

YOUR VIEWS

Welcome to the Consultation Draft LEAP for the Aire, which is the Agency's initial analysis of the state of the environment and the issues that we believe need to be addressed.

We would like to hear your views:

- Have we identified all the major issues?
- Have we identified realistic proposals for action?
- Do you have any comments to make regarding the Plan in general?
- Do you want to comment on the work of the Agency in general?

During the consultation period for this Draft LEAP the Agency would be pleased to receive any comments in writing to:

Aire LEAP Officer
Environment Agency
Phoenix House
Global Avenue
LEEDS LS11 8PG

All comments must be received by 30th September 1998

Note: Whilst every effort has been made to ensure the accuracy of information in this Report it may contain some errors or omissions which we will be pleased to note

Further copies of the document can be obtained from the above address.

All comments received on the Consultation Draft will be considered in preparing the final LEAP which will build upon Section 3 of this consultation document by turning proposals into specific actions.

All written responses will be considered to be in the public domain unless consultees explicitly request otherwise.

ENVIRONMENT AGENCY



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AIRE CONSULTATION DRAFT LEAP

FOREWORD

I am pleased to introduce the Consultation Report for the Aire Local Environment Agency Plan (LEAP). When completed this plan and its companion for the Calder catchment will identify the challenges, opportunities and priorities for the Agency's services across West Yorkshire.

The LEAP is the Agency's approach to the forward planning of its activities at a local level. We aim to have complete coverage of England and Wales by LEAPs within the next few years.

The LEAP is structured around the Agency's nine environmental themes, which aim to protect and enhance the environment in an integrated way and contribute towards the goal of sustainable development.

This document is our vehicle for wide ranging consultation with all who are interested in, or affected by, the Agency's future delivery of its services in the Aire catchment. Pre-consultation has been undertaken with local authorities and our West Yorkshire Area Environment Group. We also are very keen to have detailed feedback from industry, agriculture, anglers, recreation and sporting interests, conservation and environmental bodies, community groups and individuals.

All the feedback will be distilled to produce a final Plan, which is due to be published by April 1999. It will cover a 5 year period in detail while also looking further ahead. It will set out our actions and those which we will advocate to our partner organisations. It is certain that there will not be funds or legal powers to achieve all the proposals we receive and no doubt there will be conflicting views, which we will work to reconcile. It is important that we have a complete picture of environmental aspirations so that we can work towards their achievement over the longer term.

I would like to thank you in advance for studying this report and giving us your views. We would be pleased to come and visit you if this would be of help.

Tony Edwards
RIDINGS AREA MANAGER

CONTENTS

1	THE ENVIRONMENT AGENCY	.... 3
1.1	Aims and objectives	.... 3
1.2	The role of the environment Agency	.... 3
1.3	Routine work of the Agency	.... 4
1.4	Environmental services provided by others	.... 5
1.5	The LEAPs process	.... 5
2	THE LEAP AREA	.... 7
3	ISSUES AND PROPOSED ACTIONS	.... 9
3.1	Addressing the causes and effects of climate change	.... 9
3.2	Improving air quality	... 11
3.3	Managing water resources	... 13
3.4	Enhancing biodiversity	... 15
3.5	Managing freshwater fisheries	... 18
3.6	Delivering integrated river-basin management	... 19
3.7	Conserving the land	... 27
3.8	Managing waste	... 30
3.9	Regulating major industries effectively	... 33
3.10	Prioritising LEAP actions	... 37
4	A BETTER ENVIRONMENT THROUGH PARTNERSHIP	... 38
APPENDIX 1	The routine work of the Agency	... 39
APPENDIX 2	Membership of the West Yorkshire Area Environment Group	... 40
APPENDIX 3	Proposed criteria for prioritising LEAP actions	... 41
APPENDIX 4	Abbreviations	... 43
DIAGRAMS		
Figure 1	Map of the Aire LEAP area	.... 2
Figure 2	The LEAP process	.... 6
Figure 3	The waste hierarchy	... 31
PHOTOGRAPHS		
(all photographs, except Eggborough power station, are reproduced with kind permission of Simon Warner)		
A	Bingley relief road - Rye Loaf Protest Camp	.... 4
B	Two bridges at Ferrybridge	.... 7
C	Eggborough power station	... 12
D	Confluence of the River Aire and the River Ouse at Airmyn	... 17
E	Lemonroyd Basin on the Aire and Calder Navigation	... 26
F	Esholt sewage treatment works	... 35

1 THE ENVIRONMENT AGENCY

1.1 Aims and objectives

Our vision is

A better environment in England and Wales for present and future generations.

Our aims

- To achieve major and continuous improvements in the quality of air, land and water.
- To encourage the conservation of natural resources, animals and plants.
- To make the most of pollution control and river-basin management.
- To provide effective defence and warning systems to protect people and property against flooding from rivers and the sea.
- To reduce the amount of waste by encouraging people to re-use and recycle their waste.
- To improve standards of waste disposal.
- To manage water resources to achieve the proper balance between the country's needs and the environment.
- To work with other organisations to reclaim contaminated land.
- To improve and develop salmon and freshwater fisheries.
- To conserve and improve river navigation.
- To tell people about environmental issues by educating and informing.
- To set priorities and work out solutions that society can afford.

We will do this by:

- being open and consulting others about our work;
- basing our decisions around sound science and research;
- valuing and developing our employees; and
- being efficient and businesslike in all we do.

1.2 The role of the Environment Agency

The Environment Agency (the Agency) has a wide range of duties and powers for managing the environment and improving the quality of air, land and water. This responsibility includes encouraging the conservation of natural resources, animals and plants.

The Agency is required by statute to help achieve sustainable development, which is

"... development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Concern about specific environmental issues has increased, particularly air pollution. Other concerns include industrial pollution of water and land, waste management and reduction, and conserving our water supplies. The Agency is determined to influence the debate on these key issues.



Photograph A - Bingley relief road - Rye Loaf Protest Camp

It is now generally accepted that environmental changes are occurring on a global scale and that we need to work at a wider international level. Issues such as climate change will affect the United Kingdom (UK) in a complex way. The Government has therefore signed the Framework Convention on Climate Change, which was agreed at the 1992 Earth Summit in Rio, and is taking an active role in international negotiations to reduce greenhouse gas emissions.

Another outcome of the Earth Summit was agreement by governments that local action is crucial to solve global environmental problems. *We must think globally but act locally.* The Local Agenda 21 initiative has encouraged local government and communities to identify and begin to tackle a wide range of local environmental issues.

The Agency is also committed to a programme of local action through our Local Environment Agency Plans (LEAPs). As we only have duties and powers to protect some environmental resources, we need to work with others locally to achieve the common goal of sustainability. Our LEAPs will, therefore, reflect our close contact with industry, the public, local government and many others in planning actions to address environmental issues.

1.3 Routine work of the Agency

The Agency has eight Regions which are shown on the back cover of this document. The North East Region is made up of three Areas, and the Aire LEAP is within the Ridings Area.

As "Guardians of the Environment" the Agency's principal aim is to protect and enhance the environment, thus contributing to the Government's overall commitment to sustainable development. We will do this by integrating environmental protection for land, air and water using pollution prevention and control, education and enforcement where necessary. We have related responsibilities for the management of water, fish and wildlife and for protecting people and property from flooding.

Most of our work operates at a local level and there is a strong commitment to an integrated approach to managing the environment. LEAPs are one way of achieving this integrated approach, although they do not cover routine work carried out to meet statutory requirements or national Agency policy. This work is described in our *Corporate Plan* (published annually in September) and Environmental Strategy ("*An Environmental Strategy for the*

Millennium and Beyond", published in September 1997). A summary of our routine work is provided in Appendix 1.

The Agency recognises that education at all levels, in the community and with industry, will result in a more informed society that is better able to understand the environment. Currently, we provide a wide range of information to all sectors of society and give many talks and presentations. The Agency recently published a leaflet "Green Shoots our vision for Environmental Education".

All actions of the Agency must take into account a number of umbrella duties which include furthering conservation, impact assessment for the Agency's engineering works, the requirement to assess costs and benefits, the contribution to sustainable development and the impact on rural communities.

1.4 Environmental services provided by others

The Agency's tasks are laid down in Acts of Parliament and do not cover all aspects of environmental service to the general public. We are not responsible for:-

- noise problems (except if it is to do with our work)
- litter (unless it is restricting the flow of a river)
- air pollution arising from vehicles, household areas, small businesses and small industry
- collecting waste in your local area
- planning permission
- environmental health
- food hygiene

Your local authority deals with these issues and will contact the Agency if necessary.

We are not responsible for the quality or supply of drinking water at the tap or for treating sewage waste, although we regulate discharges from sewers and sewage treatment works.

1.5 The LEAPs process

LEAPs are integrated local management plans for

".... identifying, prioritising and solving local environmental issues, related to the Agency's functions, taking into account the views of the Agency's local customers."

They replace the Catchment Management Plans which were produced by the former National Rivers Authority and build on their success by covering all the Agency's functions.

LEAPs are developed by :-

- involving interested parties in planning for the future of a specific area;
- focusing attention on the issues affecting the environment of that area; and
- establishing a prioritised plan of action, for the Agency to fulfill alone or in partnership with others, to address these issues.

The process involves several stages which are illustrated by the following diagram:-

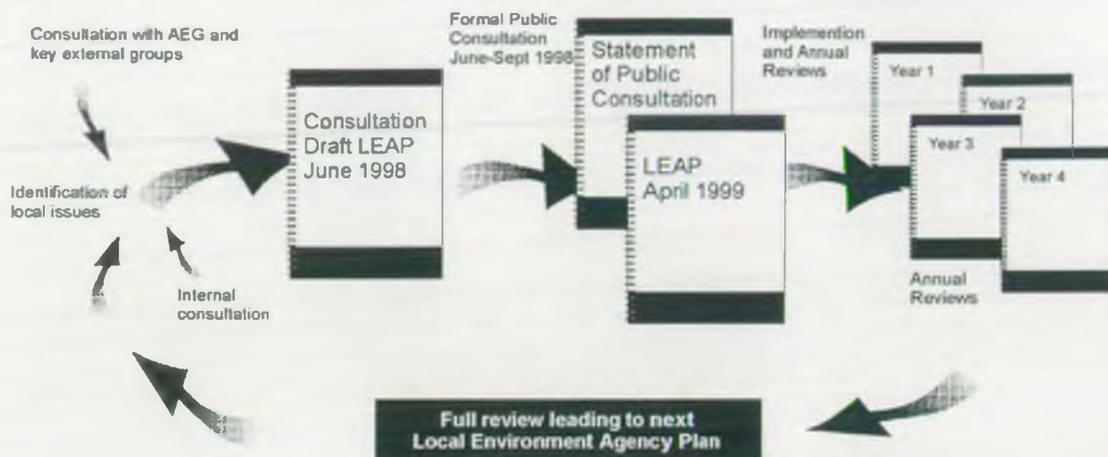


Figure 2 - The LEAP process

This *Consultation Draft LEAP* has been produced by a team of Agency staff who work in the Aire catchment area. To ensure a wide and balanced approach, the West Yorkshire Area Environment Group (AEG) have actively participated and their views are also incorporated into this Plan. The AEG is our local advisory group which has members drawn from a wide range of community interests. A list of members is provided in Appendix 2.

We have also informally consulted representatives from Bradford Metropolitan Borough Council, Leeds City Council and Wakefield Metropolitan Borough Council.

Publication of this Consultation Draft LEAP marks the start of a three month period of formal consultation. It gives external organisations and the general public an opportunity to work with the Agency in planning the future of the environment of the Aire catchment area. The Aire Consultation Draft LEAP is being piloted by the Agency on the Internet to extend the audience offered an opportunity to become involved in the process. Our Internet address is <http://www.environment-agency.gov.uk>.

The LEAP is supported by an *Environmental Overview* which contains information about the Aire LEAP area and briefly describes some aspects of the state of the local environment. Copies of the Environmental Overview are available on request.

At the end of the consultation period we will produce a *Statement on Public Consultation* which will give the results of the process.

The final LEAP will take into account the results of consultation and will be produced by April 1999. It will contain a prioritised list of actions that take account of costs and benefits, identifying timescales and partner organisations. Agreed actions will be incorporated into the Agency's annual business plans.

Together with the Area Environment Group, we will monitor implementation of the LEAP and report on progress in a published *Annual Review*. The Annual Review will also identify any additional actions needed to maintain progress in light of any changes in the LEAP area and also whether any actions need removing or amending where they are no longer appropriate.

The Aire LEAP covers an area of 1,100 km² and includes scenic upland areas of the Yorkshire Dales National Park that attract visitors in their thousands each year, as well as densely populated and industrialised areas with a long history of pollution. It encompasses a population of 1.1 million people who are concentrated in the principal towns and cities of Bingley, Bradford, Castleford, Keighley, Leeds and Skipton.

It is this urbanisation that impacts most on the state of the local environment. Like many other industrial areas of the country, the Aire catchment has suffered greatly over the past two centuries from its industrial heritage. However, much has been done in recent years to improve the local environment. Industry is developing cleaner technologies to minimise its environmental impact. The Aire and Calder Waste Minimisation Project, which ran from 1992 to 1995, demonstrated that this approach also offered financial benefits for the companies involved (*see issues 11, 40, 43 and 47*).

The industrial heritage of the catchment also left a legacy of derelict and contaminated land (*see issues 35 and 36*). As well as enabling contamination to be removed or stabilised, redevelopment of this land provides an opportunity to improve its conservation and recreation potential. The Agency will work in partnership with local authorities and land owners to establish a prioritised programme for the remediation of the most seriously polluted sites.

Urban and industrial areas are usually built from and stand on impermeable surfaces which increase the speed of water run-off into rivers. This can increase the likelihood of flooding and can also result in pollution as the run-off is sometimes contaminated (*see issues 25, 34*).

There are other water quality-related issues within the catchment that still need to be addressed (*see issues 24, 26, 27, 32, 33, 44, 46 and 48*). At times of low flow more than two thirds of the River Aire below Leeds is treated sewage effluent. Yorkshire Water has improved some sewage treatment works in the catchment and is planning improvements to others. Between 1990 and 1995, 74.11 km of river in the catchment were upgraded from the poorest classes (Class E and F). The Company's Asset Management Plan currently under negotiation (AMP3) will be vital for securing further improvements in water quality for the years 2000 to 2005 (*see issues 29 and 45*).



Photograph B - Two bridges at Ferrybridge

Recent improvements in water quality are increasing the demand for recreation (*see issues 18 and 30*). Significant numbers of coarse fish are now being caught by anglers in the Leeds area. However, local recreation groups are concerned that bacteriological quality of these improving waters is not currently monitored by the Agency (*see issue 31*).

Recreation is not restricted to the river. The Leeds and Liverpool Canal is used by narrow boats, cruisers, canoeists anglers and walkers. In the Kirkstall valley, part of this canal is also designated as a Site of Special Scientific Interest (SSSI) because of the plants and wildlife found within it. The Leeds and Liverpool Canal ends in Leeds and the Aire and Calder Navigation takes over. This is comprised partly of canalised river reaches and partly canal cuts. From Hunslet to Goole it is used by commercial vessels. The Selby Canal links the lower reaches of the navigable Aire with the River Ouse at West Haddlesey.

Improving water quality also offers opportunities for water resources whether for public supply or industrial use. Currently most of the water for public supply is obtained from rivers and reservoirs in the North Yorkshire catchments, a practice dating back to the 1820s. A more sustainable approach could be to abstract water directly from the Aire catchment to supply its urban areas (*see issue 10*).

The management of waste is an important environmental concern for the LEAP area. Waste is produced by a wide range of human activities, including industry, agriculture and households. It is estimated that the average household alone produces approximately one tonne of refuse each year. This adds up to a vast amount of waste which has to be re-used or disposed of from the LEAP area. Although the rate of recycling is increasing, most waste still goes for disposal - usually to landfill or by incineration.

Landfill sites can be unattractive, resulting in noise, smells and wind-blown litter (*see issue 28*). As waste breaks down in a landfill site it produces a polluting liquid, called leachate, and landfill gas (*see issue 1*). Incineration can also affect the environment, usually through emissions into the air.

Transport and industry are the main sources of air pollution in the LEAP area. Ferrybridge, Eggborough and Drax power stations impact upon air quality in the Aire catchment (*see issue 4*). Local authorities are responsible for implementing the National Air Quality Strategy to reduce pollutants and the Agency will work closely with them by providing advice and information on the impact of processes that we regulate (*see issue 5*).

Environmental problems in urban areas attract attention because most of the population is concentrated here, which leads to greater pressure to improve these parts of the catchment. However, we cannot ignore the environment of the more rural areas which needs protecting from potentially adverse activities and, wherever possible, improving. Illegal tipping of waste is an increasing problem which affects the rural environment as well as that of inner city estates (*see issue 42*). This increase could, in part, be as a result of the Landfill Tax which was introduced in October 1996 (*see issue 41*), although its aim is to reduce the amount of waste produced at source.

Other issues affecting rural areas include inadequate local village sewerage systems (*see issue 23*), farm pollution (*see issue 22*) and soil erosion (*see issue 37*). The Sherwood Sandstone in the area from Selby to Doncaster is a major aquifer used extensively for water supply. This area is vulnerable to nitrate pollution from agricultural land use (*see issue 7*).

The conservation value of rural parts of the area is high. Much of the catchment above Malham is a Site of Special Scientific Interest (SSSI) because of its geological features, limestone pavement, plants and animals. However, there are parts of the more industrialised and urban districts that are also valued for conservation. Between Bingley and Leeds, the river corridor provides a “green lung” for the urban population living nearby. Our industrial heritage has helped to create valuable sites such as the nature reserve at Fairburn Ings where mining subsidence has resulted in permanent flooding of the site (*see issue 12*). This area is also very important as it provides storage for flood water as part of the defence of Castleford. There are also many sites in the LEAP area that have been designated for their heritage value. Not only do these provide benefits to those interested in their past, but they can also provide valuable refuges for wildlife including barn owls and rare species of bat.

From Skipton to Bingley and also in the lower tidal part, the River Aire and some of its tributaries have been significantly modified for flood defence purposes or navigation which has restricted their conservation value (*see issues 13 and 21*).

The environmental issues affecting the Aire catchment are complex and diverse. This LEAP will result in the identification and prioritisation of actions to start addressing some of these local issues.

3 ISSUES AND PROPOSED ACTIONS

LEAPs translate the Agency’s long term Environmental Strategy into action on the ground. The Environmental Strategy sets out nine environmental themes:-

- addressing the causes and effects of climate change
- improving air quality
- managing water resources
- enhancing biodiversity
- managing freshwater fisheries
- delivering integrated river-basin management
- conserving the land
- managing waste
- regulating major industries effectively.

Issues proposed in the LEAP are structured around these priority themes. The issues and proposals for action are the initial views of Agency staff, Area Environment Group members and those local authorities involved in pre-consultation. They are not presented in any order of priority. A prioritised plan of action, including costs and responsibilities, will be established only after the main consultation phase is completed.

3.1 Addressing the causes and effects of climate change

Perhaps the most important issue affecting our environment is climate change. Burning fossil fuels in cars, power stations and in industrial processes emits gases into the atmosphere, “greenhouse gases” such as carbon dioxide, which are believed to contribute to long-term climate change.

The UK will be affected in a complex way by these changes. Current predictions suggest winters are likely to become wetter and summers drier, reducing overall rainfall totals in the south and east and increasing rainfall in the north. This will lead to more variable rainfall patterns and probably increased storminess. Sea level rise may affect the lower tidal reach of the Aire.

Locally, the Agency's main influence on climate change will be to help ensure that the Government's greenhouse gas reduction targets are met by regulating emissions from major industrial processes. We will also set an example by reducing our own energy and fossil fuel consumption. We have targets to achieve the following by March 1999:-

- reduce energy use in our offices and depots by 20%.
- compile "Green Transport Plans" to reduce commuter transport impacts at all key sites.
- reduce mileage on Agency business by 5%.
- improve overall fuel efficiency for badged vehicle fleet by 3 miles per gallon.

A number of other local issues have also been identified.

1. Minimising the effect of landfill gas on climate change

Methane and carbon dioxide are the main gases produced at landfill sites as the waste decays. The impact of methane on climate change is 25 times greater than that of carbon dioxide. The impact can be reduced by burning methane, although this does result in the production of further carbon dioxide. This burning of methane, known as flaring, can be used to generate power.

As well as reducing the environmental impact of emissions, using landfill gas to generate power will also reduce the amount of fossil fuels that are consumed - further enhancing the environmental benefits.

Currently there are approximately 110 licensed landfill sites within the Leeds and Bradford districts producing landfill gas. Two sites within the catchment are already making use of landfill gas and the feasibility is currently being assessed at three others.

<i>ref</i>	<i>proposed action</i>
3.1.1	When an application for a waste management licence is made, encourage landfill site operators to consider using landfill gas. Seek policy changes to make gas utilisation a requirement of the licence.

2. Developing renewable energy sources

There are opportunities to develop renewable sources of energy in the Aire LEAP area. The environmental impact of these renewable energy sources can be much less than that of fossil fuels. Producing energy from fossil fuels, such as coal and gas, can impact on the environment through the emission of greenhouse gases and other pollutants into the air. In addition, as we use up fossil fuels they are not being replaced.

Historically many weirs in the catchment that were used to harness power from water for industrial use. There is an opportunity, where it is economically viable and environmentally acceptable, to restore the energy generating potential of these and other weirs (links to issue 16).

The five local authorities in West Yorkshire are also investigating opportunities for managed tree planting. As well as the environmental benefits offered by trees (including the ability to absorb some air pollutants), woods and forests can be managed in a sustainable way to provide a source of fuel and building materials.

<i>ref</i>	<i>proposed action</i>
3.1.2	In partnership with local authorities, support the development of hydro-electric power schemes as a renewable source of energy.
3.1.3	Contribute to the project investigating the potential for reforesting parts of West Yorkshire in collaboration with the local authorities, Oceans Environmental Engineering Ltd and North British Housing Association.

3. Promoting energy conservation

The production of energy, by whatever means, will have implications for the local environment. Conserving energy by reducing the amount that is actually consumed should minimise any environmental impact, as well as providing economic benefits.

Energy conservation in industry is encouraged by the Agency through our waste minimisation initiatives which promote more efficient use of raw materials, energy and water (links to issue 40). A number of organisations are currently encouraging domestic energy conservation and the Agency could investigate opportunities to collaborate with them on specific campaigns.

<i>ref</i>	<i>proposed action</i>
3.1.4	Identify opportunities to collaborate on campaigns designed to encourage domestic energy conservation.

3.2 Improving air quality

The major sources of air pollutants are transport and industry. Air pollution from transport is the responsibility of local authorities and not the Agency. We are reducing emissions from our own vehicles by reducing mileage and encouraging the use of public transport (see section 3.1). We are also encouraging the public to consider the impact their travel has on the environment.

Air pollution is believed to play a part in some breathing-related problems, like asthma. The Agency is working with government to ensure that the National Air Quality Strategy improves air quality and that emissions from major industries and vehicles are reduced.

4. Minimising the impact of power stations on local air quality

Local air quality is affected by the Aire valley power stations Ferrybridge and Eggborough and also by Drax power station which is located just outside of the Aire LEAP area. This is mainly due to sulphur dioxide from the burning of coal which is blown over the cities of Leeds, Bradford and Wakefield under certain weather conditions. Drax has been fitted with flue gas desulphurisation (FGD) equipment to remove sulphur dioxide although Ferrybridge and Eggborough have not.



Photograph C - Eggborough power station

The FGD plant was temporarily closed at the end of January 1998 due to mechanical problems. National Power submitted an application to the Agency for a temporary variation to increase annual sulphur dioxide emissions from 100,000 to 270,000 tonnes to cover the period until the plant is repaired and back in operation. Full details of the application are on the public register at the Agency's office in York and at the offices of Selby District Council. The views of the public and interested bodies were sought through a separate consultation exercise and taken into account before the Agency made a decision.

In March 1997, the Government published a National Air Quality Strategy (NAQS) for the pollutants of most concern. As a result of this, new shorter term air quality standards have been introduced for sulphur dioxide. Ferrybridge and Eggborough are involved in a national trial for predicting potential breaches of the NAQS and evaluating options available to avoid such breaches. The results of this trial will be assessed and the power stations' authorisations may be varied to include conditions identified by a national working group set up by the Agency.

5. Achieving local air quality objectives through regulation of Agency controlled processes

Local air quality planning is the responsibility of the local authorities who monitor traffic pollution and regulate the smaller industries and processes. However, the Agency is responsible for regulating emissions to air from major industrial processes under the regime of Integrated Pollution Control.

We will work with local authorities to ensure that Agency-driven improvements complement local authority air quality objectives. A local air quality strategy for Agency regulated

processes would allow the Agency, when formally consulted by local authorities, to contribute to local air quality plans.

<i>ref</i>	<i>proposed action</i>
3.2.1	In partnership with local authorities, develop an overall air quality strategy for releases from Agency regulated processes within the Aire LEAP area.
3.2.2	Assess current monitoring programmes for Agency regulated processes in light of their impact on local air quality.

3.3 Managing water resources

At their worst, water shortages lead to dry taps for consumers and cause rivers to fall to levels which kill plants and animals. The Agency's responsibilities include ensuring that water companies, industry and the public use water more efficiently.

We urge water companies to reduce leakage, manage the water demands of their customers more effectively and we advocate targets to Government and the Office of Water Services (OFWAT) to reduce losses. This will help limit the damage to the environment during a drought.

We are also addressing our own water use by setting ourselves a target to:-

- reduce water use in offices and depots to 30% below either the accepted norm for the office type or our 1996/97 consumption, whichever is higher, by 31 September 1998.

6. Balancing the needs of the environment and abstractors under all flow conditions

In the past, licences to abstract water were usually granted without time limits or restrictions for times of low flow. A policy using time limits and hands off flow restrictions (a condition where, if river flows fall below a pre-defined level, abstraction is stopped until water levels recover) was developed in the 1980s and applied to spray irrigation licences, in particular in the lower Aire catchment.

The policy has now been refined and updated to take more account of environmental needs and has been used in other catchments. When applied to the River Aire it will set time limits and hands off flow restrictions to a wider range of abstractions than was previously the case.

<i>ref</i>	<i>proposed action</i>
3.3.1	Apply the Surface Water Abstraction Licensing Policy to the Aire catchment.

7. Protecting the Sherwood Sandstone groundwater resource

The Sherwood Sandstone stretching from Selby to Doncaster is a major aquifer (underground rock that absorbs and holds water) that is used extensively for water supply, agriculture, and industry. These abstractions have lowered groundwater levels which might affect resources

in the long term. A computer model of the aquifer is being developed to predict long-term implications of current abstractions.

Rural land use over the Sherwood Sandstone aquifer makes groundwater resources vulnerable to contamination, such as nitrate leaching from agricultural fertilisers. Nitrate levels at some of the public supply boreholes have increased in recent years. To protect supplies, surrounding areas have been designated as Nitrate Sensitive Areas (NSAs) where farmers will be compensated for changing agricultural practice to grow crops that will reduce nitrate leaching. Nitrate Vulnerable Zones, which cover all NSAs and any additional supply sources that might exceed the European Drinking Water Directive on Nitrate by the year 2010, have also been identified and implemented in the area.

<i>ref</i>	<i>proposed action</i>
3.3.2	Review existing Groundwater Protection Zones following completion of the computer model to predict long term implications of current abstractions.
3.3.3	Expand the groundwater monitoring network to assess background groundwater quality, pollution impacts and groundwater levels.

8. Ensuring the best use is made of compensation flow releases from reservoirs

The statutory requirement to release compensation flows from reservoirs was set many years ago, based mainly on the requirements of industrial users - particularly for water power. With the decline in industrial water use and increased environmental awareness, the operation of these releases should be reviewed to ensure they are appropriate for the needs of all users.

There is a statutory compensation release from Winterburn Reservoir into the Winterburn and Eshton Becks (near Gargrave) which is associated with the supply for the Leeds and Liverpool Canal. In the past there have been reports of low flows downstream of the canal intake on Eshton Beck which might be affecting the ecology of the stream.

<i>ref</i>	<i>proposed action</i>
3.3.4	Investigate in-river requirements and water use demands downstream of reservoirs.
3.3.5	Investigate the existing situation at Winterburn and Eshton Becks to determine what improvements to monitoring and measuring may be necessary. This could include considering proposals to alter the compensation release under statute.

9. Measuring water abstraction from rivers to supply canals

British Waterways abstract large volumes of water from the River Aire downstream of Leeds and at Ferrybridge, for the Aire and Calder Navigation. There is currently no statutory requirement to measure these abstractions. However, measurement of these abstractions would aid hydrological investigations and water resource management in the area.

<i>ref</i>	<i>proposed action</i>
3.3.6	In partnership with British Waterways, implement flow measurement on abstractions from the River Aire to feed the Aire and Calder Navigation.

10. Providing water supplies to urban areas within the catchment

There are many small reservoirs in the Aire catchment, particularly on the upland tributaries around Keighley, Skipton and on Rombalds Moor. However, these do not provide sufficient water to meet the needs of the catchment. As a consequence, much of the water is imported from reservoirs and rivers in the Wharfe, Nidd, Ure, Ouse and Derwent catchments.

As water quality improves, a more sustainable approach could be to abstract water directly from the Aire catchment to supply its cities.

<i>ref</i>	<i>proposed action</i>
3.3.7	Investigate potential locations in the Aire catchment that could be used for the abstraction of water for public supply once the necessary water quality improvements have been achieved.

11. Promoting the conservation of water

Water resources are vital for domestic use, industry, agriculture, recreation and as a habitat for wildlife. The use of water can put our resource under considerable strain, particularly at times of drought. Conserving water by reducing the amount that is actually used should minimise the need to impose restrictions on water use during the summer months.

We already encourage water conservation in industry through our waste minimisation initiatives which promote more efficient use of raw materials, energy and water to all businesses (links to issue 40). In addition, smaller industries could be encouraged to conserve water by re-using surface water run-off, e.g. for dust suppression and wheel washes.

Our work with local planning authorities to encourage future developments to reduce the rate of run-off could also offer benefits for water resources. Water could be retained on site and recycled for other purposes (links to issue 34).

<i>ref</i>	<i>proposed action</i>
3.3.8	In partnership with business support groups, encourage the re-use of surface water run-off to replace the use of fresh water supplies.

3.4 Enhancing biodiversity

Biodiversity, the variety of life on earth, is declining at an alarming rate. In the United Kingdom (UK) alone, more than 100 species are thought to have become extinct this century.

In June 1992, at the Earth Summit in Rio, the Convention on Biological Diversity was signed by the UK and over 150 other countries. The UK response to this commitment was launched in January 1994 with "Biodiversity: The UK Action Plan".

The UK Biodiversity Action Plan identifies "contact points" for threatened and declining species. The Agency is the contact point for Chalk rivers and for 12 species of aquatic animals and plants including the otter, water vole and rare species of fish. We will be developing action plans to help protect these species and will report on their progress.

12 Implementing the UK's Biodiversity Action Plan

The UK Biodiversity Action Plan identifies a number of species relevant to the LEAP area which require conservation action. The Agency is the contact point for the otter, native crayfish, freshwater pearl mussel and the water vole. An important first step in the conservation of these species will be to collect accurate information about their current status.

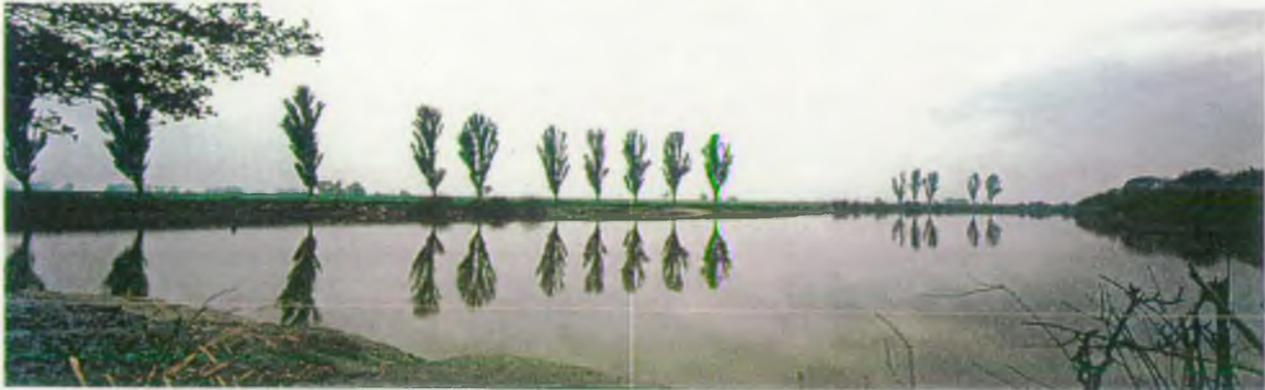
Local authorities are working on Local Biodiversity Action Plans and we will support the development of these Plans to ensure the protection of locally important species.

<i>ref</i>	<i>proposed action</i>
3.4.1	Undertake a desk study to coordinate all water vole records within the area and develop a survey programme to assess the current status of water vole populations in the catchment.
3.4.2	Investigate the likelihood of otter populations expanding into the catchment, and instigate a suitable programme of habitat creation which includes riverside shrubs and trees.
3.4.3	Collate records of both native freshwater white-clawed crayfish and introduced crayfish throughout the catchment. Continue studies at Meanwood Beck in Leeds in collaboration with Leeds City Council, English Nature and other interested bodies.
3.4.4	Review the status of washlands in the ownership of the Agency and investigate the possibilities of reedbed and wetland creation at these sites. Continued creation of reedbeds in collaboration with the Royal Society for the Protection of Birds at Fairburn Ings Nature Reserve.
3.4.5	Re-introduce black poplar to suitable sites in collaboration with local conservation groups and bodies.

13. Encouraging the planting and management of trees and shrubs in the lower Aire valley

The River Aire between Knottingley and its confluence with the River Ouse lacks bankside vegetation. There are few riverside trees and shrubs which results in a limited variety of habitats and a lack of cover for birds and other wildlife. This restricts the value of the river as a wildlife corridor.

<i>ref</i>	<i>proposed action</i>
3.4.6	In partnership with landowners, prepare a plan for managed tree and shrub planting along the lower Aire valley.



Photograph D - Confluence of the River Aire and the River Ouse

14. Identifying and protecting genetically unique fish populations

The headwaters of the River Aire have been largely unaffected by the introduction of farm reared fish and therefore may contain genetically unique fish populations that are adapted to specific environmental conditions. This also applies to enclosed waters within the Aire LEAP area. Such unique fish populations need protecting from changes in land use and insensitive fishery management practices (e.g. stocking with farm reared fish).

Currently the special protection of fish populations within Malham Tarn Site of Special Scientific Interest (SSSI) is being addressed to establish a self sustaining fishery without the need for artificially introduced fish stocks.

<i>ref</i>	<i>proposed action</i>
3.4.7	Identify genetically unique fish populations within the catchment.
3.4.8	Develop partnerships with major landowners in upper Airedale to further fisheries conservation projects, e.g. National Trust, Yorkshire Dales National Park and Yorkshire Water.

15. Protecting exposed riverine sediment habitats

Exposed riverine sediments were recently the focus of a national research and development project which identified them as important habitats for a number of rare and specialised species. These habitats have been lost throughout the catchment due to historical canalisation of rivers and routine dredging of sediment build up. The current extent and ecological value of this type of habitat in the Aire catchment is currently not known.

<i>ref</i>	<i>proposed action</i>
3.4.9	Survey the catchment to identify the location of exposed riverine sediments and investigate their ecological value.

3.5 Managing freshwater fisheries

Historically, the Aire was a salmon river with catches recorded into the early part of the 19th century. Poor water quality has prevented them returning to the river. The Agency's vision for fisheries is that all waters in England and Wales will be capable of supporting thriving fish populations and everyone will have the opportunity to experience a wide range of good quality fishing.

16. Reducing barriers to the movement of fish between river stretches

The industrial heritage of the River Aire has left a legacy of numerous weirs (30 weirs on the main river alone) that were constructed to harness water power. Many of these weirs are now listed structures and are no longer used for water power generation. They cause a barrier to the free passage of both trout and coarse fish species, preventing natural migration patterns and could limit the re-establishment of fish species into reaches that are now improving in water quality. A database has already been prepared recording all the current weir structures present on the main River Aire. Various designs of fish pass are available and can now be fitted to most weirs without detriment to other uses (links to issue 2).

A concrete weir currently prevents the movement of fish between the River Aire and Cononley Beck. This may be preventing trout from recolonising the beck. Diverting the lower reaches of Cononley Beck to bypass the weir could also offer an opportunity to develop the disused Bradley sewage works into a nature reserve.

<i>ref</i>	<i>proposed action</i>
3.5.1	Extend the existing database to record similar obstructions to the movement of fish on the main tributaries.
3.5.2	With owners of weirs, seek opportunities to install fish pass structures and, in conjunction with English Heritage and local authorities, ensure the protection of heritage features.
3.5.3	In collaboration with other organisations, including the landowner, divert the lower reaches of Cononley Beck to bypass the concrete weir.

17. Re-introducing barbel to the River Aire

A recent search of available literature has revealed that there is now evidence to support the claimed historical presence of barbel in the River Aire. Documented evidence prior to 1850 to prove that this species was once indigenous was absent up until now and the species had therefore been regarded as non-native and unsuitable for stocking.

In line with the introduction of barbel into other Yorkshire rivers, it is suggested that this species could prove to be an asset for the River Aire.

<i>ref</i>	<i>proposed action</i>
3.5.4	Consult angling interests about the introduction of barbel to the River Aire.

18. Promoting the recreational potential of urban fisheries

The identification with others of environmentally sensitive habitats is an ongoing process and many sites are already afforded protected status. However, many valuable sites are still unrecognised and are therefore vulnerable to damage. These sites have great potential for the regeneration and renewal of urban areas. In particular, stillwaters within urban areas could be promoted for angling to benefit the disadvantaged. This offers an opportunity to work in partnership with local authorities, industry and local conservation groups.

We are collating a register of all Agency landholdings with fisheries potential. As water quality improves, we will assess those landholdings close to urban areas for their potential to be offered for angling use. This will include consideration of the needs of the disabled and other disadvantaged groups.

<i>ref</i>	<i>proposed action</i>
3.5.5	Restore Middleton Park in Leeds in partnership with The Middleton Youth Project and Leeds City Council to promote local angling facilities for disadvantaged juvenile anglers and also to promote the venue for disabled anglers.
3.5.6	In collaboration with Leeds City Council and other interested organisations, carry out a project to de-silt Yeadon Tarn and improve its recreational use by managing current fish stocks and providing additional wildlife habitats.

3.6 Delivering integrated river-basin management

Integrated river basin management is a way of looking at the river and its surrounding land as a whole. It not only looks at the quality and quantity of water in the river but also at its physical environment, including landscape, recreational use, flood control works and the wildlife of the river and surrounding land.

19. Ensuring existing flood defences meet current target standards

The Agency has target standards of protection against flooding of land and properties which vary with the type of use to which the land is put. The target for urban areas, for example, is higher than that for agricultural land. In some parts of the Plan area existing flood protection levels are below the standard of service targets. This may have arisen because of changes in catchment characteristics (increased surface water run-off), due to development in the natural flood plain, structural deterioration of some defences or their historical deficiency. In such locations, a relatively small number of properties will be at risk from flooding.

Over the years improvement works have been carried out at the majority of locations where property flooding has been a problem. This will not always accord with current standards as in some instances target standards have been revised upwards to reflect the public's raised expectation in terms of flood protection. The standard of flood protection provided by the improvement schemes we promote are to a standard which have to be economically justified by cost/benefit analysis.

A flood alleviation scheme is planned for Castleford during the lifetime of this LEAP.

20. Protecting areas which may be prone to flooding but are currently undefended

There are areas that are identified as being subject to localised flooding that have no defences. There has been very little pressure to protect these sites because there have been no large floods since 1946.

<i>ref</i>	<i>proposed action</i>
3.6.1	Carry out investigations of several locations, including the Bingley area, and Kirkstall Road in Leeds.

21. Minimising the impact of river maintenance

Current standards of flood protection can only be sustained by regular maintenance of the channels and banks including dredging, weedcutting and tree/shrub clearance. This maintenance can cause environmental problems affecting water quality and river habitats. Enhancement and mitigation opportunities are sought, wherever possible, for Agency flood defence maintenance works.

Internal Drainage Boards are established in low-lying areas where flood protection and land drainage are necessary to sustain both agricultural and developed land use. Under the legislation, these Drainage Boards also have environmental and recreational duties.

<i>ref</i>	<i>proposed action</i>
3.6.2	Review flood defence maintenance and develop the Flood Defence Management System.
3.6.3	Identify and undertake, in partnership, habitat and river rehabilitation schemes on a prioritised basis according to the benefits to be derived from the work and seize opportunities when resources become available.
3.6.4	Investigate more sustainable methods for maintenance works, e.g. explore tree planting opportunities to provide shade and reduce the need for aquatic weed cutting (appropriate sites would include those where maintenance access is not blocked and with the riparian owners' agreement).
3.6.5	In partnership with Internal Drainage Boards, investigate opportunities to minimise the environmental impact of their work.

22. Promoting good agricultural practice

A national initiative on sheep dip chemicals was started to ensure compliance with drinking water standards for pesticides. As part of this initiative, the upper Aire was surveyed in October 1997. The survey highlighted very poor biological quality in two watercourses: Kirkby Beck downstream of Kirkby Malham and Hetton Beck downstream of Flasby. The ecology of the becks may have been affected by poor disposal of sheep dip pesticides.

Otterburn Beck and Crosber Beck in the upper catchment (north west of Gargrave) have been adversely affected by organic pollution, believed to have been caused by agricultural activities.

<i>ref</i>	<i>proposed action</i>
3.6.6	Carry out a campaign to raise awareness of the risks of sheep dip disposal in the upland catchments during the two dipping periods of June and August 1998.
3.6.7	Undertake a farm survey in the Otterburn and Crosber Beck catchments to assess the extent of pollution problems and to promote good agricultural practice.

23. Improving local village sewerage systems

Sewerage in some rural villages has traditionally relied upon each dwelling having its own septic tank. The overflow from these tanks is designed to drain into the soil through a below-ground soakaway. In poorly drained areas with clay soils, or where the water table is high, common practice has been to drain the tanks to the nearest watercourse, causing localised pollution of becks. Stirton and Thorlby villages have inadequate sewage treatment facilities which result in poor water quality in Stirton and Thorlby Becks.

Village drains (Sewer Dykes) in the lower Aire catchment receive sewage effluent from domestic properties and discharge into small watercourses where they have an impact on water quality. A number of village drains are adopted and are therefore the responsibility of Yorkshire Water Services. Under the Urban Waste Water Treatment Directive, these village drains qualify for "Appropriate Treatment". Investment will occur in the next Asset Management Plan period (AMP3 covering the years 2000 to 2005) and prioritisation will be based on the impact that village drains have on the receiving watercourse (links to issues 29 and 45).

<i>ref</i>	<i>proposed action</i>
3.6.8	Work together with residents, the local council, and Yorkshire Water to ensure that both Stirton and Thorlby villages get first time sewerage schemes.
3.6.9	Investigate the impact of discharges from individual domestic properties and act jointly with the relevant planning authority to secure improvements where necessary.

24. Addressing poor recruitment of coarse fish to the River Aire above Keighley

The stretch of the River Aire between Carleton and Keighley should support a mixed fishery of both trout and coarse fish species. Reasonable stocks of brown trout are present, however, fisheries survey results for this section of river and angling census data for Kildwick indicate that the Aire contains a poor variety of coarse fish. These results also show that the river does not respond to potentially good recruitment years as well as other Yorkshire rivers have.

Fish populations are often restricted by poor water quality. However, the classification for this stretch of river (generally Class C indicating fair quality) is similar to that further down where more diverse populations of coarse fish are found.

A university project that looked at metal concentrations in sediments of the River Aire around Kildwick found elevated levels of lead and zinc due to historical lead mining activities in Cononley. This project did not assess whether or not these levels could be toxic to fish.

Other factors that could potentially restrict fish populations include instream cover and spawning site availability. The river below Keighley also contains numerous weirs which act as a barrier to the movement of fish and which could, therefore, restrict recolonisation of fish from the lower river (links to issue 16).

<i>ref</i>	<i>proposed action</i>
3.6.10	Undertake a detailed survey of fish populations and habitat availability in the River Aire above Keighley. To include a study of the implications of lead sediment concentrations on coarse fish survival in the Cononley area.
3.6.11	Take appropriate action based on the results of this investigation to restore self-sustaining fish populations. This could include the phased restocking of those reaches where water quality and habitat should not restrict the development of a mixed coarse fishery.

25. Reducing pollution from contaminated surface water sewers

Pollution of our rivers and underground waters can put drinking water and irrigation supplies at risk and seriously harm river life, including fish and wildfowl. While such pollution is commonly associated with industry and agriculture, a significant number of incidents can be linked directly to individuals and their homes.

In 1996, 20% of all water pollution incidents in the LEAP area were from industrial sites. The majority of these were caused by spillages usually resulting from poor procedures, inadequate control devices, structural failure or from incidents such as fire.

Some industrial and domestic properties served by sewers have two drainage pipes. The foul sewer, carries sewage effluent to a sewage works for treatment before it is discharged to a river. The other, the surface water drain, carries clear water directly to rivers or soakaways. Any input to this drain will be untreated, therefore, industries and householders who wrongly connect washing machines, toilets, vehicle washes, etc. will cause pollution.

The Agency can influence future industrial and housing developments to ensure that the issue of cross-connections is addressed (links to issue 34).

<i>ref</i>	<i>proposed action</i>
3.6.12	Carry out campaigns at industrial sites to identify possible sources of pollution and encourage best practice, e.g. Beckfield Road in Cottingley, Cemetery Road in Bradford, Holme Beck in Bradford and Ninelands Beck in East Garforth. This could include helping industries to identify and code the correct drains.
3.6.13	Carry out campaigns at housing estates to educate householders about how they could be polluters without knowing it.

26. Achieving water quality classification targets

The River Ecosystem (RE) classification scheme provides, on a national basis, a set of water quality targets which the Agency uses as a basis for setting consents to discharge and in undertaking other water quality planning activities. A number of river stretches in the Aire catchment failed to achieve their target classes in 1996. Improvement schemes are already underway to address some of these.

Meanwood Beck between Sheepscar and the River Aire is classified as poor (RE Class 5) and improvement is needed for the beck to achieve its target of RE Class 4. This may be due to discharges from combined sewer overflows which will be considered as part of the Asset Management Plan negotiations (links to issue 29). However, this stretch may also be polluted from other sources. It is culverted for most of this length.

<i>ref</i>	<i>proposed action</i>
3.6.14	Survey Meanwood Beck between Sheepscar and the River Aire to identify the source of pollution.

27. Identifying the cause of discrepancies between biological and chemical classifications

The River Aire and many of its tributaries have carried effluents from the industrial conurbations of West Yorkshire since the Industrial Revolution. Water quality improvements which result in river classification upgrades may not bring about similar biological classification improvements at the same rate. This is due to the presence of other substances which are not taken into account in the chemical river quality classification (such as pesticides, herbicides and heavy metals) as well as poor sediment quality.

Significant differences in classification were found in the 1995 survey on the River Aire above Cononley Beck, at Crossflatts, above Cottingley Bridge, above South Accommodation Bridge and at Castleford. There were also significant differences on Bridgehouse Beck above the River Worth, Bradford Beck above West Brook, Gill Beck (Guiseley) at Keepers Hill, Meanwood Beck at Buslingthorpe Lane, Oulton Beck above Farrah Lane pumping station, and Fryston Beck at Ferrybridge.

A working project is underway to assess Direct Toxicity Assessment in the Aire catchment from Snaygill to Kirkstall. Such a method of toxicity control could in the future be used in resolving chemistry/biology mismatches but at present is still being assessed.

<i>ref</i>	<i>proposed action</i>
3.6.15	Identify the impact of inputs on the biology of the Aire catchment at sites where the chemical classification does not match that indicated by the biology.

28. Reducing rubbish in the aquatic environment

Despite campaigns to raise public awareness and local (mainly voluntary) efforts to improve the situation, problems of litter in the aquatic environment persist and are increasingly reported. A wide range of litter items can be found strewn along bankside vegetation and also caught in tree branches, having been deposited after periods of high river flow. One of the most common types of litter is plastic. The non-biodegradable nature of this material means it may persist indefinitely and this is probably one explanation for its abundance.

Section 34(1)b of the Environmental Protection Act 1990 imposes a duty on any person who produces or handles waste to prevent the escape of waste from their control. Anybody who fails to do this could be liable, on conviction, to a fine of up to £20,000 in the Magistrates Court.

The Agency is not resourced to clear wholly the riverside environment of litter, and responsibility for clearing general litter lies mainly with the local authority or land owner. However, the Agency does remove debris when it could affect the normal flow of a watercourse.

Littering of the aquatic environment can make sites less attractive for recreational use.

<i>ref</i>	<i>proposed action</i>
3.6.16	Campaign to encourage the clean up and prevention of littering in partnership with local authorities, residents and community groups. All clean up initiatives must protect the health and safety of everyone involved.
3.6.17	Encourage the owners of developments and businesses to "adopt" nearby watercourses and keep them free from litter. Inform those who produce or handle waste of their duty to prevent the escape of waste from their control.
3.6.18	Investigate the potential use of booms or fences at problem sites as a trap for litter which could be regularly cleared and maintained.

29. Addressing the impact of Combined Sewer Overflows

Sewage litter entering watercourses through combined sewer overflows is a particularly unsightly problem. Litter discharged from the sewer system during periods of high rainfall becomes entrained in bankside foliage and often gives rise to public complaint. Overflows also affect the chemical, biological and microbiological quality of the water.

Investment by Yorkshire Water is set every five years by OFWAT (Office of Water Services), in consultation with the Agency. The Asset Management Plan for 2000 to 2005 (AMP3) is currently being developed (links to issues 23 and 45).

The following drainage area zones within the catchment have unsatisfactory combined sewer overflows and are being considered for investment under the AMP3 process:-

<i>drainage area zone</i>	<i>unsatisfactory overflows</i>	<i>watercourse</i>
Meanwood	Meanwood	Meanwood Beck
Wyke Beck	Roundhay Seacroft Gipton Halton Moor	Wyke Beck
Bingley	Gilstead	Little Beck
Gipton	Gledhow Valley	Gledhow Beck
Garforth	East Garforth	tributary of Kippax Beck
Middleton	Sheepscar	Sheepscar Beck

Prioritisation will be based on an analysis of costs and benefits. The Agency is in discussion with its statutory consultees and Area Environment Groups about this process and we are trying to ensure that economic arguments are fairly balanced against the benefits of environmental improvements and their value to the community at large.

30. Encouraging recreational use of the riverside environment

The improving environment of the Aire catchment has raised awareness and expectations for its potential recreational use. As watercourses and nearby land are increasingly used for recreation, there is likely to be a rise in conflicts between the different users.

Where the Agency owns land on and near rivers in the catchment, we can develop opportunities for increased recreational use by working in partnership with other organisations.

Recreational use also offers the opportunity to educate members of the public about their local environment.

<i>ref</i>	<i>proposed action</i>
3.6.18	Investigate the potential for, and where appropriate develop, better access to watercourses next to Agency owned land.
3.6.19	In partnership with others provide and, where possible, update information about the environment on interpretive boards.
3.6.20	Facilitate the resolution of likely conflicts between different recreational users.



Photograph E - Lemonroyd Basin on the Aire and Calder Navigation

31. Monitoring the bacteriological quality of watercourses

The Government can designate inland waters under the Bathing Waters Directive which would mean they were regularly sampled for compliance against bacteriological standards. There are nine inland designated sites in England (six are in Thames Region and three in North West).

Currently there are no inland waters in the Aire catchment that have been nominated for designation under the Bathing Waters Directive even though parts of the catchment are extensively used for recreation. This means that those stillwaters and watercourses used for immersion sports and paddling are not routinely monitored for their bacteriological quality.

<i>ref</i>	<i>proposed action</i>
3.6.21	Investigate the feasibility of nominating inland recreational waters in the Aire catchment for designation under the Bathing Waters Directive. Priority should be given to established recreational sites.

32. Improving the fish population in Earby Beck

Intermittent poor water quality is thought to be the main factor limiting the establishment of good brown trout populations throughout the Earby/Broughton Beck system. Results of the 1995 fish population survey identified poor stocks of brown trout at sites downstream of Earby.

<i>ref</i>	<i>proposed action</i>
3.6.22	Extend Agency sampling programmes to identify potential water quality problems in the Earby/Broughton Beck system.

33. Identifying the source of elevated copper levels in the lower Aire

The dissolved copper concentrations in the River Aire rise as the river passes downstream. The Environmental Quality Standard limit for copper is 10 ug/l dissolved copper expressed

as an annual average and though this limit has not been exceeded since 1995 the limit is approached as the river passes Snaith and its lower reaches. The potential exists for the Standard to be breached again and further work is required to explain the levels to determine where any improvements might be necessary. This is particularly a problem in times of low flow.

Work is ongoing to assess the impact discharges and other factors have on the dissolved copper concentration of the lower reaches of the River Aire.

<i>ref</i>	<i>proposed action</i>
3.6.23	Determine and control sources of copper levels in the river and the effluents of major dischargers.

3.7 Conserving the land

We will do our best to prevent housing and industrial development in the wrong places, by influencing Town and Country Planning systems. This will include discouraging development in flood plains and ensuring the availability of water resources, waste and sewerage infrastructure are considered when new developments are planned. We will also encourage development on "brown field" sites in preference to the use of "green belt" land.

With local authorities, we will identify and report on the extent of contaminated land and will regulate identified special sites.

34. Minimising the environmental impact of planned development

Local planning authorities control development through the land use planning system. The Agency advises the planning authorities on the impact of proposed development together with our requirements for environmental protection. We also work with the planning authorities to ensure that suitable policies to protect and enhance the environment are incorporated within their Local Development Plans.

Development that takes account of the environment can reduce the risk of pollution, for example from the inappropriate storage of chemicals on industrial sites not subject to Integrated Pollution Control.

It can also reduce the risk of flooding by preventing rapid surface water run-off in urban areas or maintaining flood storage capacity. Impermeable surfaces, such as car parks and roads, and modern drainage systems have significant consequences on the environment. Removal of the natural filtering effect of vegetation and soil layers can affect water quality. Increased run-off rates lead to higher, more frequent, flood flows in downstream areas. There are several techniques and approaches that can help to minimise these effects, usually referred to as "source control" techniques.

The conservation of water resources, the protection of wildlife habitats and the reduction of the danger to people and property from the migration of landfill site gases are other goals which can be achieved through the control of development.

<i>ref</i>	<i>proposed action</i>
3.7.1	Work with planning authorities to increase the Agency's influence on land use planning.
3.7.2	In partnership with local authorities and developers, carry out a pilot project to demonstrate the benefit of source control techniques.

35. Identifying and remediating contaminated sites where the persons responsible for the pollution cannot be found

The Agency is aware of several contaminated land sites that cause pollution of surface and/or groundwaters within the catchment. Wherever possible the Agency uses its existing powers to prevent or mitigate this pollution. In all cases we seek to take action against the polluter to bring about these improvements. There are, however, contaminated sites within the catchment where the persons responsible for the pollution cannot be found.

<i>ref</i>	<i>proposed action</i>
3.7.3	Identify and prioritise contaminated sites within the catchment which are having a known impact on controlled waters but where the polluter cannot be found.
3.7.4	Secure funds from relevant institutions to remediate the sites identified, working in partnership with the local authorities.

36. Working with organisations who own significant areas of potentially contaminated land

There are large organisations and corporate bodies, often linked to former nationalised industries, that own significant areas of potentially contaminated land within the catchment. When assessing their environmental liabilities, or preparing the land for sale, these organisations are investigating and dealing with land contamination problems. This offers the opportunity to bring about environmental improvement in the area. By working with these organisations and providing advice, the Agency can encourage and facilitate solutions to actual or potential environmental problems.

<i>ref</i>	<i>proposed action</i>
3.7.5	Establish close links with relevant land holders and developers to promote a prioritised programme of contaminated land reclamation within the catchment.

37. Reducing soil erosion

Modern agricultural land use practices, such as removal of hedgerows, can result in an increase in soil erosion. This, in turn, can increase the amount of sediment washed into watercourses.

Changes in the natural input of sediment into watercourses can have significant effects on stream habitats and may result in drainage problems and harm to wildlife. Sediments can also carry chemical pollutants such as pesticides or nutrients. Risk of erosion is greatest on vulnerable soils (such as sandy soils) with steep slopes.

Changes in land use management are important for tackling this issue. One technique for reducing diffuse pollution from agriculture lies in the use of buffer strips. These are generally a vegetated strip of land alongside a watercourse that is managed separately from the rest of a field. They reduce pollution by distancing agriculture from a riparian area, thus reducing direct pollution (e.g. spray drift) and by intercepting run-off and soil movement from agricultural land. Marginal vegetation and tree growth are also vital for upland fishery habitats as well as for maintaining biological diversity.

From its source at Malham downstream to Keighley, the River Aire riparian zone is largely unprotected from erosion by both sheep and cattle and there are extensive lengths of river bank that are suffering from erosion. This is a problem both for the river and its main tributaries, e.g. Otterburn Beck. A Millennium-funded project is already being progressed to improve the river within the Yorkshire Dales National Park.

Bank erosion problems have also been caused by unconsented fishing platforms and the digging away of the river bank to give fishermen access to the river.

<i>ref</i>	<i>proposed action</i>
3.7.6	Work in partnership with local farmers, Yorkshire Dales National Park, National Trust and conservation groups to implement a plan for sequential planting of bankside vegetation of the upper reaches of the River Aire.
3.7.7	Collaborate on the Millennium project to enhance the River Aire within the Yorkshire Dales National Park.
3.7.8	Work with anglers to prevent problems of bank erosion.

38. Protecting the natural flood plain alongside the river corridor

When a watercourse floods the excess water flows into the floodplain which provides extra flow and storage capacity. In the upper reaches of the River Aire the extensive natural floodplain has been built upon by generations of landowners. The impact of this development has been offset by a complex system of washlands helping to reduce flood levels below Keighley and construction of controlled washlands below Leeds over the last 30 years.

<i>ref</i>	<i>proposed action</i>
3.7.9	Identify opportunities to develop new washlands for water storage and nature conservation.
3.7.10	Create open water areas and other wetland habitats on existing washlands alongside the river.
3.7.11	Collaborate on habitat improvements within washland areas, especially on Agency owned land, e.g. further develop the Snaygill flood storage lagoon which also acts as a fish haven.
3.7.12	Support other organisations in the protection of existing valuable flood plain habitats, e.g. Mickleton Ings SSSI, Fairburn and Newton Ings SSSI, and many other valuable washlands in the lower Aire valley in particular.

39. Assessing zinc contamination of Eastbrook Beck

Eastbrook Beck in Bradford contains high levels of zinc. It is likely that contaminated land and/or contaminated groundwater is the source of this pollution. The beck is in a culvert which makes conventional sampling techniques inappropriate for identifying the exact source

<i>ref</i>	<i>proposed action</i>
3.7.13	Assess the extent of the problem and evaluate possible options to address the issue.

3.8 Managing waste

Waste impacts upon our lives in many different ways, from litter on our streets to bad smells and gases from landfill sites. The Agency's regulatory responsibilities include measuring the effectiveness of taxation to reduce waste and encourage its re-use and recycling.

Other responsibilities include the apprehension of fly tippers and implementing the new Producer Responsibility Regulations. These Regulations require industry - particularly manufacturing, to recover or recycle packaging waste.

We are also working to encourage industry and consumers to recycle their waste. We are urging consumers to consider waste when selecting products and industry to reduce the amount of waste it produces.

40. Minimising waste

Waste management options can be ranked in a hierarchy according to their potential risk to the environment (see Figure 3 on the next page). Sustainable development generally requires that waste management practice moves from the bottom (disposal) to the top (reduction) of the hierarchy. In between these are re-use and recovery (e.g. converting into energy). This should be achieved in a measured way, using the principle of Best Practicable Environmental Option (priorities within the hierarchy do not hold true for all waste types because, for example, some types of waste cannot be re-used).

BEST PRACTICE

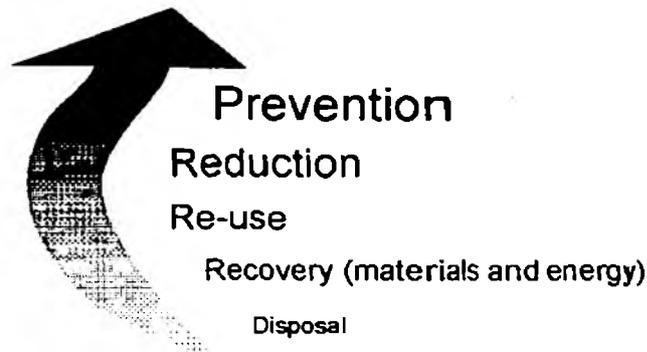


Figure 3 - The waste hierarchy

The Agency and its predecessor bodies have sponsored a number of successful projects on waste minimisation. These projects have demonstrated how waste minimisation techniques can reduce operational costs, save on raw materials, water and energy, and reduce waste outputs. (Links to issues 3, 11 and 43). The Aire and Calder project ran from 1992 to 1995 and clearly demonstrated the environmental and economic benefit of a systematic approach to emission reduction, based on the principle of waste minimisation.

Householders should also be made aware of the individual and collective contribution they can make to reduce waste. Widespread public support for recycling needs to be matched by information on the choices people have in purchasing and disposing of goods.

The EC Directive on Packaging and Packaging Waste requires that no later than 2001 the UK recovers or recycles at least 50% of its packaging waste. The aim is to ensure that the real cost of producing, using and disposing of packaging falls directly on those who produce or use it.

<i>ref</i>	<i>proposed action</i>
3.8.1	Encourage more companies, especially small and medium sized enterprises, to measure and calculate the costs of their wastes and encourage them to keep track of what their main competitors are doing.
3.8.2	Work with Business Support organisations in the preparation and provision of advice on waste minimisation and good environmental practice.
3.8.3	Maintain the momentum created by the introduction of the Producer Packaging Responsibility Regulations by continuing to target industry with updated information, seminars, mailshots etc.
3.8.4	Campaign to make householders aware of the individual and collective contribution they can make to reduce waste. In co-operation with local authorities and the manufacturers of packaging, match widespread public support for recycling with information on the choices people have in purchasing and disposing of goods.

41. Maximising environmental benefits from Landfill Tax credits

Landfill Tax is collected by landfill site operators and paid over to HM Customs and Excise. Under the Landfill Tax regulations some of this tax can be reclaimed by landfill operators if they make contributions to approved bodies (Environmental Bodies). The amount reclaimed can be up to 90% of that contribution (subject to a maximum which is 20% of their annual Landfill Tax liability).

An "Environmental Body" can be any organisation whose aim is, or includes, the protection of the environment. It must support one or more of the objectives set out in the Landfill Tax Regulations. The bodies can be established organisations or new ones set up especially to make use of the tax credits. Environmental Bodies must enroll with the regulator (ENTRUST).

At the discretion of the landfill industry, nationally up to £100m per year could be channelled into Environmental Bodies. There is enormous potential for benefits to the environment to be achieved from these funds through collaborative work and partnerships. In relation to the Agency's functions, such projects could include general habitat improvement and restoration schemes, recreation improvements, conservation projects, and waste minimisation initiatives.

<i>ref</i>	<i>proposed action</i>
3.8.5	Inform all landfill operators who are subject to landfill tax of the options open to them under the Government's Environmental Bodies Scheme.
3.8.6	Encourage local groups to register as Environmental Bodies and support them in carrying out environmental improvement projects.

42. Reducing the illegal tipping of waste

Illegal tipping, or "flytipping" is a widespread problem that affects the rural as well as the urban environment. It makes the environment unattractive and in some cases can cause land and water pollution, and hazards to people.

There is evidence that flytipping is an increasing problem. Waste is tipped illegally to avoid the disposal charge and this has increased significantly recently because of the addition of Landfill Tax from October 1996. Often the problem is made worse by the general public being unaware that their wastes can be disposed of for free either by the collection authorities or through civic amenity sites.

The materials that are flytipped most are household and builders' wastes. However, there are occasions when industrial and commercial wastes such as tyres, drums and "Special Waste" (for example, asbestos) are tipped. There are certain waste types that are now being routinely tipped in the same area.

The Agency has teams of enforcement staff who carry out investigations, and where necessary surveillance, to identify and prosecute offenders. However, it is often difficult to identify and find culprits and in many cases the tipping is cleared at considerable expense by the local authority or landowners.

<i>ref</i>	<i>proposed action</i>
3.8.7	In partnership with local authorities, educate householders about how to dispose of their wastes free of charge.
3.8.8	Due to the widespread presence of bonded asbestos within the environment, the Agency should promote close partnerships with local authority Environmental Health departments to link the requirements of their notification system to the Agency's requirements under the Special Waste Regulations 1996.
3.8.9	Publicise locally those prosecutions taken by the Agency for offences relating to the illegal disposal of building waste to encourage pressure from customers (small builders often get their work by word of mouth).
3.8.10	Campaign with relevant bodies (such as the local authorities and the Police) to raise the public and waste management industry's awareness of issues associated with illegal waste disposal, e.g. mailshots or seminars to target audiences.
3.8.11	In partnership with local authorities, target business types within the LEAP area that are known to have been involved in illegal activity (e.g. tyre disposal).
3.8.12	In partnership with local authorities use surveillance in areas known to be used routinely for illegal waste disposal (e.g. Briggate in Shipley and Sugden End layby in Keighley).

3.9 Regulating major industries effectively

Pollution from industrial sources can harm people and the whole living world. One of the Agency's key responsibilities is to prevent the release of pollutants into the air, water or land through integrated pollution control (IPC). Where releases do occur, we try to make sure they are minimised and made harmless.

A similar approach to IPC will be introduced throughout the European Union under the new EC Directive on integrated pollution prevention and control (IPPC) which will become UK law by 31 October 1999. IPPC regulates more industrial sectors and takes into account more environmental concerns than IPC, including energy conservation and the clean-up of sites when activities stop.

43. Identifying potential improvements to industrial processes

Reviewing an industrial process in a systematic way can identify potential improvements by assessing its impact on "emissions, efficiency and economics" (the 3Es project). This considers both actual emissions and potential emissions, e.g. from incidents. The methodology has helped companies to achieve emissions reductions in the most economic way while also realising other business benefits.

The 3Es project is being used mainly by companies with processes currently under Integrated Pollution Control to optimise their successes. The methodology was trialed at a number of sites including Hickson and Welch at Castleford.

<i>ref</i>	<i>proposed action</i>
3.9.1	Assess further potential and encourage appropriate companies to adopt 3Es or similar waste minimisation approaches.

44. Addressing the issue of "Endocrine-disrupting substances in the environment"

Detailed investigations on the River Aire have shown that indicators of feminisation of male fish were significantly higher downstream of the discharge of sewage effluent that contained detergents - alkylphenol ethoxylates (APEs) - from the textile industry. The former National Rivers Authority secured a voluntary agreement with the textile manufacturing industry for the use of APEs in wool scouring to be discontinued. This agreement has been respected by the majority of process operators, who are now using alternative products. The Agency is continuing a surveillance programme to assess the effects of these measures on river quality.

There are a number of other substances (including naturally-occurring hormones as well as man-made chemicals) that can have similar feminising effects. The Agency carried out a consultation exercise to seek views and suggestions on "Endocrine-disrupting substances in the environment: What should be done?". The consultation period lasted until 30 April 1998. Results of this national consultation exercise will feed into future local Agency actions to address this issue.

45. Prioritising improvements to discharges from sewage treatment works

Recently local rivers have benefitted from additional investment in sewage treatment. However, there are still a number of works which need further improvement to meet the needs of rivers and their users.

Investment by Yorkshire Water is set every five years by OFWAT (Office of Water Services), in consultation with the Agency. The result is an Asset Management Plan (AMP) which determines what Yorkshire Water will spend on improvements and what they can charge for their services. The latest review, AMP3 covering the years 2000 to 2005, is currently being negotiated (links to issues 23 and 29).

Sewage treatment works in the Aire catchment currently being prioritised for improvements under AMP3 are Airedale, Airmyn, Burn, Earby, East Marton, Eggborough, Esholt, Embsay, Foulridge, Gargrave, Hetton, Hillam, Kirby Malham, Knostrop, Lothersdale, Malham, Oxenhope, Snaith, Snaygill, Sutton and Thornton in Craven.

The consents to discharge from sewage treatment works need to be reviewed to include an ammonia limit where one is currently not included in the consent. Ammonia limits are required to either protect downstream water quality from deterioration in effluent quality at good performing works, or to drive improvements at works to ensure achievement of water quality objectives. Those sewage treatment works not covered under AMP3 requiring ammonia limits will be prioritised locally.

<i>ref</i>	<i>proposed action</i>
3.9.2	Ensure river quality and effluent sampling data is suitable to enable modelling of the effects of discharges on the receiving waters so that consents to discharge covering sewage treatment works which currently do not have ammonia limits can be reviewed and ammonia limits included.
3.9.3	Determine priorities for AMP3 for sewage treatment works using a multi-attribute technique and promote the need for adequate investment for the 2000 to 2005 programme. Identify further actions for post 2005.



Photograph F - Esholt sewage treatment works

46. Implementing the Urban Waste Water Treatment Directive

The River Aire from Carleton to Cononley could be designated as a Potential Sensitive Area under the Urban Waste Water Treatment Directive (Eutrophication) if it complies with the relevant criteria.

<i>ref</i>	<i>proposed action</i>
3.9.4	Install continuous monitoring at a safe location to be agreed with the relevant landowner. This will monitor dissolved oxygen and ammonia levels.
3.9.5	Carry out chlorophyll and macrophyte surveys.

47. Monitoring improvements following construction of an effluent treatment plant at Hickson and Welch

Hickson & Welch are a large chemical company based in Castleford who currently discharge most of their trade effluent to the River Aire after treatment at Wheldale sewage works. This situation will change once a new effluent treatment plant has been constructed on the Hickson & Welch site. Treated effluent will then be discharged directly to the River Aire from the site, providing an opportunity for water quality improvements.

<i>ref</i>	<i>proposed action</i>
3.9.6	Carry out a study into the toxicity of the final effluent from Wheldale sewage treatment works which currently treats most of the trade effluent from Hickson & Welch. The results of such a study will be useful in conjunction with any other toxicity studies which may be required by the Agency on effluents originating from the Hickson & Welch site.

48. Reducing levels of organo-phosphorous and other "dangerous substance" pesticides in the River Aire

Levels of organo-phosphorous pesticides (OPs) in the River Aire downstream of Marley sewage treatment works (Keighley) are currently high and exceed their proposed Environmental Quality Standard. These pesticides have been found to be toxic in studies carried out at the sewage works.

A trader releasing large quantities of OPs to the Marley works is to relocate to the Esholt catchment (Bradford). This sewage works has recently undergone major improvements including the addition of tertiary treatment and the effluent quality has improved dramatically. However, micro pollutants such as OPs still pass through the treatment works to the River Aire.

These pesticides are imported with wool which is used by the textile industry. All wool scouring operations in the catchment are regulated by the Agency under Integrated Pollution Control, and an improvement programme to reduce releases of OPs has been formulated.

<i>ref</i>	<i>proposed action</i>
3.9.7	Carry out a sampling programme at Marley sewage treatment works to assess whether there has been any changes in final effluent toxicity following the relocation of a trader within the catchment.
3.9.8	Carry out toxicity sampling at Esholt sewage treatment works to assess the impact on final effluent toxicity of a trader relocating into this catchment.
3.9.9	Gain reductions in organo-phosphorous pesticides through Integrated Pollution Control.

49. Modelling the flow of low level radioactive materials through sewerage systems

Aqueous releases of low level radioactive materials are routinely made from hospitals and universities. A full radiological assessment is to be undertaken to ensure that there is no risk to the environment or human health. The Agency will model the radioactivity through the Leeds sewerage system if Leeds is selected for trial.

<i>ref</i>	<i>proposed action</i>
3.9.9	Report the results of the exercise and identify any recommendations.

50. Integrating regulation of sewerage and sewage treatment works

Project IRIS (Integrated Regulation in Sewerage) is being trialed in the River Aire catchment around Esholt sewage treatment works in Bradford. The aim of the project is to identify the Best Practicable Environmental Option for reducing levels of the most toxic substances in rivers from all sources in a sewerage catchment by promoting an integrated and holistic solution with the water company and the key industries concerned.

<i>ref</i>	<i>proposed action</i>
3.9.10	Assess how releases to sewer from Agency regulated activities affect water quality in the River Aire.
3.9.11	Review all quality standards for the River Aire downstream of Esholt sewage treatment works and identify the chemicals of most concern and the reduction needed.

3.10 Prioritising LEAP actions

The resources available to carry out LEAP actions will be limited in any one year and there is therefore a need to prioritise the actions proposed. The West Yorkshire Area Environment Group (AEG) have been involved in developing draft proposals for prioritising Aire LEAP actions. This method was developed under the following constraints:-

- non-technical people must be able to understand it
- it must be simple to implement (the effort that goes into prioritising actions must not outweigh the benefits of those actions)
- it needs to be flexible to take account of Agency funding rules.

AEG members suggested a simple scoring system should be used to assess the benefit of each action against a number of criteria. Eight criteria have been developed and these are shown below (listed in no particular order):-

- environmental quality
- the variety of life
- the health of animals and plants
- land use management
- environmental resources
- visual attractiveness
- economic prosperity
- recreational use

More information about each criterion is provided in Appendix 3.

The criteria proposed for measuring benefits are not necessarily of equal value (e.g. an action that would remediate contaminated land and bring it back into use would score 5 on "land use management" but might be considered of greater benefit than an action to create new recreational potential which would also score 5 but under "recreational use"). A weighting should be applied to reflect this.

The Agency wants to include a wide range of people and organisations in the prioritisation of its work, therefore we are seeking wider views on our proposals for prioritising LEAP actions. In particular, we are keen to find out which of the criteria you think are most important (how you think they should be weighted) and whether or not we have missed anything out.

AEG members will be asked to score LEAP actions at the end of the consultation process. All LEAP actions will then be costed and an analysis of costs relative to benefits will be carried out to finally prioritise the actions. Your comments will be taken into account and a prioritised list of actions will be presented in the final LEAP.

4 A BETTER ENVIRONMENT THROUGH PARTNERSHIP

The Agency is limited in both its resources and powers and cannot work alone to protect and enhance the environment. Many other organisations and individuals have responsibilities for the environment and a role to play in improving it. Partnerships, in the form of pooled resources and expertise, can bring about greater environmental benefits than could be achieved by one organisation working alone.

In many cases partnerships are already established, especially with other statutory bodies where there is joint responsibility for managing the environment. We also work with other organisations and voluntary groups on specific projects. Recent improvements in the quality of the catchment has led to the establishment of many voluntary groups eager to assist in improving their local environment. The Agency needs the support of local voluntary and special interest groups and the general public to tackle pollution and enhance the environment.

Across the catchment, all local authorities are assisting their communities in developing local strategies and action plans for sustainable development. The Agency will seek to work with them to protect and improve the local environment. We want our LEAPs to contribute to Local Agenda 21 Action Plans.

We intend this LEAP will help us to achieve even more by working closely with others to address the local issues it identifies. We welcome and encourage suggestions for practical partnership projects and any key partnerships developed through this consultation process will be highlighted in the final LEAP.

THE ROUTINE WORK OF THE AGENCY

On a day-to-day basis, the Agency carries out a huge environmental monitoring and regulatory operation, most of which is to achieve statutory requirements. The aim of regulation is to balance the needs of people and the environment. The Agency works to:-

- save, redistribute and improve river, lake, reservoir and underwater supplies
- prevent and control pollution of air and water
- reduce the risk of harm from contaminated land and bring it back into use
- make sure waste is dealt with safely and legally
- make sure radioactive materials are kept, used and disposed of safely
- make sure flood risks are not created or exacerbated.

Regulating the environment takes place through licensing. The Agency manages licences for abstraction of water from rivers and boreholes, releases to air and water, the carrying and disposal of waste and to carry out work in, over, under or near a watercourse. Within Ridings Area we manage over 1,800 water abstraction licenses, 3,800 consents to discharge to water, 850 waste management licences, over 280 authorisations under Integrated Pollution Control for processes which make releases to air and 460 permits for radioactive materials and waste. We determine approximately 400 applications each year to work on or near water.

We monitor the environment to ensure that pollution is controlled and resources are adequately protected. We regularly monitor the quantity and quality of rivers, estuaries and the sea and check emissions from the processes we regulate. Results are reported on a public register which can be inspected at the Agency's main offices. We run a 24-hour service for receiving reports of and responding to flooding and pollution incidents and emergencies in the air, water or on land. We also work with others to reduce the risk of harm from contamination and to bring land back into good use.

We work to minimise waste and prevent pollution through advice and education, including national campaigns, and through working with other environmental regulators. When necessary, we are prepared to enforce environmental legislation in a tough way. Those who show little regard for the law and who cause blatant and persistent damage to the environment can expect to be prosecuted.

The Agency also has the role of reducing risk to people and the environment from flooding by providing effective defences. Protecting life is our highest priority and to meet this aim we provide a flood forecasting and warning service and discourage development in flood-risk areas. We also manage over 900 km of flood defences and aim to protect and improve the natural environment by promoting flood defences that work with nature.

We are responsible for maintaining, improving and developing fisheries. We regulate fisheries by issuing licences for rod angling and net fishing. We carry out improvements to fisheries by improving the habitat and fish stocks and providing advice to fishery owners. The Agency seeks to ensure that wildlife, landscape and archaeological heritage are protected both in any work we carry out and also in work carried out by others.

Our principal aim for recreation is to protect, improve and promote the water environment for recreational use. We do this by protecting existing use and creating opportunities in the course of our work and by maximising the use of Agency owned sites for recreation.

MEMBERSHIP OF THE WEST YORKSHIRE AREA ENVIRONMENT GROUP

<i>name</i>	<i>representing</i>
Mr F Price	chair
Councillor E Nash	local authority
Councillor M Taylor	local authority
Councillor K Thomson	local authority
Councillor S Brown	local authority
Councillor C Watson	local authority
Dr A Bird	industry
Mrs A Hutson	industry (resigned March 1998)
Mr J Lambert	industry
Mr S Brown	waste (resigned March 1998)
Dr A Maclean	water (resigned April 1998)
Mr J R Lindley	agriculture
Mr F Scholefield	agriculture
Mr A Hague	fisheries
Mr P Hayton	fisheries
Dr J Howden	environment
Dr P Kneale	environment
Mr F Reynolds	recreation and environment
Mr N Stevens	recreation
Mrs P Ward	environment and recreation
Mr D Sharma	community relations

PROPOSED CRITERIA FOR PRIORITISING LEAP ACTIONS**LIST OF CRITERIA AND SCORES****Environmental quality**

<i>score</i>	<i>contribution</i>
5	achievement of local target
3	moderate improvement in quality
1	minor improvement in overall quality

The variety of wildlife

<i>score</i>	<i>contribution</i>
5	benefits nationally protected species
3	benefits species of local conservation interest
1	little direct effect on biodiversity

The "health" of animals and plants

<i>score</i>	<i>contribution</i>
5	specifically designed to improve "health"
3	as a consequence "health" could be improved
1	little benefit for "health"

Land use management

<i>score</i>	<i>contribution</i>
5	brings land back into use
3	improves existing use of land
1	minimal impact on land use

Environmental resources

<i>score</i>	<i>contribution</i>
5	eliminates the need to exploit resources
3	reduces the amount of resource used
1	minor impact on the protection of environmental resources

Visual attractiveness

<i>score</i>	<i>contribution</i>
5	enhances the long-term situation
3	improves the current situation
1	minor additional benefit

Economic prosperity

<i>score</i>	<i>contribution</i>
5	creates new opportunities for economic prosperity
3	enhances economic prosperity
1	little effect on economic prosperity

Recreational use

<i>score</i>	<i>contribution</i>
5	enhances existing recreational use
3	creates new opportunities for recreation without conflict
1	adds little recreational value

DEFINITIONS

Environmental Quality	The state of the environment as measured against targets for chemical and ecological criteria (e.g. air quality, water quality, bathing water quality, groundwater quality) and flood defence standards. This will be influenced primarily by the control of emissions to the environment.
Environmental Resources	The basic features which support the living environment (e.g. water resources and geological resources).
Variety of Wildlife	The abundance and variety of species, habitats and communities.
Attractiveness	Aesthetically valued aspects of the environment. These are usually more subjective and can include landscape, tranquil areas, litter, odour, light and noise.
Health of animals and plants	Safeguarding the well being of people, animals and plants as measured by the state of the "living" environment, e.g. fish health, algal disease, algal blooms.
Economic prosperity	Those that have to invest to achieve better standards need to be reassured their money is being spent to best effect. Equal consideration must be given to maintaining and/or creating employment.
Land use management	Including the condition of land e.g. nature and extent of contaminated land and soil quality, vegetation cover and urban development.
Recreational use	Including uses of the water environment (such as rowing, sailing, windsurfing and angling) as well as the surrounding area (walking, horse riding, cycling).

ABBREVIATIONS

AEG	Area Environment Group
AMP3	Asset Management Plan review period covering the years 2000 to 2005
APEs	Alkyphenol ethoxylates
3Es	Emissions, efficiency and economics (a waste minimisation procedure)
ENTRUST	The body authorising Environmental Trusts set up to receive Landfill Tax Credits
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
IRIS	Integrated Regulation in Sewerage
LEAP	Local Environment Agency Plan
NAQS	National Air Quality Strategy
NSA	Nitrate Sensitive Area
NVZ	Nitrate Vulnerable Zone
OFWAT	Office of Water Services
OPs	Organo-phosphorous pesticides
RE	Rivers Ecosystem classification scheme
SSSI	Site of Special Scientific Interest
UK	United Kingdom
UWWTD	Urban Waste Water Treatment Directive

MANAGEMENT AND CONTACTS:

The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

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For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
AGENCY**