilled.

Mass burn incinerator energy from waste plants are the least popular option for managing residual waste with the general public as well as with most community and voluntary sector organisations in the region. The main concerns over energy from waste plants are that they pose a pollution and health risk, contribute to greenhouse gas emissions and discourage investment in waste reduction and recycling. Mass burn incinerator energy from waste plants usually require contracts of 25 - 30 years with waste suppliers, such as waste disposal authorities. Such contracts could, in the timescale of this strategy, inhibit efforts to reduce and recycle waste to ensure the waste throughput and financial viability of plants. Research undertaken for this strategy indicates that if energy from waste becomes the preferred residual waste treatment option for municipal waste, the need for facilities over the next 15 years would reduce from 15 (150, 000 tonnes capacity per year) in 2005/6 to 5 in 2015/16 as recycling and composting increased in line with targets.

Over the next 5 - 15 years other forms of residual waste thermal treatment, such as gasification, pyrolysis and mechanical biological treatment are likely to become technically feasible and commercially viable. These treatments could offer more sustainable options than incineration and landfill for dealing with residual waste. A summary of residual waste options is included in Appendix F.

The way forward is to acknowledge that there may be a need for some increased capacity for incinerator energy plants from waste but that this should be kept to minimum. It could be provided on a local/district level with a higher number of lower-capacity plants (e.g. 50,000 tonnes capacity per year) or else on a sub-regional or regional basis with higher capacity plants (e.g.150,000 tonnes per year). In addition, new plants could be developed to provide

Regional Waste Strategy for

treatment capacity for both municipal and commercial and industrial waste. However, it is important that such facilities should only be developed either after or alongside measures to improve waste reduction, recycling and composting. In addition, it must be demonstrated that current and forecast targets and legislation will still be possible to achieve.

Local authorities should use assessment tools, including Best Practicable Environmental Option (BPEO), sustainability appraisal and health impact assessments, to identify the most appropriate residual waste management options when formulating or reviewing municipal waste management strategies or when tendering for new waste disposal contracts. New technologies for residual waste management should be considered in the assessment process.

In addition, other organisations commissioning new waste treatment facilities should also use these appraisal tools to identify the most sustainable option and consider new residual waste management technologies.

Target:

Municipal waste management strategies and new waste disposal contracts should be evaluated using Best Practicable Environmental Option, sustainability appraisal and health impact assessment.

Objective 4: Provide technical support and advice

Waste management continues to be the subject of a significant weight of new legislation and policy by the EU and UK Government. A key role for the Yorkshire and Humber Assembly is to seek to influence the development of new waste policy and legislation and ensure that the interests of the region are promoted.

Effective sustainable waste management practices are already established in parts of the region, the UK and the rest of Europe. It is important that local authorities and businesses in Yorkshire and Humber benefit from this experience and ideas in setting up new waste management systems and projects in the region.

Over the next 10 years there will be more new legislation on waste that will affect how businesses and local authorities operate and delivery waste management services. A service to interpret the implications of forthcoming legislation will help organisations plan for its implementation, identify business opportunities and ensure compliance.

Information and communication networks will be set up that involve local and community organisations as well as regional agencies, local authorities and waste management businesses.

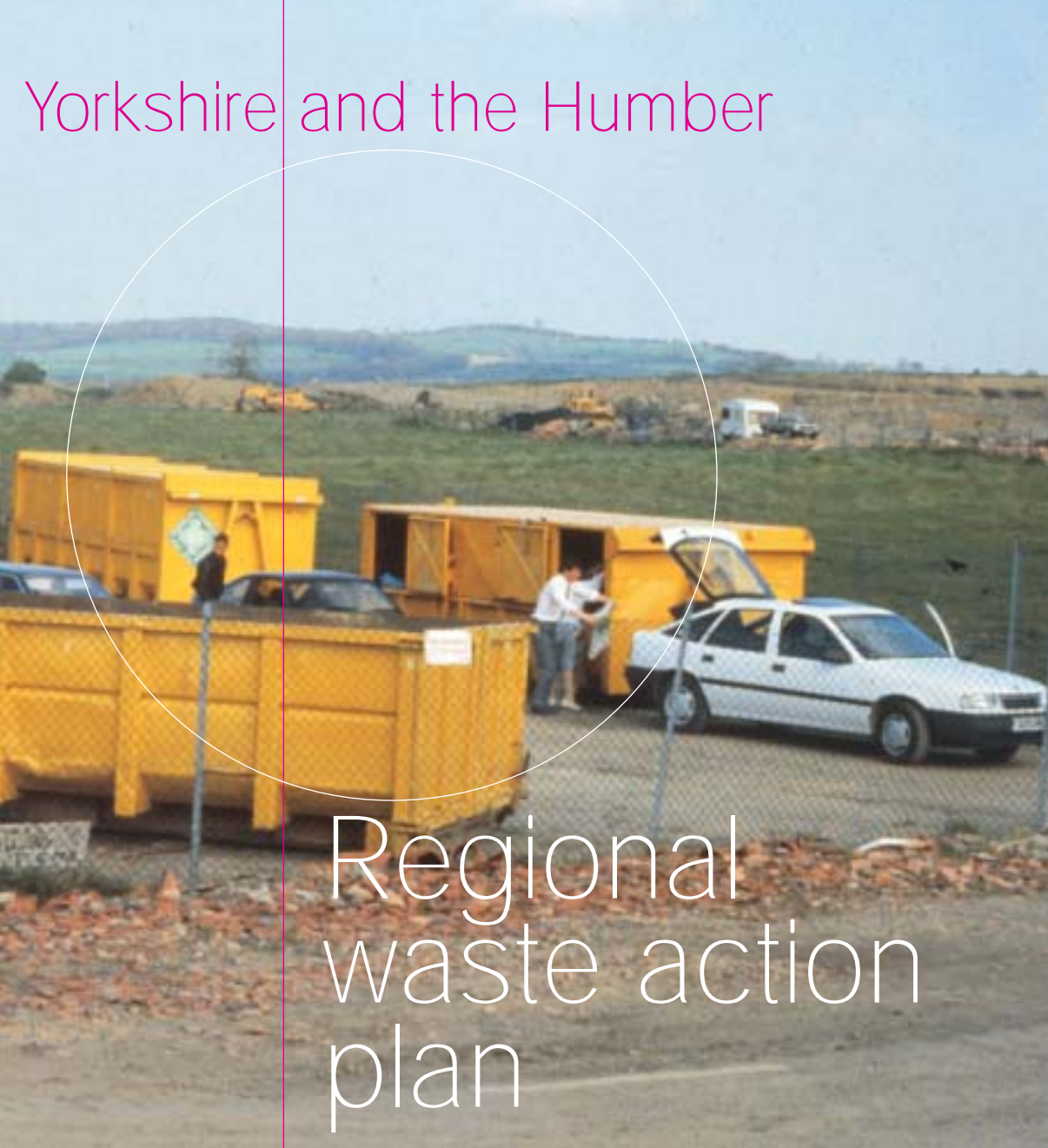
Advice and expertise is required to support and enable organisations involved in making decisions about waste services to identify and select the most sustainable options. Several tools are available that can help in this process, such as BPEO assessments, the Regional Sustainable Development Framework Sustainability Appraisal and health impacts assessments. Programmes will be run to encourage, train and support organisations to use these.

There is also a need to develop the regional planning advice on waste, in particular to provide technical advice on regional planning issues, feed into relevant public inquiries and monitor the impact and effectiveness of the guidance.

Target:

Establish networks of contacts from local authorities, waste companies, environmental groups, community organisations and individuals:

- disseminate good practice on waste management
- provide updates and interpretation on new legislation
- facilitate discussions to inform consultation responses to UK and EU Governments



Regional waste action plan

In light of the analysis and objectives set out in the first part of this document, a regional action plan has been devised. This is presented overleaf.

A great deal of work is already taking place in the region to build more sustainable waste management systems. Most of the local authorities, for example, are implementing Municipal Waste Management Strategies and engaged in improving recycling and composting rates and raising awareness of waste issues within their communities. This action plan sets out additional work that could be undertaken to progress the strategy objectives. The one exception to this is under objective 3, which refers to the work of local authorities to achieve statutory targets. The action plan seeks to be succinct and focussed. This is to make sure that resources are targeted on activities that will make the most difference. Comments on the actions and suggestions for others are welcome.

A lead partner has been identified for each of the proposed actions. It is the responsibility of the lead partners to coordinate the delivery of the action, monitor progress and report this to the Steering Group.

(Yorkshire and Humber Assembly is abbreviated as YHA)

Regional Waste Strategy for

Proposed actions	Lead agency (& partners)
Objective 1 Gain community support and involvement in the delivery of the Strategy	
Continue the Steering Group and review its membership to include more representation from community organisations and the waste industry	YHA (and Steering Group)
Hold seminars with 75% Local Strategic Partnerships (LSPs) in the region by March 2005 to consider role of LSPs in leading community action/involvement in waste management	YHA
Investigate and recommend the best way to develop and fund a region-wide waste awareness campaign. Complete study and agree way forward by October 2003.	YHA (Steering Group and local councils)
Objective 2 Reduce waste production and increase re-use, recycling and composting	
Undertake research to determine the quantities of commercial and industrial, and construction and demolition wastes that are produced in the region, what progress has been made to achieve the target to reduce waste and what potential exists to increase reduction, re-use and recycling. Complete research by March 2004	Environment Agency and YHA
Monitor the development of the EU policies on integrated product design and promote the region's interests consultation responses (during 2003/4/5)	YHA (and Steering Group)
Implement Municipal Waste management Strategies to achieve statutory targets for recycling and composting (This will be monitored annually by the Steering group)	Local councils
Collate and disseminate regular reviews on good practice for recycling and composting to local authorities	YHA (and Steering Group)
Undertake research to investigate the barriers and opportunities for community enterprise organisations to set up waste management services in the region by July 2004	YHA, Community Recycling Network, Community Composting Network and Furniture Recycling Network
Develop a sustainable procurement programme for public sector organisation in the region to stimulate the market for products made from recyclates. Initiate work on the programme during February, 2003	YHA (and Sustainability Commission)
Establish a Regional Centre of Excellence for a market development programme to develop markets and technologies for recyclates and make the most of employment and economic opportunities	Yorkshire Forward

Yorkshire and the Humber

Proposed actions	Lead agency (& partners)
Objective 3: Manage the region's residual waste in a sustainable way	
This objective will be progressed through the Regional Planning Guidance on waste	
Objective 4: Provide technical support and advice	
Lead on regional responses to all relevant consultation exercises, such as consultations on EU Directives and UK policies (on going)	YHA
Establish e-mail and web based networks by March 2004 for the region to collect and disseminate information on pilot schemes and trials as well as good practice from this region and elsewhere. Networks to include local authority waste managers and planners, community and voluntary organisations, waste management companies and local strategic partnerships.	YHA
Provide regularly updated information, interpretation and impact analysis on existing, new and proposed legislation (on going)	YHA (and Steering Group)
Disseminate and review the Government's report on the health and environmental effects of waste disposal and management options after it becomes available during 2003	YHA
Support businesses and higher education providers to secure funding for applied research into recycled products from the DTI Sustainable Technology Initiative	YF
Advise Regional Planning Body and other partners on Regional Planning Guidance issues relating to waste via research and monitoring (on going)	Regional Technical Advisory Body

Regional Waste Strategy for



Regional planning guidance policies

Background

This section sets out draft Regional Planning Guidance (RPG) for waste management in Yorkshire and Humber.

The Town and Country Planning system regulates the development and use of land in the public interest, and has an important role to play in achieving sustainable development and sustainable waste management. Traditionally, waste planning has received less attention under the planning system than issues such as housing or employment.

The challenges contained in the new agenda for sustainable waste management are significant. Land use planning will assist the implementation of waste management via national and regional planning guidance, policies contained in development plans, consideration of individual planning applications and continuing research and monitoring.

National planning policy guidance provides advice about how the land-use planning system should contribute to sustainable waste management through the provision of the required waste management facilities in England. It indicates that Waste Planning Authorities cannot consider the needs of their own areas in isolation. Waste management solutions may sometimes cross planning areas, as well as regional boundaries. In some circumstances, local options for the management of some types of waste may not be available.

Regional Waste Strategy for

The Government view is that most waste should be treated or disposed of within the region in which it is produced. Each region should attempt to provide facilities with sufficient capacity to manage the quantity of waste that they expect to have to deal with in that area for at least ten years.

The partner-based Regional Waste Steering Group prepared the draft Regional Waste Management Strategy. A land-use planning focussed Regional Technical Advisory Body (or "RTAB") will advise the region on waste planning issues and will offer technical advice on the implementation of the RPG policies presented below.

It should be noted that these RPG policies are subject to a separate public examination process that will take place in 2004. These policies, therefore, are referred to as draft at this stage.

Translating the regional waste strategy into RPG advice

A significant change will be required to move towards the vision of sustainable waste management as set out in the Regional Waste Management Strategy and the National Waste Strategy 2000. RPG advice is formulated around this objective. It is not based upon a simple predict and provide style approach, but on plan-monitor-manage. The importance of general principles and the need to apply them is presented in the following policy.

Policy R5A

Waste management strategic principles

- a) Priority should be given to initiatives and facilities which will encourage and promote waste reduction and the reuse of materials and products.
- b) Local authorities should work with regional partners, including commerce, the Environment Agency, the waste industry and community groups to ensure the integration of strategies and proposals for waste management with the regional waste strategy's aims. Authorities should seek to identify the combination of facilities and other waste management options which best meets environmental, social and economic needs for their areas based on the following general principles:
 - the waste hierarchy;
 - regional and sub-regional self-sufficiency;
 - the proximity principle;
 - the objectives and targets of the Regional Waste Management Strategy, and, where appropriate;
 - consideration of the Best Practicable Environmental Option (BPEO)

Targets for municipal waste management in the region

The recycling targets for the region set out in the National Waste Strategy 2000 are very challenging and progress towards achieving the targets will need to be monitored.

Policy R5B sets out, in terms of annual target tonnages, waste required to be recycled and composted to reach the recycling targets set out in the Regional Waste Management Strategy. This will require new infrastructure, such as Materials Recycling Facilities (MRFs) and composting plants (either windrow or in-vessel) in each sub region to deal with the increased quantities of waste being recycling and composted. Sub regional working arrangements will need to be set up in order to facilitate agreement over issues associated with these, and other sub regional apportionments. It should be noted that Government intends to review current targets in 2004, revised guidance will be provided in the forthcoming development of a Regional Spatial Strategy.

Yorkshire and the Humber

Policy R5B

Sub regional targets for municipal waste

In terms of municipal waste, facilities will be required to recycle or compost a minimum of 639,000 tonnes per annum (tpa) by 2005/6, 1,190,000 tpa by 2010/11 and 1,310,000 tpa by 2015/16. On this basis, local authorities should take into account the sub-regional needs set out in Table H9 for waste treatment generated by each sub-region.

Where appropriate, and in accordance with the principles of local Best Practicable Environmental Option and proximity, local authorities should seek agreement with neighbouring authorities to make provision in their plans to meet these needs.

Table R1

Year	Sub-region	Quantity of waste to be recycled/composted (tonnes per annum)
2005/6	North Yorks	100,000
	Humber	137,000
	West Yorks	270,000
	South Yorks	132,000
	Y&H	639,000
2010/11	North Yorks	197,000
	Humber	239,000
	West Yorks	455,000
	South Yorks	298,000
	Y&H	1,190,000
2015/16	North Yorks	223,000
	Humber	260,000
	West Yorks	503,000
	South Yorks	324,000
	Y&H	1,310,000

Table R2 gives an indication of the number of new facilities that will be needed in the region. The data in Table R2 is based on achieving targets maximising either dry recycling or composting. In practice, it is likely to be a mixture of both, but the Table makes the point that there will need to be a considerable increase in the number of treatment plants.

The scale of such facilities will be a balance between capital and operating costs on the one hand and proximity principle and size of catchment areas on the other. For the purposes of the Table, material recycling facilities (MRFs) are assumed to have a capacity of 40,000 tonnes, windrow composting 20,000 tonnes and in-vessel composting facilities 4,000 tonnes.

Regional Waste Strategy for

Table R2

	Maximise dry recycling approach			Maximise composting approach		
	Number of MRFs	Number of windrow composting facilities	Number of in vessel composting facilities	Number of MRFs	Number of windrow composting facilities	Number of in vessel composting facilities
	@ 40,000 tpa	@ 20,000 tpa	@ 4,000 tpa	@ 40,000 tpa	@ 20,000 tpa	@ 4,000 tpa
2005/6	15	3	13	4	25	121
2010/11	25	4	16	5	44	219
2015/16	29	9	44	6	55	276

Waste management facilities - locational principles

RPG is not intended to be prescriptive, and local circumstances will provide local solutions. Need is expressed in waste tonnages and this guidance identifies the increase in capacity that will be needed in recycling reprocessing and/or composting. It does not prescribe the type/mix of waste facility; these are issues that should be determined locally or at the sub regional level to meet Best Practice Environmental Option (BPEO). The capacities and numbers of sites presented in Table R2 must not be taken out of this context.

Policy R5C

Criteria for the location of waste management facilities

Development plans should include policies and proposals to set specific criteria for the location of waste treatment and recycling facilities. Wherever possible, site-specific proposals for new waste management facilities should be included in development plans.

Robust market for recyclates

A priority of the waste strategy is to assist the development of robust markets for recycled materials. It is vital to establish and retain new businesses (with facilities) to process waste suitable for recycling. Separation and collection of waste alone does not constitute recycling. It will be pointless to achieve the recycling targets without a viable market for that material. Markets will establish and grow if cost effective, and they receive right quantity and quality of separated waste. Sites for new waste-related businesses will be required to accommodate integrated facilities, where appropriate.

Policy R5D

Waste related businesses

Development plans should identify sites for new waste related businesses (either on a grouped or individual basis) to encourage their establishment. There will be a range of facilities needed in terms of both the nature of the process and capacity.

Detailed advice on the numbers and types of facilities will be offered via the RTAB following the completion of work currently underway on regional recyclate market development. However, typical material recycling facilities require

Yorkshire and the Humber

sites of 2-5 ha (depending on supplementary activities such as waste electronics or civic amenity site provision). Sites of 8-16 ha are typically required for recycling or “sustainable growth” parks.

Residual waste

Landfilling has been the dominant method of dealing with residual waste in the region. While options to move towards a “zero waste” scenario have been considered, the need for residual waste disposal will not disappear during the period covered by RPG. It will continue to be needed, if only for residues from other processes or when it is no longer practicable to recover value from waste. Following feedback from the waste strategy consultation, no expansion in currently permitted levels of energy from waste capacity has been considered for modelling purposes.

Treatment facilities and final disposal will be required to deal with residual waste. While the region may have adequate landfill capacity in the short term, there will be local or sub regional landfill capacity shortages. There may be, therefore, the potential need for some additional landfill capacity at the local level.

The application of the following policy should be the subject of a plan-monitor-manage based approach supported by the RTAB. While this will be a dynamic process, it is possible to set out some indicative landfill requirements for illustrative purposes. It is also possible to reflect the possible use of Mechanical Biological Treatment (MBT) for residual waste. MBT is a technology that can a) reduce the quantity and degradability of waste going to landfill or b) can produce Refuse Derived Fuel (RDF) pellets for use as a substitute fuel. A typical MBT plant would have a capacity of 60,000 tonnes per year.

Based upon the region meeting the strategy targets for recycling and assuming no further expansion of waste to energy, it is likely then that the following tonnages of waste, set out in Table R3 will need to be landfilled per annum.

Table R3

Year	Recycled/composted	Quantity processed through EFW (residual 10%)	Quantity required landfill (no MBT)	Number of MBT plants @60,000 tonnes	Quantity required landfill after non-RDF MBT	Quantity required landfill after RDF MBT
2005/6	638,000	400,000	2,043,000	34	1,328,000	409,000
2010/11	1,192,000	400,000	2,382,000	40	1,546,000	476,000
2015/16	1,310,000	400,000	2,265,000	38	1,472,000	453,000

Regional Waste Strategy for

Policy R5E

Residual waste treatment capacity

1. Landfill

Development Plans and Waste Local Plans should ensure that each of the sub regions should have the capacity to meet the need for landfill of residual waste arising. Plans should only promote new/expanded sites for landfill which are necessary to restore despoiled or degraded land, including mineral workings.

2. Waste to Energy

All waste to energy plants must include processes to remove recyclable material and compostable material to agreed performance levels where this has not been carried out elsewhere. Where waste local plans, local waste strategies or sub-regional waste strategies include energy recovery they should specify performance levels for recycling to avoid energy recovery acting as a disincentive to local recycling efforts, particularly in the long term. Thermal treatment without energy recovery will only be permitted in special cases or exceptional circumstances.

Design issues in general development

New building design and layout can contribute to effective waste management. Sustainable waste management initiatives may require on site infrastructure as part of new development. Businesses may require an additional plant, or a larger site area, in order to put waste minimisation plans into practice. Specific provision should be made for space to allow for the separation and collection of waste, consistent with the type of development in question, whether a housing development, employment, retail, leisure or mixed use.

While special care will need to be given to development in sensitive areas, good design aspects of waste management should be promoted. On this basis, guidance is provided amendment to Policy S6 "Sustainable use of physical resources" of revised RPG.

There can be a perception that waste facilities can often be of low quality design, poorly maintained and (in the example of civic amenity sites) be off-putting by virtue of their environment. With the exception of major capital investments, waste management facilities are generally low-cost uses of land.

In general sustainability terms, the reuse of existing buildings should be encouraged where practical. In the case of new buildings, it has been demonstrated by the waste industry that innovative and high quality design is possible. Local Planning Authorities should seek to assure that proposals for new, refurbished or extended waste facilities represent current good design practices. The RTAB, in conjunction with the waste industry, will offer advice on this matter.

Policy S6C

Sustainable use of physical resources

Local and regional authorities and agencies and others should:-

Facilitate sustainable waste management by including policies in their development plans which require that all developers make appropriate provision in their proposed developments to facilitate effective management of waste. This should include: facilities to separate and store different types of waste at source; kerb-side collection; and accessible centralised facilities for the public to deposit waste for recycling or recovery (bring systems);

Yorkshire and the Humber

Provision of an effective network of 'Bring' recycling facilities

Targets for recycling and composting will only be achieved by the introduction of improved infrastructure. This should include both kerbside recycling collection services and recycling centres to which people can take their waste ("bring sites"). It has been demonstrated in the UK, Europe and overseas that high-density, accessible and well-managed networks of bring sites result in improved recycling rates. There are opportunities in this region to improve the provision of these sorts of sites to standards of established good practice.

A range of problems affects many bring sites, especially those located at Civic Amenity (CA) sites. They are often poorly located (typically at the entrance to completed council landfill sites) and have facilities for only a limited range of materials. Many sites are being refurbished, but this process needs to be extended. In Yorkshire and the Humber there is currently 1 CA site per 20,000 households. However, there are large variations. An initial target could be to raise regional performance as a whole to that of the best performing sub region. On this basis, there is a need for more than 40 new CA sites. Facilities should be locations which are accessible. It may be likely that some exceptions to normal planning policies may need to be made in certain rural areas to achieve this goal.

The current provision of non CA bring sites (i.e. paper and bottle banks etc) in England is 1 per 1170 households. In Yorkshire and the Humber this figure is 1 per 1408 households. The Audit Commission recommends that good practice should involve the provision of one bring bank for every 750 households. This means that, in real terms, there should be an approximate doubling of the current regional provision. Notwithstanding this approach, in the more sparsely populated areas it will be appropriate to make provision in accordance with accessibility or travel distance criteria. In the North Yorkshire sub region there is already adequate provision on Civic Amenity sites on the basis of population, but the issue of additional provision in accordance with accessibility criteria still needs to be considered. Circumstances across the Region vary. No one standard approach to range of materials recycled or size of facilities is therefore considered to be universally appropriate to achieve these targets.

Policy R5F

Density of public recycling bring facility provision

Local Planning Authorities should promote, and seek to make provision for the following densities of facility provision:

Facility	Density
Civic Amenity Site	1 per 15,000 households
Non CA Bring Facility	1 per 750 households

As an indicative guide, Local Planning Authorities should urgently take into account the needs outlined below for new civic amenity sites required by sub-region.

Indicative Additional CA Site need by Subregion

West Yorkshire	21
South Yorkshire	16
Humber	4

In North Yorkshire and other predominantly rural areas CA and bring sites should be provided in accordance with sub-regionally defined access criteria

Regional Waste Strategy for

Construction and demolition waste

8.1 million tonnes of construction and demolition waste were treated or disposed of within the region in 1999: 39% was reused or recycled, 33% was landfilled as waste and 35% was sent to sites exempt from waste management licensing for reuse or recycling. The proportion disposed of to landfill was the highest of all regions and significantly higher than the national average of 24%. There is an acute regional need therefore to promote the recycling and reuse of recycled aggregates.

Developments can be designed and constructed in ways as to minimise waste and maximise the use of recycled (or "secondary") materials. This should be encouraged. The generation of Construction and Demolition wastes are closely tied to activity in the development industry. However, if financial incentives (landfill tax and the primary aggregates tax) and the principles set out below are applied aggressively, these wastes will fall significantly in volume as the recycling/reuse of these wastes in situ increases. On this basis, guidance is provided amendment to Policy S6 "Sustainable use of physical resources" of revised RPG.

Policy S6D

Sustainable use of physical resources

Local and regional authorities and agencies and others should promote sustainable construction and demolition by:-

- i) requiring that all new development should be designed and planned so as to minimise the production of waste. Development plans should require development proposals to minimise the use of raw materials and minimise, reuse and recycle waste generated during construction and demolition;
- ii) ensuring there is adequate provision of sites and facilities for the recovery of construction and demolition waste. Before granting planning permission for major development involving demolition or the production of waste materials, authorities should require information on the proposed method of dealing with waste so as to minimise its production and maximise re-use and recycling;

Special and hazardous wastes

Changes to licensing regulations will increasingly mean that special and hazardous wastes will be required to be processed separately at specialist facilities. It is therefore important that, where appropriate, adequate regional provision is available.

The Environment Agency can provide data on the types of wastes arising and the problems of disposal. There is a need for the provision of facilities for safe treatment and disposal of specialised and hazardous waste streams. Additional facilities will be needed as the relevant EU Directives are introduced and implemented as these may well reduce the number of current facilities able to manage these wastes. There may need to be a sharing of facilities with adjoining regions for certain waste types. The RTAB will need to give ongoing consideration to special and difficult waste issues and advise the Regional Planning Body accordingly.

Making progress - monitoring and review



The Steering Group will monitor progress and achievements towards more sustainable waste management practices in the following ways:

- Progress against statutory recycling/composting targets
- Compliance with Landfill Directive, in particular targets for diversion of Biodegradable Municipal Waste
- Progress against targets in the strategy for the 4 objectives
- Implementation of Regional Waste Action Plan
- Implementation of Regional Planning Guidance

Monitoring will take place annually and be publicly reported. The first review of the strategy will take place during 2005.

Regional Waste Strategy for

Appendix A

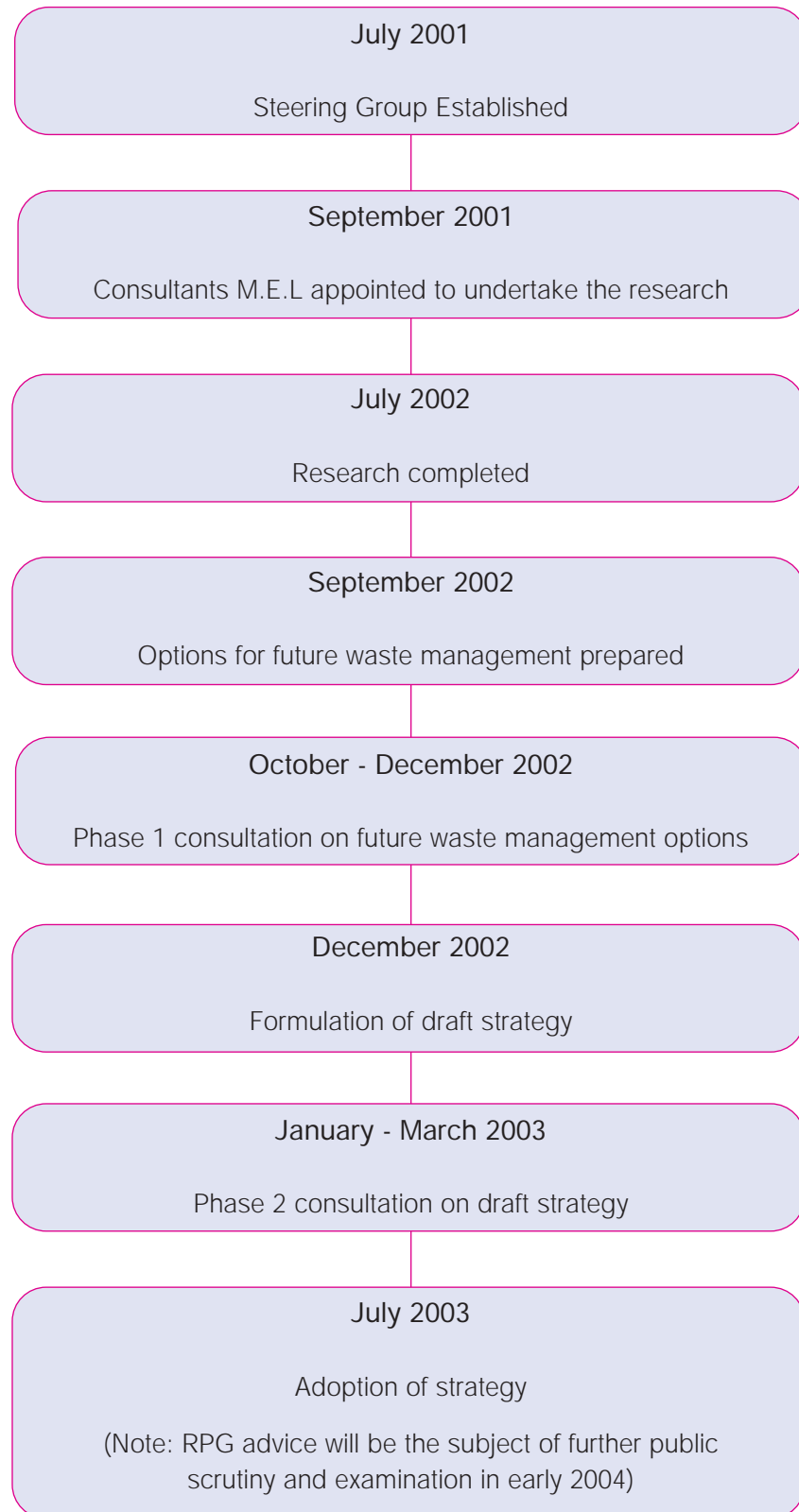
Steering group role and membership

Alan Davison	MFI
Bob Crosby	Rotherham Metropolitan Borough Council
Jill Redgrave	Environment Agency
David Harper	Environmental Services Association
	Yorkshire Forward
Tim Sander	Friends of the Earth
Elaine Kerrall	SWAP
Les Saunders	Government Office for Yorkshire and Humber
Dave McMahon	Kirklees Metropolitan Borough Council
Deborah Fox-Champkins	ENCAMS
Jonathan Eyre	Leeds City Council
Kevin Booth	North Lincolnshire Council
Kristy Walton	York City Council
Mike Doherty	Sheffield City Council
Pat Wainwright	East Riding of Yorkshire Council
Richard Barnish	Valpak
Colin Priestley	TH Banks
Chris Martin (Chair)	YHA
Rob Murfin	YHA
Sian Ferguson	YHA

Yorkshire and the Humber

Appendix B

Flow chart of strategy development process



Regional Waste Strategy for

Appendix C

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Yorkshire and the Humber

Appendix D

Glossary of waste management terms

Best Practicable Environmental Option (BPEO)

The BPEO procedure established the waste management method, or mix of methods, that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term

Biological Treatment

Any biological process that changes the properties of waste (e.g. anaerobic digestion, composting)

Bring Recycling

Recycling schemes where the public bring material for recycling to collection points, e.g. bottle and can banks at supermarket car parks and civic amenity sites

Civic Amenity Sites (CA sites)

Sites, provided by local authorities, to which the public can bring household waste. CA sites usually provide facilities for recycling, garden waste and bulky items such as beds and cookers

Clinical Waste

Healthcare waste such as blood, tissue, needles, used dressings, drugs, etc. It may be produced from healthcare facilities, like hospitals, or else from home treatment

Co-incineration

Burning waste for energy at plants that also use other sources of energy (e.g. coal or wood chip power stations)

Commercial Waste

Waste arising from premises used wholly or mainly for trade, sport, recreation or entertainment

Composting

The process that converts biodegradable material (such as garden and kitchen waste), in the presence of oxygen in the air, into a stable granular material

Construction and demolition waste

Waste produced from the construction, repair, maintenance and demolition of buildings and structures, including roads. It consists mostly of brick, hardcore and soil

Controlled Waste

This is household, industrial and commercial waste

EU Directive

A European Union legal instruction, binding on all Member States and which must be implemented through national legislation within a prescribed timescale

Energy from Waste (EfW)

The recovery of energy in the form of heat and/or power from burning waste

Fines

Small particles waste, such as dust

Regional Waste Strategy for

Gasification

This process involves turning waste into a fuel by heating it under controlled conditions with oxygen present

Hazardous Waste

Defined by EU legislation as the most harmful wastes to people and the environment

Household Waste

This includes refuse from household collection rounds, waste from street sweeping and public litter bins, bulky items collected from households, waste taken to CA sites and waste collected separately for recycling or composting or taken to recycling bring sites

Industrial Waste

Waste from any factory or industrial process (excluding mines and quarries)

Inert Waste

Chemically inert, non-combustible, non-biodegradable and non-polluting waste

Kerbside Recycling

Collection of recyclable or compostable wastes usually from the pavement outside premises, most commonly from households but also from businesses

Landfill sites

Licensed facilities where waste is permanently deposited from disposal

Landspreading

Recovering value from certain types of waste, such as sewage sludge and brewing waste, by spreading it onto land to improve soil quality

Materials Recycling Facility (MRF)

A facility for sorting and baling recyclable waste.

Mechanical Biological Treatment (MBT)

This is the treatment of residual waste using a combination of mechanical separation and biological treatment

Producer Responsibility

Requires industry and commerce involved in the manufacture, distribution and sale of particular goods to take greater responsibility for the disposal, recycling or recovery of those goods at the end of their useful life

Putrescibles

Organic waste susceptible to the decay or breakdown by bacterial action

Pyrolysis

This process involves heating waste in the absence of oxygen to produce energy rich gas, oils and solid char (ash)

Recycling

Reprocessing of wastes, either into the same material or a different material

Reduction

Reducing the quantity of waste produced

Yorkshire and the Humber

Residual Waste

Waste remaining after materials for re-use, recycling and composting have been removed

Re-use

Using materials or products again, for the same or a different purpose, without material reprocessing

Waste Collection Authority

A local authority (a district, borough or unitary) responsible for the collection of household waste in its area

Waste Disposal Authority

A local authority (a county or unitary) responsible for the management of the household waste collected in its area

Waste Management Licensing

The system of permits operated by the Environment Agency under the Environmental Protection Act to ensure that activities authorised to recover or dispose of waste are carried out in a way that protects the environment and human health

Waste Transfer Station

A waste management facility to which waste is taken for sorting or baling before being removed for recovery or disposal

Regional Waste Strategy for

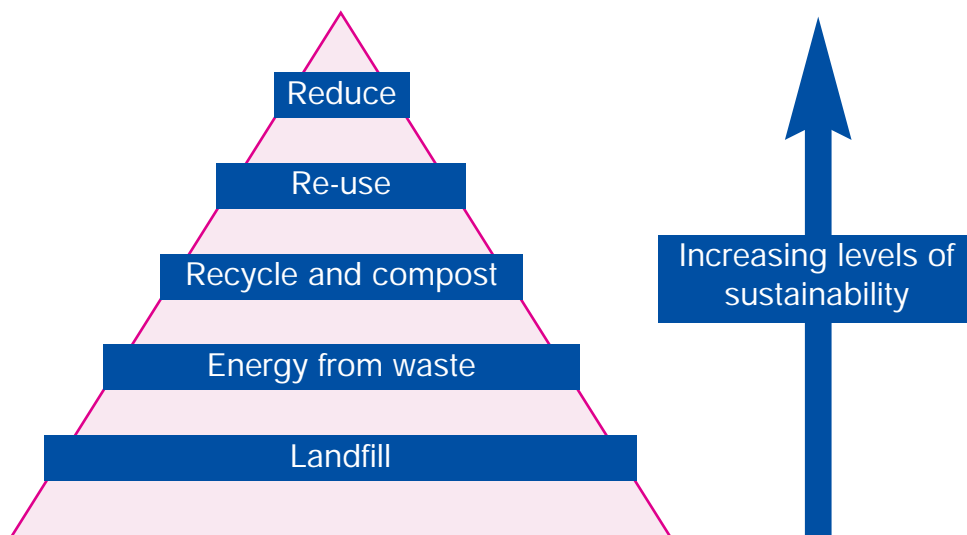
Appendix E

Waste legislation, policy and targets

EU Directives

The overall framework for sustainable waste management was set out originally in 1975 in the Waste Framework Directive, which put forward the waste hierarchy and emphasised the importance of waste prevention. The waste hierarchy is illustrated in the figure below. It is based on the premise that the higher levels of the hierarchy reflect more sustainable waste management practices. Waste management policies and practices should try to move up the hierarchy, taking reasonable account of costs and benefits.

The waste hierarchy



The Landfill Directive aims to prevent or reduce the negative effects of landfill. It has a series of targets:

- To reduce the volume of biodegradable municipal waste sent to landfill to 75% of that produced in 1995 by 2010, 50% of that produced in 1995 by 2013 and to 35% of that produced in 1995 by 2020. (These targets take account of the four-year derogation of targets offered by the EU to those countries heavily reliant on landfill);
- The co-disposal of hazardous and non-hazardous wastes is banned from 2004 and separate landfills for hazardous, non-hazardous and inert wastes are required;
- Landfill of whole tyres is banned from 2003 and of shredded tyres from 2006;
- Landfill of liquid wastes, certain clinical wastes and certain types of hazardous waste is banned.

Non-compliance with the Directive carries the potential sanction of a fine. It has been suggested that the UK could be fined up to £180 million a year, if it does not attain the above targets.

As the Landfill Directive bans the disposal of tyres in landfill sites, alternative methods of disposal will be required. It is likely that there will be an increased need for final disposal by incineration. The scale of this issue within Yorkshire and Humber is currently being investigated by the Environment Agency.

Yorkshire and the Humber

The Landfill Directive also requires sites to be classified and licensed to accept either hazardous, non-hazardous or inert waste. It is likely that the number of sites in the UK that will be licensed to take hazardous waste will decrease from over 200 to around 30. At this stage it does not appear that any of the existing landfill sites in the Yorkshire and Humber region will apply to be licensed for hazardous waste. This is a cause for concern and work is taking place with the Environment agency to determine what treatment capacity will be needed in the region.

The **Waste Electrical and Electronic Equipment (WEEE) Directive** extends the principle of producer responsibility and requires manufacturers to reach targets for the re-use, recycling and recovery of waste electronic and electrical equipment. Every Member state has a target of collecting 6 kg of waste per inhabitant per year from private households.

The **Packaging and Packaging Waste Directive** set an overall recovery target of 50-65% and a recycling target of 25-45% for packaging waste with a minimum target of 15% for recycling and recovery for each sort of packaging material. The UK implemented this Directive through the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 and set targets of 50% for recovery, 25% for recycling with a minimum target of 16% for recycling and recovery of each material. The UK chose the unique principle of 'shared producer responsibility', with different sectors in the packaging chain having different obligations.

Slow progress forced the government to set a higher recovery target of 56% for 2001 and a higher individual materials target of 18%. Recent announcements indicated that the UK had failed to meet its target of 50% recovery target in 2001, achieving only 48% and discussions are place on revising the targets again.

The **End-of-Life Vehicle (ELV) Directive** has set recovery (and recycling) targets of 85% (80%) for 2006 and 95% (85%) for 2015 for end of life motor vehicles. A key element in this Directive is the need for 'de-pollution' to take place. Current disposal routes via scrap yards and shredders may no longer be appropriate, and new procedures involving de-pollution, dis-assembly, re-manufacturing of components, recycling and recovery may emerge. With effect from January 2007 Original Equipment Manufacturers will have full responsibility for the whole life cycle of motor vehicles. Regulations implementing the Directive will be published during 2003.

The **Directive on the Incineration of Waste** replaces earlier Directives on the prevention and reduction of air pollution from municipal waste incineration plants and the incineration of hazardous waste. Emission limits are very similar to those applied to hazardous waste incinerators in the UK, although Nitrous Oxide limits are new. The Directive must be implemented by December 2002, with existing plants covered after December 2005 and new plants with effect from December 2002. For commercial and industrial companies this will have an impact on potential waste disposal options and their costs.

Further work on the **EU Biowaste Directive** is expected during 2003 ahead of its anticipated adoption in 2004. The Directive is likely to require source separation collections of biodegradable waste from settlements of more than 100,000 population by 2007 and 2000 population by 2009. The implications of this are that 99% of the UK will have to separate collections of compostable waste by 2009.

Various reports have also been published concerning '**integrated product policy**' and a White Paper is due to be published that will set down general guidelines and principles for a wide range of industries. This will include policies for resource efficiency and environmental impacts across the total life cycle of products and services, and involve a much more holistic view of product stewardship and contribute towards efforts to reduce the production of waste.

Regional Waste Strategy for

UK waste policy and targets

The history of UK national policy on waste:

1990	The Environment White Paper	Set a target of 25% recycling by 2000
1995	"Making Waste Work"	This strategy re-emphasised the need to meet the 25% target by 2000
1999	"A Way with Waste"	Recognised that the 25% target would not be achieved by 2000
2000	"Waste Strategy 2000"	Set targets for recovery and for recycling or composting that were transposed into statutory targets for local authorities

Successive governments in the UK have acknowledged the need to develop more sustainable forms of waste management as this history of UK policy indicates. However, until Waste Strategy 2000 the targets were aspirational only and the record of delivery shows that, to date, none of the targets has been achieved. Given current national recycling rates of around 12%, it appears that it will be very difficult to achieve the Waste Strategy 2000 first statutory target of 25% recycling/composting by 2005/6.

Waste Strategy 2000 is the current UK Strategy for managing waste. It has set targets for a reduction in the quantity of waste disposed of in landfill sites. There are two sets of targets, but both sets relate specifically to municipal waste. The first set of targets in the strategy are to reduce the amount of biodegradable municipal waste (BMW) going to landfill as required by the EU Landfill Directive and the second are for recovering value from municipal solid waste (MSW) with specific requirements for recycling and composting.

Targets to reduce BMW landfilled:

- By 2010 to reduce the amount of BMW landfilled to 75% of that produced in 1995
- By 2013 to reduce the amount of BMW landfilled to 50% of that produced in 1995
- By 2020 to reduce the amount of BMW landfilled to 35% of that produced in 1995

Data in Waste Strategy 2000 indicates that over half municipal waste consists of biodegradable materials and for the purposes of this strategy it is assumed that 62% of MSW is biodegradable. The targets are based on waste arisings in 1995. As complete information from published sources was not available tonnages have been calculated by working on 1999/2000 tonnages working back with a 3% growth (national average growth rate).

The targets for reducing BMW sent to landfill are to be achieved through the introduction of a tradable landfill allowance scheme for local authorities. Local authorities that are waste disposal authorities will each be allocated a number of landfill allowances. They will only be able to send to landfill BMW up to the levels of the allowances that they hold. Local authorities that divert more waste from landfill will be able to trade their unused allowances to a local authority that requires more. Each year the number of allowances will be reduced to restrict the total amount of BMW sent to landfill. The legislation to permit this scheme to operate will be published during 2003.

Yorkshire and the Humber

The second set of targets are:

- By 2005 to recover value from 40% of MSW (at least 25% by recycling and composting)
- By 2010 to recover value from 45% of MSW (at least 30% by recycling and composting)
- By 2015 to recover value from 67% of MSW (at least 33% by recycling and composting)

These targets have been transposed by Government into statutory targets for local authorities for 2003/4, 2004/5 and 2005/6. The targets for the local authorities in the sub-region are set out in the following table.

Recycling target rates for Yorkshire and Humber local authorities given as percentages of the total quantity of municipal waste collected

Authority	1998/9 Recycling Rate	2003/4 targets	2005/6 targets
NORTH YORKSHIRE SUB-REGION			
North Yorkshire County	7	14	21
Craven	9	18	27
Hambleton	8	16	24
Harrogate	7	14	21
Richmondshire	4	10	18
Ryedale	11	22	33
Scarborough	6	12	18
Selby	3	10	18
York	6	12	18
HUMBER SUB-REGION			
Kingston Upon Hull	7	14	21
North Lincolnshire	8	16	24
North East Lincolnshire	7	14	21
East Riding of Yorkshire	9	18	27
WEST YORKSHIRE SUB-REGION			
Leeds	7	14	21
Calderdale	3	10	18
Bradford	8	16	24
Kirklees	7	14	21
Wakefield	3	10	18
SOUTH YORKSHIRE SUB-REGION			
Barnsley	2	10	18
Doncaster	4	10	18
Rotherham	5	10	18
Sheffield	5	10	18

Regional Waste Strategy for

As a region, this means our overall targets are:

Sub-region	2003/4 targets	2005/6 targets
North Yorkshire	13	21
Humber	16	24
West Yorkshire	13	21
South Yorkshire	10	18
Yorkshire and Humber	13	21

The current targets already present a tough challenge to local authorities in the region; increasing these further will, of course, increase the scale of this challenge. It is important that local authorities take account of the likelihood that their targets will be raised and ensure that the recycling systems put in place are sufficiently flexible to be adapted to new standards. This strategy seeks to support the work of local authorities in Yorkshire and Humber so that as a region the recycling and composting targets are achieved.

Waste Strategy 2000 also includes a voluntary target to reduce commercial and industrial waste to 85% of 1998 by 2005.

In response to growing concerns across all English regions that the targets in Waste Strategy 2000 will not be attained, the Government Strategy Unit prepared a report, "Waste Not, Want Not, A strategy for tackling the waste problem". It proposed reviews to Waste Strategy 2000 and new national targets. For the first time, the proposals included a national target for waste reduction

In addition to these recommendations the report suggested a significant increase in the level of landfill tax. The Strategy Unit report suggested that if the tax is to be effective it must be raised to a level that makes landfill more comparable in cost terms to other waste treatment options but does not impose an unacceptable burden on local authorities responsible for waste disposal. The report recommends an increase in the medium term to £35 per tonne.

The Government has responded to the Strategy Unit report in a document published in May 2003. The report sets out how the Government will address the recommendations in Waste Not, Want Not. The main commitments made are:

- Tax will increased by £3 per tonne in 2005/6 and by at least £3 per tonne in the years thereafter on the way to a medium term rate of £35 per tonne
- The Landfill Tax Credit Scheme has been reformed and a proportion of the funding - £84m in 2003/4, £92m in 2004/5 and £92m in 2005/6 - will be used to fund a new Sustainable Waste Management Programme
- The Sustainable Waste Management Programme will be managed by Department of the Environment, Food and Rural Affairs. Its purpose will be to improve waste reduction, recycling and technology and research new technologies for types of waste that are currently not readily reduced, re-used or recycled. In addition, a Local Authority Delivery Task Force will assist local authorities to meet their recycling and composting targets

Yorkshire and the Humber

- Local authority funding of £90m each year for 2004/5 and 2005/6 will be provided through the Waste Minimisation and Recycling Fund.

Waste Strategy 2000 identifies future, aspirational targets for recycling and composting. These were set out in the strategy to give an indication of the likely medium - long term statutory targets. The Strategy Unit report recommends that the targets for recycling/composting should be increased to **45% by 2020**. The Government response to Waste Not, Want Not states that national recycling targets will be reviewed in the light of progress made by local authorities to meet the 2003/4 targets.

The Government has also made commitments to take forward work that deals with non-municipal waste. This includes:

- Draft regulations will be published during 2003 that will bring agricultural waste under waste management control
- New hazardous waste regulations will be published which will encourage reduction and appropriate management of hazardous waste and increase the number of waste items classified as hazardous

Appendix F

Residual waste management methods

Landfill

Landfill is the depositing of waste on land, often in existing holes resulting from previous mineral extraction. Typically, a landfill site in the UK that is used to dispose of non-inert waste (such as municipal or hazardous waste) will be highly engineered. The base of the site will be impermeable, either clay or lined with plastic, rubber or a composite material. Waste will be deposited in pre-constructed cells. When each cell is full it is covered with an inert material. A drainage system is built into the site to collect water run-off and leachate. The methane gas that is produced by the waste as it decomposes is collected and either flared or used to generate electricity.

The Landfill Directive regulates the operation of landfill sites and has introduced a range of measures to reduce the risks of landfills to human health and the environment. It bans the disposal of all liquids, infectious clinical wastes and tyres. It requires a reduction in the amount of biodegradable waste that is deposited in landfill and prohibits the co-disposal of hazardous and municipal wastes.

Energy from waste

Energy from waste is the term used to describe processes that use the energy held in waste to generate power and/or heat. The technologies available are:

- Incineration (mass burn, rotary kiln, fluidised bed)
- Gasification
- Pyrolysis

Incineration

Incineration is the combustion of waste at high temperatures. It converts waste to energy and reduces the volume of waste going to disposal in landfill. Incineration produces combustion products, which are released into the atmosphere as gases and ash, which is disposed of to landfill or used in construction. Modern incinerators are designed to produce nearly complete combustion and to release negligible amounts of air pollution.

The process of incineration in modern incinerators does not destroy pollutants; they are deposited in the solid residues, the ash, that is produced. There are two types of ash. Bottom ash is inert and can be used as a low grade aggregate in construction. Fly ash contains the pollutants removed from the combustion gases can contain very toxic substances, such as heavy metals. There is a direct link between air emissions and the toxicity of fly ash - as more effective measures are introduced to remove pollutants from the gas emitted from incinerators the concentration of toxins in the fly ash increases.

Fly ash is a hazardous waste that requires disposal in landfill. Treatments that can reduce the toxicity of the ash are being investigated.

There are several types of processes for incinerating waste but the most commonly used technology in the UK is mass burn grate incineration and rotary and cement kilns.

Yorkshire and the Humber

Mass burn grate incinerators require waste to be fed into a combustion chamber on to a grate that agitates and transports the waste across the chamber to promote more efficient combustion. Electricity is generated from steam turbines. In the UK most incinerators used to treat municipal waste use this technology.

Rotary kiln incinerators can deal with most types of waste but are usually used for hazardous and industrial waste. Waste is fed into a rotating chamber and ignited by a burner. Cement kilns are very similar to rotary kilns but operate at higher temperatures. These types of incinerator are used to treat hazardous and industrial waste as well as municipal waste.

Gasification and pyrolysis

During gasification, waste is heated in the presence of air or steam to produce fuel-rich gases, called syngas. In pyrolysis, waste is heated in the absence of air to produce syngas, pyrolysis oil and char. Gasification and pyrolysis require carbon-based substances such as paper, plastics and organic waste to be in the waste.

Most gasification and pyrolysis processes have four stages:

- Pre-treating waste - separating out recyclables such as glass and metal and sterilisation
- Heating the remaining waste to produce syngas, oils and char
- Cleaning the gas to remove particulates, hydrocarbons and soluble matter
- Using scrubbed gas to generate electricity

The application of pyrolysis as a waste management technique is a fairly recent development and there are very few commercial pyrolysis plants operating within the UK. Pyrolysis is not favoured for syngas production since the complex by-products formed are difficult to handle and gasification produces syngas more efficiently. Nevertheless, there is increasing interest in pyrolysis, particularly as a management option for waste tyres.

Mechanical biological treatment

Mechanical biological treatment is a combination of processes that further treat residual waste before disposal in landfill. The aim of MBT is to minimise the environmental impacts of end disposal and recover more value from waste by revering materials and in some cases through energy.

There are several ways of carrying out mechanical biological treatment. The main technologies are based on 'splitting' or 'stabilisation'. Splitting involves separating out the organic part of the waste and treating this biologically, for example, by aerobic digestion. In stabilisation the entire waste is subjected to biological treatment. Then material is separated out for recycling, for use as fuel and for landfilling.