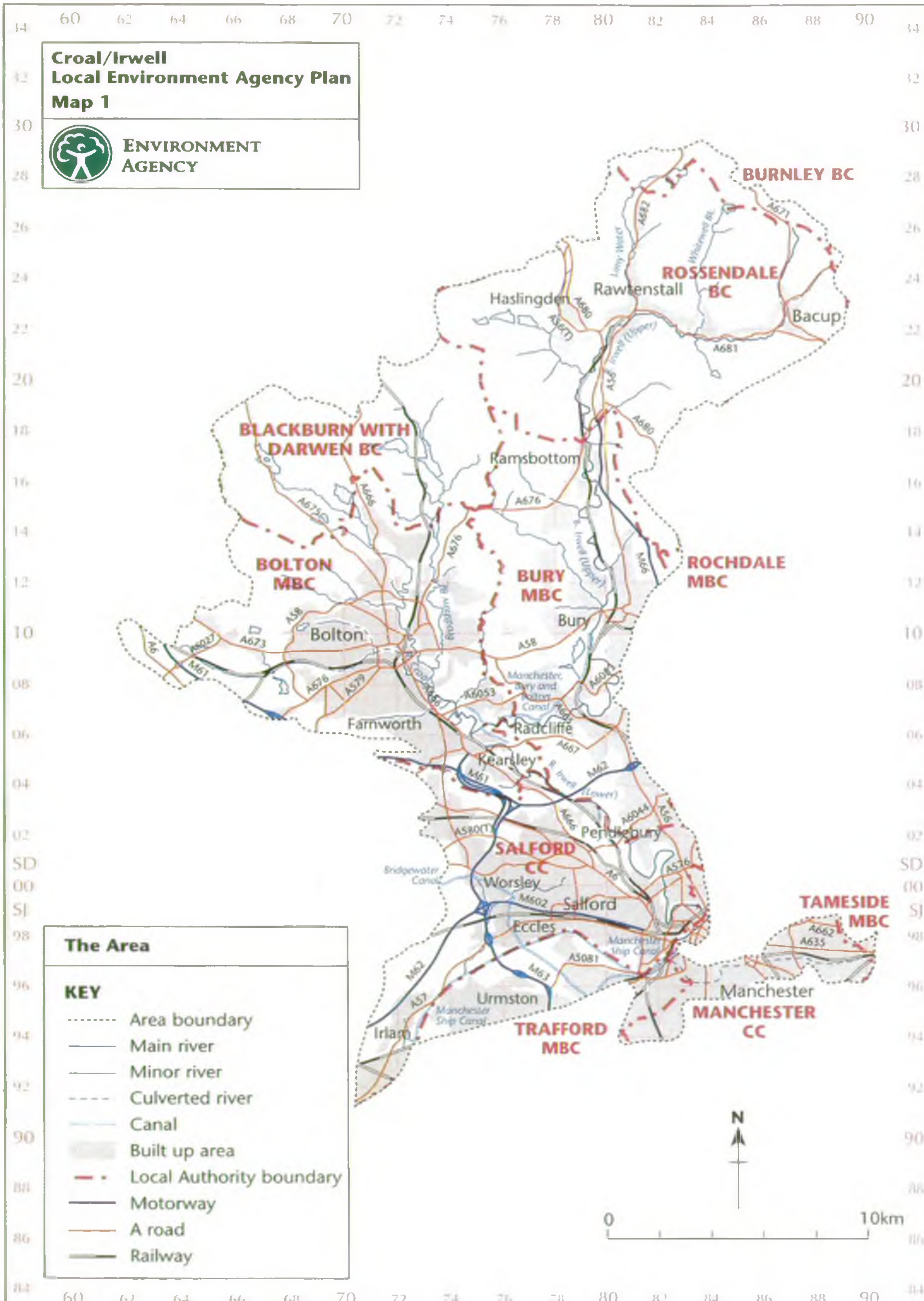
local environment agency plan

CROAL/IRWELL

ACTION PLAN 2000

NOVEMBER 2000

ENVIRONMENT AGENCY


Croal/Irwell
Local Environment Agency Plan
Map 1
Environment Agency
BURNLEY BC
ROSSENDALE BC
Rawtenstall
Haslingden
Bacup
BLACKBURN WITH DARWEN BC
Ramsbottom
BOLTON MBC
BURY MBC
ROCHDALE MBC
Bury
Bolton
Farnworth
Radcliffe
Kearsley
Pendlebury
SALFORD CC
Worsley
Salford
Eccles
Manchester
TAMESIDE MBC
MANCHESTER CC
Urmston
Irlam
TRAFFORD MBC
Bridgewater Canal
Manchester Ship Canal
Manchester, Bury and Bolton Canal
SD
SJ
N
0
10km
The Area
KEY
Area boundary
Main river
Minor river
Culverted river
Canal
Built up area
Local Authority boundary
Motorway
A road
Railway

FOREWORD

Welcome to the Local Environment Agency Plan (LEAP) for the Croal/Irwell catchments. This Action Plan aims to involve all interested parties in working with the Agency to plan for the future wellbeing of the local environment. The document has been produced after public consultation following the launch of the Consultation Draft. We are grateful to the people who responded to the draft document. Their comments have enabled us to evaluate the issues raised in the original report and refine them into an action plan framework which sets out the work that the Agency intends to carry out in partnership with others over the next five years. Actions identified in the plan will be monitored and progress reviewed annually.

I hope you find the LEAP interesting and informative.

George Ager
Area Manager

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CONTENTS

1. INTRODUCTION

The Environment Agency

The Environment Agency (the Agency) has a wide range of duties and powers relating to different aspects of environmental protection and management. These duties together with those areas in which the Agency has an interest, but no powers, are described in more detail in Appendix 1. The Agency is required and guided by Government to use these duties and powers in order to help achieve the objective of sustainable development. The World Commission on Environment and Development (the Brundtland Report, 1987) defined sustainable development as:

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

The Government's revised Sustainable Development Strategy 'A better quality of life' (DETR, 1999) sets out more detailed objectives, based on four broad aims:

- *Social progress which recognises the needs of everyone;*
- *Effective protection of the environment;*
- *Prudent use of natural resources;*
- *Maintenance of high and stable levels of economic growth and employment.*

At the heart of these aims is the integration of human needs and the environment within which we live. Indeed the primary aim of the Agency is to protect and improve the environment and make a contribution towards the delivery of sustainable development through the integrated management of air, land and water.

Our aims are:

- 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 maintain, 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
- to manage water resources to achieve the proper balance between the country's needs and the environment

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.

Taking a long-term perspective will require us to anticipate risks and encourage precaution particularly where impact on the environment may have long-term effects, or when the effects are not reversible. We must also develop our role to educate and inform society as a whole, as well as carrying out our prevention and enforcement activities, in order to ensure continuing protection and enhancement of the environment.

Although we only have duties and powers to protect some environmental resources, we will need to contribute to other aspects of environmental management even where these are, in the first instance, the responsibility of others. We can only do this effectively by working in partnership with and through others in order to set and achieve common goals.

Introducing the Environmental Themes

Our principal and immediate environmental concerns are stated in our national strategy 'An Environmental Strategy for the Millennium and Beyond' (1997). We plan to revise the strategy in 2000, to take account of the Government's revised sustainable development strategy 'a better quality of life' (DETR, 1999).

A key element of our strategy is to group environmental issues in themes that affect all our functions, which represent the Agency's integrated approach to environmental management. Through the corporate planning process we set ourselves a list of specific actions to progress these themes. The actions and targets identified in the corporate plan for 2000/1 are summarised as follows:

Theme	Key Performance Targets Beyond The Millennium	Priority actions in 2000/01
Addressing climate change 	Contribute to the UK Government's target to reduce emissions of six greenhouse gases (agreed at the Kyoto Summit) by 12.5 per cent below 1990 levels between 2008-12.	• Put in place a programme with quantifiable targets for the reduction of methane emissions from landfill operations that are consistent with the Government's UK Climate Change Programme.
Regulating industry 	Implement the new regulatory regime arising from Integrated Pollution Prevention Control (IPPC), ensuring that the environment is at the heart of industry's thinking. Make readily available, good-quality information on emissions to the environment from industry.	• Ensure that all IPC processes and waste sites have an up-to-date Operator and Pollution Risk Appraisal (OPRA) score. • Implement IPPC, bringing early sectors into regulation in line with DETR timetable. • Conduct a review of Sellafield discharge authorisations.
Improving air quality 	Reduce emissions of substances from sources regulated by the Environment Agency causing poor air quality or pollution of the atmosphere in accordance with the UK Government's National Air Quality Strategy (NAQS).	• Incorporate the necessary improvement programmes in authorisations to meet industry contributions to Government targets. We will also report annual emissions of NAQS substances from IPC processes through the Pollution Inventory (PI) from 1 January 2000 and quantify emissions to air from waste management activities.

Managing waste 	Further improve the consistency and efficiency of the waste industry to minimise the environmental impact of waste management activities.	• Use information from the National Waste Survey to generate Strategic Waste Management Assessments, benchmark waste generation rates within industry sectors and inform waste minimisation programmes. • Ensure, as far as possible, business compliance with targets in the Packaging Regulations so as to ensure the UK meets its national packaging recovery and recycling targets in 2001.
Managing water resources 	By 2003, obtain co-operation of others to complete the agreed remedial action to reduce over-abstraction damage at nine SSSIs and 15 other priority sites (identified in the National Environment Programme). Commence a national programme of abstraction management strategy development for England and Wales in 2001/02.	• By December 2000, ensure that national and regional abstraction management strategies are published.
Integrated river-basin management 	By 2002, deliver net class upgrades in water quality to 800 km of rivers. By 2005, improve compliance with River Water Quality Objectives (from 82% currently) to greater than 90%. Play our part in creating a thriving, integrated waterways network. Promote the recreational use of river basins.	• Develop a risk-based approach to enforcement of sites subject to Groundwater Regulations. • By 2001, use the asset management system to develop a prioritised programme of work to maintain and improve navigation assets, as part of waterway development plans for each navigation.
	By the end of 2005, increase bathing water compliance to at least 97 per cent with more bathing waters passing consistently, and achieve a significant improvement in guideline standards, particularly at major holiday resorts.	• By the end of 2000 increase bathing water compliance to 94 per cent, with more waters passing consistently.

Flood defence 	Work with Government and other operating authorities in further developing a seamless and integrated service.	• Agree and implement a finalised set of high-level targets for flood defence with effect from April 2000.
Conserving the Land 	Implement the new legal framework for dealing with contaminated land. Make a significant contribution to the start-up of programmes of remediation at seriously contaminated sites.	• Make a significant contribution to programmes of remediation at 80 seriously contaminated sites.
Managing freshwater fisheries 	By 2003, develop fisheries on recovering rivers by restoring healthy and sustainable fisheries to 700 km of poor quality fisheries.	• Develop pilot Fisheries Development Plans.
Enhancing biodiversity 	By the end of 2003/04, complete a review of existing Agency authorisations to establish their effect on Special Protected Areas (SPAs) and candidate Special Areas of Conservation (cSACs) as required by the Birds and Habitats Directives.	• Complete reviews of all Agency issued consents, licences and authorisations affecting 25 SPAs or cSACs.

Local Environment Agency Plans

We are committed at the local level, to a programme of Local Environment Agency Plans (LEAPs) in order to produce a local agenda of integrated action for environmental protection and improvement.

LEAPs help us to identify and assess, prioritise and solve local environmental issues related to our functions, taking into account the views of the local community. As a result, LEAPs allow us to deploy our resources to best effect and optimise benefit for the local environment. LEAPs are based on areas created by geographical catchments. The Agency's South Area of the North West Region is covered by seven LEAP areas:

- Croal/Irwell
- Lower Mersey
- Mersey/Bollin
- Roch/Irk/Medlock
- Sankey/Glaze
- Tame/Goyt/Etherow
- Weaver/Dane

LEAP Consultation Report

The purpose of the Consultation Report is to enable the Agency, external organisations and the general public to discuss and, where possible, reach a consensus about the management of the area.

LEAP Action Plan

This Action Plan takes into account the results of consultation and the views expressed following the publication of the Consultation Report. It contains a list of actions based on the issues identified in the Consultation Report that take into account costs, timescales and partner organisations. These agreed actions are incorporated into the Agency's annual business plans.

Annual Review

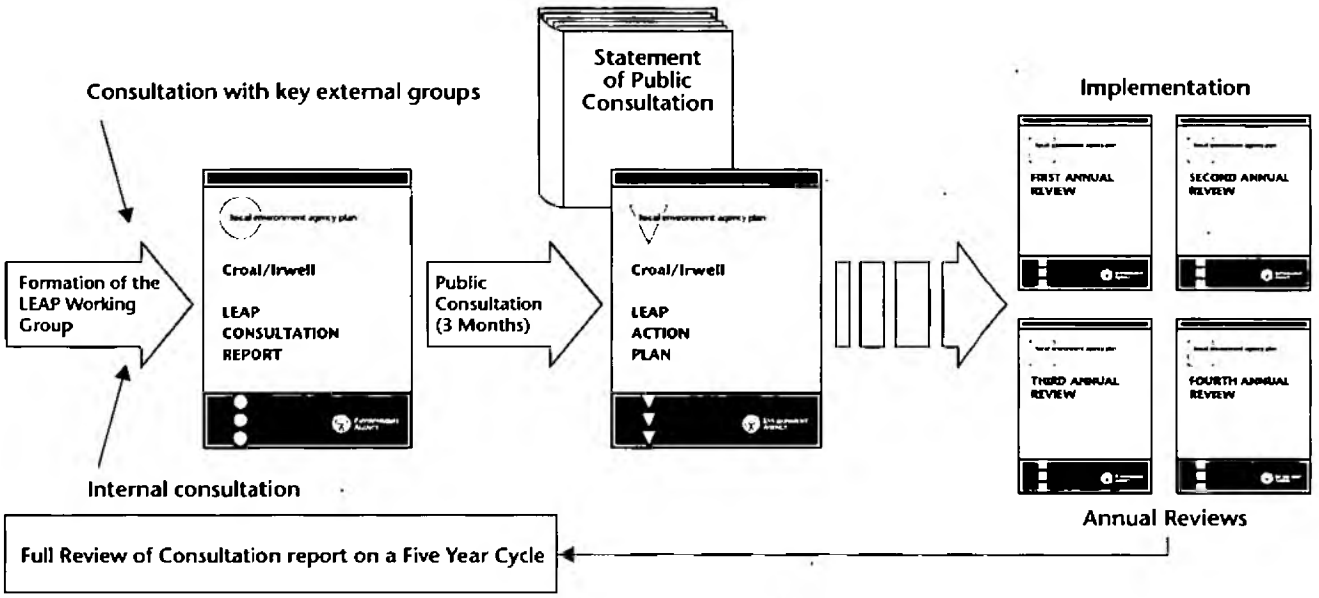
The Agency is responsible, with other organisations and individuals, for implementing the LEAP Action Plan. Progress will be monitored and normally reported annually, through a published review document.

The Annual Review will comprise the following information:

- A comparison of actual progress against planned progress.
- Identification of additional issues and actions to maintain progress in the light of changes in the area.
- Consideration of the need to update the LEAP.

The need for updating will obviously depend on the particular issues of the area. However, updates to the LEAP will normally be undertaken every five years. Key organisations and individuals forwarding comments will receive an annual review to update them with progress.

The LEAP process involves several stages as outlined below:



Partnerships and LEAPs

LEAPs rely largely on identifying and building partnerships to promote action to resolve local environmental issues. The Agency often has no powers to control directly all identified actions. We strive to build partnerships and encourage public participation to raise awareness of environmental issues. Section 5 expands on achieving improvements and protection of the environment through a partnership approach.

Links between LEAPs and Development Plans

The links between development plans and LEAPs are most important; (structure plan and local plan together comprise the development plan). The recognition of LEAPs in development plan preparation is essential, as certain LEAP issues could have an impact on future land use planning and achieving the objective of sustainable development.

Sustainable development is one of the major challenges facing society today. The Government is currently pursuing a number of initiatives that will incorporate the principles of sustainable development more firmly into the planning system. This includes a wider role for Regional Planning Guidance (RPG), to produce a more comprehensive 'spatial' strategy designed to balance needs for development with the need to protect the environment and achieve social and economic objectives. A sustainability appraisal will be an integral part of the RPG process. The RPG is translated at a local level through the structure plans and local plans (the development plans). From now on, development plans have to incorporate sustainable development objectives. The recently published good practice guide *Planning for Sustainable development: Towards Better Practice, DETR 1998* suggests a systematic method to assist Local Authorities in integrating sustainable development into their development plans. As part of this, the longer term and secondary effects of development need to be recognised.

The methodology puts forward aims to place sustainable development at the heart of plan preparation, and integrates it into each stage of the process, resulting in greater emphasis on identifying objectives and indicators as a basis for subsequent monitoring.

The good practice guide states that planners in all circumstances should be aiming to:

- avoid dangerous interference with the **climate** system;
- protect and improve the **quality of air, soil and water**;
- minimise the **use of resources** (e.g. land, building materials, water);
- protect and enhance the **built heritage**; and
- conserve the **diversity of species and habitats**.

Issues

The issues are presented with a number of actions, a target timetable and the identification of responsible parties. Where possible, costs have been outlined for the period covered by the plan. This does not necessarily reflect the total cost of the schemes and is sometimes a projected estimate to be more accurately costed later. This document is produced in good faith, recognising current priorities and funding, both within the Agency and other organisations. Future Annual Reviews will include more targeted costings and specific sites after these have been investigated.

2. CROAL/IRWELL LEAP – AN OVERVIEW

The area covered by the Croal/Irwell Local Environment Plan (LEAP) is the geographical unit covered by the catchments of the Rivers Croal and Irwell. It encompasses nearly 468 km^2 with a population in the region of 635,000 people. About one third of the area is within the County of Lancashire while the remaining two thirds lie within Greater Manchester. It includes the main towns of Bolton, Bury and Salford, Rawtenstall, Bacup, and Haslingden, as well as part of the City of Manchester.

This is a key commercial and industrial region with a long history of continuous settlement dating back to 6000BC when dense woodland covered much of the land. The arrival of the Celtic Iron Age in 500BC meant the hillsides and valley floors could be cleared of woodland and gradually the area became more densely populated. Manchester is an important town that developed under the Roman occupation when the camp of Mancunium existed. In the late eighteenth century the textile industry grew and the rivers in the upper reaches were used as a power source to drive the mills.

The opening of the Manchester Ship Canal in 1894 for industrial transportation accelerated the growth of coal mining, textile and other industries. It is a man-made waterway stretching 58km from Manchester to the Mersey Estuary at Eastham. It acts as a conduit for the majority of rivers in the Mersey Basin and, therefore, also receives discharges of sewage and industrial effluents. Whilst the water quality of these rivers has improved, further investment is required to meet the long-term quality objectives of these rivers and their tributaries.

The terrain is not all industrial and many different landscapes exist, from pasture and heather moorland dissected by narrow, steep sided valleys to the north, rough grazing and improved pastures dotted with mines, quarries and mill lodges further south, through to flatter, low lying land which is heavily urbanised.

Canals in this LEAP area include the Bridgewater Canal, the Manchester Ship Canal and the Manchester, Bury and Bolton Canal. Canals are also important recreational features and link in to the network of recreational sites, which become more widespread in the open land to the north of Bolton and Bury. Heritage and recreational projects are taking place such as the Irwell Sculpture Trail which follows a 30 mile footpath and the 'Steam, Coal and Canal' project based around the Bridgewater Canal Linear Industrial Heritage Park.

The area supports nine Sites of Special Scientific Interest (SSSI's). Eight of these are designated for their biological and/or ecological value, (for example, Red Moss Site is an SSSI within the Croal catchment) and Ash Clough, is a geological SSSI within the Irwell catchment.

There are approximately 142 sites that have been designated by Local Authorities for their nature conservation value. These are known as Sites of Biological Importance (SBI) in Greater Manchester and Biological Heritage Sites (BHS) in Lancashire. These sites are recognised as being of importance for nature conservation in a county, district or local context for the habitats, plants or animal species they support.

The Environment Agency has a duty to promote and enhance the conservation of the environment in all its activities and those of third parties. It does this by assessing, minimising and mitigating the ecological impacts of its own maintenance and engineering schemes and influencing local authorities, developers, landowners and other bodies through the planning and regulatory system and general liaison. We will seek to protect all designated sites, the wider countryside and all habitats of local importance associated with watercourses, ponds and wetlands, and seek to influence outside organisations to protect terrestrial habitats of importance.

Open areas around urban and suburban developments are important, not only for leisure activities, but also because urban open space acts as a buffer zone, protecting the valuable rural landscapes from increased public pressure. The presence of watercourses is especially important as they are sometimes bordered by green open space that is free from development. This creates opportunities for public access and informal recreation, as well as providing habitats for wildlife.

Open space provisions range from areas of green belt land and urban parks, to the larger country parks such as Jumbles, Moses Gate, Burrs and the Prestwich Forest Parks.

Jumbles Country Park is located along Bradshaw Brook, north of Bolton. Most of the park is occupied by Jumbles Reservoir (55 acres), the majority of which is leased to the Civil Service Sailing Club for leisure sailing and for organised events such as dinghy racing. The remainder is available for use (from North West Water) by organised groups for activities like canoeing, sailboarding and sub-aqua. The park has a network of footpaths, an information centre, facilities for the disabled and a nature conservation area. Part of the reservoir is a coarse fishery with over 60 pegs. Guided walks, rambles and activity days are frequently organised by West Pennine Moors Information Service in conjunction with the Ranger Service and the Ramblers Association.

Prestwich Forest Park, adjacent to the River Irwell is made up of a number of different sites including Philips Park, Drinkwater Park, Waterdale and Prestwich Clough. The area covers approximately 200 hectares and much of it is designated as Sites of Biological Importance (SBI). The area offers walks (some guided by the Croal Irwell Warden Service) and cycling routes, with the Outwood Trail being used for horseriding. Orienteering courses are located at Philips Park and Waterdale and fishing takes place close by at Dams Head and Kingfisher Lodges.

3. PROGRESS AND IMPLEMENTATION SINCE THE PUBLICATION OF THE CONSULTATION REPORT

The Consultation Process

The Croal/Irwell LEAP Consultation Report was published October, 1998, and a three-month period for formal consultation followed. The Statement of Consultation, February 1999 provides a list of respondents and gives a brief summary of the comments received. (See page 80). All comments have been taken into account before finalising this action plan.

The intervening period between publication of the Consultation Report and this Action Plan has given an opportunity to refine the issues further and build on partnerships. Progress has been made in resolving some of the issues identified in the Croal/Irwell Consultation Report.

Implementation and Priorities

LEAPs as Local Environment Agency documents, are produced by the Environment Agency Area Office and are focused on the local environment. However, it is important to remember that the Agency is a national non-departmental government organisation and many area work priorities are set at a national level. New national priorities emerge on a regular basis through changes to legislation e.g. the recent introduction of the Groundwater Regulations 1999, or through the application of experience learned elsewhere.

A recent example of the latter is in respect to the flooding that occurred in the Midlands during Easter 1998. As a result of an independent report, and recommendations by MAFF, the Agency has reviewed its working practice and priorities for flood defence across the country as a whole, not just in the region affected. This has enabled the Agency to utilise lessons learned in one area, to benefit all areas across the country.

The knock-on effect of national priorities being implemented at a local area level can be seen in the amendments, since the publication of the Consultation Report, to some of the issues in this document.

These issues illustrate how Area priorities have to be reviewed, on a regular basis, to reflect the over arching national priorities in line with ministerial directives. Regulation continues as a high priority and part of our routine every day work.

In addition to changes in legislation and experience applied from elsewhere, there is significant work underway to update the Agency's corporate strategy and environmental strategy. This will have an effect in terms of the Agency's priorities and work programmes and consequently the implementation of LEAP actions over the next five years. The corporate plan, which is published annually, outlines what the Agency hopes to deliver with the funds it has available from charge payers and central and local government. In determining how this money is allocated, the Agency takes account of the costs and benefits to society as a whole.

There is a well-established link, through our business planning process, between the Corporate Strategy, Environmental Strategy, Corporate Plan and LEAPs. Nevertheless, at this point in time, this Action Plan should be seen as a statement of what we hope to do over the next five years. It is very much a working document, and the issues and actions will need regular review to reflect the changing demands outlined. It also means that in a time of limited resources, that difficult decisions may have to be made when reviewing which LEAP actions to implement against national, regional and area priorities, anticipated timescales, and the local communities' expectations.

4. ISSUES

ISSUE 1 – THE NEED TO PROTECT GROUNDWATER QUALITY IN TRAFFORD PARK

Background

Historically, the Permo-Triassic sandstone aquifer, which underlies the Trafford Park area, has been heavily exploited for industrial water supply purposes, from a number of deep boreholes. This has caused a local depression in the water table and up flow of poor water quality (saline) groundwater from depth, as businesses have used this resource.

This problem was recognised when licensing controls on abstractions were introduced in the 1960's. Since then there has been a presumption against additional groundwater abstraction in Trafford Park. Over the last two decades there has been an overall reduction in the number of abstractors and abstraction quantities.

Local Perspective

Over abstraction has lead to a deterioration in groundwater quality and may also affect abstraction licence holders' ability to extract to the limit of their entitlement. The situation is not sustainable in the long term.

The groundwater quality near the surface is also of poor quality, caused by contamination from past industrial processes and practices as well as having an elevated iron content, possibly derived from recharge from the Manchester Ship Canal.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Investigate and monitor the problem and establish priorities for action.	EA		£80k (a)	£25k	£25k				**Regional** Water Resources
Abstract only sustainable yields and promote good practice.	EA, Licence Holders		Staff time	•	•	•	•	•	**Regional** Water Resources

(a) Proposed scoping study 2000/01 followed by detailed investigation in 2001/02. Depends on money being available to allow the project to proceed.

ISSUE 2 – THE NEED FOR THE EFFECTIVE USE OF WATER RESOURCES TO REDUCE ENVIRONMENTAL IMPACTS

Background

Water is an essential resource used by agriculture, industry and for potable supply.

Agricultural demand is generally met through direct abstraction from rivers, streams and groundwater. In addition to these options industry also uses water from the public supply system to meet demand. Customers using water and losses through leakage from the distribution network generate this demand. By introducing waste minimisation, demand management measures and effective agricultural use, the need for water can be reduced.

The level of leakage losses varies across North West Region; however such leakage means that the system has to be oversupplied to ensure a secure supply to customers. North West Water Ltd have allocated £45 million per annum, budgeted to address this problem across the North West and a proportion will be spent in this LEAP area.

Local Perspective

The Agency has engaged a Demand Management Co-ordinator to encourage the use of demand management techniques within the region and the LEAP area. In the assessment of changes to abstraction licences and in the determination of any new abstraction licences, the efficient use of water is promoted, by ensuring that the quantities applied for are justifiable relative to the use of the water. The Agency also strives to continually educate abstractors and raise awareness in terms of efficient water use.

The Agency further promotes waste minimisation for industry as a means of reducing demands on all aspects of the environment. In addition North West Water Ltd, Department of Trade and Industry (DTI) and the Department of the Environment, Transport and the Regions (DETR) have produced literature and offer help and guidance to raise awareness of these problems. DTI & DETR currently jointly fund the Environmental Technology Best Practice Programme (ETBPP) which offers help and guidance to industry in demand management techniques. For free information and advice call the Environment and Energy Helpline on 0800 585794.

North West Water Ltd are reducing leakage through a comprehensive programme of improvements, as well as a public awareness campaign including a free telephone 'Leakline' for reporting leaks (Telephone 0800 330033). The level of leakage in the Croal Irwell LEAP area has dropped from 19.4% of distribution input (April 1998 to March 1999) to 17% of distribution input (April 1999 to March 2000). This level of reduction will be addressed into the future through the OFWAT leakage targets; for the period 2000-2001 the regional leakage target is 465Ml/d and for the period 2002-2003 the target is 450 Ml/d. (Megalitres per day).

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Reduce leakage to economic levels.	NWW Ltd	EA	Cost unknown	•	•	•	•	•	**National** Water Resources
Continue demand management techniques.	NWW Ltd	EA	Staff time	•	•	•	•	•	**National** Water Resources
Reduce domestic leakage and demand.	General Public, NWW Ltd	EA	Staff time	•	•	•	•	•	**National** Water Resources

ISSUE 3 – NON-SUSTAINABLE DISCHARGE FROM BELMONT RESERVOIR

Background

Belmont Reservoir is not used for public water supply purposes. There is a lack of data concerning the exact capacity of the reservoir and the reliable yield of the catchment making it difficult to establish a sustainable operating regime for the reservoir during prolonged dry periods.

This information needs to be established in order to ascertain a sustainable operating regime for the reservoir and to try to balance the, often conflicting, needs of downstream water uses, for example, industrial abstractions and ecological needs of the river, as well as the recreational uses on the reservoir itself.

Local Perspective

When established, various options can be considered as to how varying operating regimes will impact on the various needs of Belmont Reservoir, Eagley Brook and its users. In the longer term this may result in an application having to be made to vary the original statute. This would need consultation with all affected parties at an early stage.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Commission survey to establish capacity and reliable yield of reservoir.	EA NWW Ltd		£10k (a)		£10k				Area Water Resources

(a) Survey is estimated to cost approximately £10k and would depend on money being available to allow the project to proceed.

ISSUE 4 – THE NEED FOR CONTINUED HABITAT IMPROVEMENT AND PROTECTION OF EXISTING WILDLIFE HABITATS TO CONSERVE AND ENHANCE BIODIVERSITY

Background

The 1994 United Kingdom Biodiversity Action Plan set out a strategy for implementing the UK's commitment to biodiversity.

The plan emphasised policy integration and partnership between interested organisations. These interests were brought together in a steering group which reported in 1995 and identified the need for some 400 action plans for Britain's most threatened species and a further 40 habitat plans for our most vulnerable areas. To be implemented successfully, these national plans are being translated at a local level through Local Biodiversity Action Plans (BAPs).

The Agency is a member of the North West Biodiversity Forum which produced the NW Biodiversity Audit in 1999 and the Greater Manchester Biodiversity Action Plan. The Agency will have a key role in delivering some of the targets in the local habitat and species BAPs that will be produced. While the local BAPs are being produced, there is a continued need to protect, improve and monitor existing habitats and species important to the LEAP area.

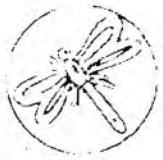
Local Perspective

Agency action within the LEAP area will be targeted at the Water Vole (Action 3), Great Crested Newt (Action 4) and Blanket Bog (Action 5), which are known to occur within the LEAP area. The Agency is either lead or partner contact in the National Biodiversity Action Plan.

Within the LEAP area the diversity of natural features and habitats, from moorland to meanders, hedgerows to hay meadows, ponds and ex-industrial reservoirs, need to be conserved and enhanced to sustain viable populations of wildlife species. Wetlands, bankside trees, riffles and pools in rivers all contribute to biodiversity.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Continue to contribute to the development of Biodiversity initiatives for example LBAPs and Species Action Plans.	LA's, GMEU, EN, RSPB, Specialist local groups	EA	Staff time (b)	•	•	•	•	•	National FER
Work in partnership with other organisations to protect key species and habitats identified from LBAPs.	EA	Pond Life, Local wildlife organisations and specialist groups	Staff time as and when funds become available (b)	•	•	•	•	•	National FER
Monitor and record the status and distribution of the Water Vole within the area in order to protect and enhance populations.	EA, EN		(a)	£1k					National FER
Monitor and record the status and distribution of the Great Crested Newts within the area in order to protect and enhance populations.	GMEU, Pond Life, EN, EA	LA's, Local wildlife organisations and specialist groups	(a)						National FER
Work in partnership with other organisations to promote the restoration of vulnerable landscapes and habitats and identify opportunities for habitat creation.	EA	LA's FWAG, MAFF, CPRE, Wildlife Trusts, Landowners, Developers	Staff time as and when funds become available (b)	•	•	•	•	•	National FER

(a) Funds may be made available for specific surveys.
(b) Funds may be made available for partnerships. (These will be reported on in future reviews of this plan).



ISSUE 5 – THE ADVERSE ENVIRONMENTAL IMPACT OF NON-NATIVE PEST SPECIES

Background

Many species of non-native plants and animals now thrive in Britain. In some cases their presence has had no apparent effect of the established native flora and fauna. Some species, however, have proved highly successful in out-competing native species, particularly where their spread is aided by waterborne transport.

The most persistent invasive plant species include Giant Hogweed, Japanese Knotweed and Himalayan Balsam, which are common within the LEAP area. It is an offence to encourage the spread of Japanese Knotweed and Giant Hogweed in the wild under the Wildlife and Countryside Act 1981.

Animals such as Mink have also added to the problems faced by native species such as water voles, as they have proved successful in spreading rapidly along river corridors.

Local Perspective

Giant Hogweed is present in extensive stands along the River Irwell at Salford and on Eagley Brook in the Croal catchment.

Japanese Knotweed and Himalayan Balsam have adapted particularly well to the disturbed, often polluted, urban environment common in parts of the LEAP area, and have come to dominate stretches of rivers such as the Irwell. The conservation value of designated wildlife sites may be threatened by the spread of dense stands of these species.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Advice on use of herbicides for control of Japanese Knotweed and Giant Hogweed, where they occur near water e.g. along the River Irwell at Salford and on Eagley Brook.	EA	British Waterways, Local Authorities	Staff time	•	•	•	•	•	**National** All functions
Increase public awareness of impacts of invasive species on local biodiversity.	EA	GMEU, Local Authorities	Staff time ongoing	•	•	•	•	•	**National** All functions

ISSUE 6 – LACK OF NATURAL RIVER FORM AND WILDLIFE HABITATS DUE TO HISTORIC CHANNELISATION AND MODIFICATION OF WATERCOURSES

Background

Extensive modification to the physical characteristics of a watercourse can reduce the ecological value of its bank and channel habitats.

The Environment Agency works to protect remaining areas of green river corridors or geomorphological diversity when carrying out its statutory duties and during its regulatory activities. Some man-made features such as stone walls and buildings along rivers can be of historic or cultural value.

Where possible we aim to work with partners to rehabilitate or enhance degraded rivers by, for example, reintroducing meanders, weir removal, tree planting or reinstatement of riffles.

Local Perspective

Some modifications have produced extensive lengths of unattractive, uniform watercourses showing little geomorphological activity e.g. River Croal; Bolton town centre.

Many watercourses in the area have been straightened, deepened, widened and their river corridors narrowed and modified to the detriment of wildlife, landscape and amenity. Unattractive uniform watercourses bringing problems such as siltation replace diverse natural riverine habitats. For example, Middle Brook, Croal catchment and Lower Irwell, Salford.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify and prioritise stretches suitable for enhancement and rehabilitation.	EA	LAs, GWT, Landowners	Staff time ongoing	•	•	•	•	•	National Flood Defence
Implement enhancement and rehabilitation schemes as funds become available or in conjunction with other schemes.	EA	LAs, GWT, Landowners	Cost unknown. As and when funds become available						National FER
Research approaches and techniques for enhancement and rehabilitation.	EA	River Restoration Centre	Staff time	•	•	•	•	•	National FER

ISSUE 7 – THE NEED TO UNDERSTAND HOW TO MANAGE FISH STOCKS UNDER CONDITIONS OF IMPROVING WATER QUALITY

Background

There has been a lack of knowledge of the effects of water quality on the migration and production of coarse fish. As more and more river stretches are becoming habitable by fish, it is not only important to better understand the process of environmental recovery in urban rivers, but the information can be used to enhance current and initiate new practices in fisheries management.

Local Perspective

A project was set up to investigate this issue on the lower reaches of the River Irwell and the upper end of the Manchester Ship Canal. This project is due to report in 2000/2001.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Initiate a project to include: a. investigate the relationship between organic pollution, invertebrates and fish b. review the effects of oxygen concentrations on fish movements c. quantify the significance of these movements on the fishery d. investigate ways to mitigate against the development of water quality barriers.	EA	NWW Ltd Mersey Basin Campaign, APEM	£50k	£30k	£20k				Area FER

ISSUE 8 – IN-RIVER STRUCTURES CAUSING FLOOD RISK, RESTRICTED FISH PASSAGE, MIGRATION AND REDUCED RECREATION USE

Background

Structures, such as weirs and sluices, can cause major obstructions to the migration of fish and to recreational users including canoeists and the users of other small craft. If fish are restricted from free movement within the river system they are unable to migrate to their spawning areas. This will reduce spawning success and hence fisheries potential and sustainability.

Inappropriate new structures in the watercourse are discouraged. However, the replacement or renovation of existing weirs is sometimes necessary especially when a structure is considered unsafe. Where appropriate, replacement or renovated structures should incorporate passes or bypass channels to allow fish migration and the passage of small watercraft, therefore enhancing the fisheries and recreational potential.

Occasionally it may be possible to remove the structure altogether. In these cases the historical significance and the overall effect on the river environment, e.g. the beneficial oxygenating effects of weirs, must be considered.

Local Perspective

Limy Water Channel Improvements

As part of the Agency's Heavy Maintenance programme, a weir design is in progress for the Limy Water Channel which will allow the resident population of brown trout to migrate up and downstream over the new structure.

The final design takes the form of concrete interlocking walls placed across the river with infill inbetween. A fish pass has been incorporated into the design that will leave a lower weir opening 600mm wide by 20 mm deep. It produces a pool 2000mm by 600mm deep immediately behind the downstream section of the weir.

Weirs reduce the velocity of the flow and lessen the scouring effect of the river on the walled channels along the section.

Work will also be carried out to remove the build up of shoal material along the watercourse, especially at the downstream section upstream of Constable Lee Bridge, to increase the hydraulic capacity of the channel.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Routine monitoring of fish populations around in-river structures to determine impact on fish movement.	EA	Landowners, LAs	Staff time	•	•	•	•	•	National FER
Investigate and collate information on existing structures, assessing the full impact on recreation, fisheries and fishing. Prioritise and seek funding for restoration/ enhancement schemes.	EA	LAs, Mersey Basin Campaign, British Canoe Union, NW Rowing Council, English Heritage, Angling Clubs, Riparian Owners	Cost unknown	•	•	•	•	•	National FER
Investigate and assess flood defence activities and the potential to remove in-river structures e.g. replacing them with riffles, or installing fish/ canoe passes.	EA	Landowners, LAs	Cost unknown. As and when funds become available	•	•	•	•	•	National FER
Install a weir at Limy Water. Remove build-up of shoal material along the watercourse.	EA		£29k	•					Area FER

ISSUE 9 – ADVERSE IMPACT OF CONTAMINATED DISCHARGES TO THE SURFACE WATER SYSTEM

Background

Most developments built in the last 30 years are drained by two separate systems. The surface water system drains uncontaminated water from roads, roofs, etc and discharges it directly into a local watercourse. The foul system drains contaminated water from toilets, washing machines, showers, sinks, etc and trade effluent from industrial premises and convey it to a wastewater treatment works.

Problems with this system can occur when foul drainage is wrongly connected to the surface water drainage system. At homes this often happens when an extension is built, when a new water-using appliance is installed or even when the house is built. Furthermore, in some cases entire sewers can be wrongly connected to surface water drains. Other problems can occur where the two drainage pipes run close together and share dual manholes. Damage to the dividing wall in dual manholes, or blockages in the foul sewer can result in foul drainage entering the surface water pipe. All of the above can result in the contamination of the surface water drainage system and result in significant pollution of the receiving watercourse into which it is discharged. These problems are known as contaminated surface waters (CSWs) or wrong connections.

The Environment Agency undertakes the identification and prioritisation of CSWs. A list of CSWs, ranked by the impacts they have on their receiving watercourse, has been produced for the North West region. The task of tackling CSW problems by identifying and rectifying wrong connections, dual manhole problems, etc. is largely undertaken by local authorities. It is funded by North West Water Ltd. Negotiations between the Agency and NWW Ltd have secured a commitment to tackling a significant number of the top priority CSW problems by the year 2000.

In an attempt to publicise the problem of CSWs, the Agency has produced a leaflet entitled 'Making the Right Connection', which explains how wrong connections occur, why they result in water pollution and whose responsibility it is to put them right.

Local Perspective

The CSWs at Thornhill Drive/Ash Grove, Walkden and Whittle Street/Springside Avenue, Walkden have recently been corrected under this project, and the CSW at Kensington Drive, Bury may be undertaken if there are cost savings elsewhere in the project. The CSW at Broadway Estate, Irlam has recently been tackled outside of the project.

A priority CSW is located in the Croal/Irwell LEAP area at Staghills Estate, Rawtenstall. Following the announcement on the scope of the AMP3 programme made by the Environment Minister in March 1999, it is anticipated that this CSW will be tackled in the period 2000 to 2005.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Assess the effectiveness of the work carried out to rectify the CSW problems at Thornhill Drive/Ash Grove, Walkden, Whittle Street/ Springside Avenue, Walkden and Broadway Estate, Irlam.	EA		£0.5k	•					Area EP
If sufficient cost savings are made elsewhere in the CSW project, undertake work to rectify the CSW problems at Kensington Drive, Bury.	NWW Ltd	Bury MBC	Cost unknown	•					Area EP
Undertake work to rectify the wrong connection problems at Kensington Drive, Bury and at Staghills Estate, Rawtenstall under AMP3.	NWW Ltd	Bury MBC, Rossendale BC	Cost unknown		•	•	•	•	Area EP
Identify and prioritise new CSW problems.	EA		Staff time	•	•	•	•	•	Area EP
Raise public awareness of wrong connections, including promotion of the Agency leaflet 'making the right connection'.	EA		Staff time	•	•	•	•	•	Area EP

ISSUE 10 – ADVERSE IMPACT FROM OVERFLOWS ON THE SEWERAGE NETWORK

Background

In much of the Croal/Irwell LEAP area, particularly the urbanised areas, foul and surface water drainage is conveyed together, to a wastewater treatment works, in combined sewers. To prevent sewer flooding during storms, relief combined sewer overflows (CSOs) are provided on the sewerage network. These are designed to operate only during heavy rainfall, when both the discharge is dilute and there is significant dilution available in the receiving watercourses.

The increase in residential and commercial development has resulted in greater flows into the sewerage system. In some areas the combined sewer capacity is inadequate to deal effectively with this increased flow and consequently CSOs operate more frequently and during periods when the dilution in the receiving watercourse is inadequate.

CSO and Emergency Overflow (EO's) discharges are regulated by consents issued by the Environment Agency.

CSO discharges can have an adverse impact on the downstream water quality. This impact can affect both the organic and/or aesthetic quality of the watercourse.

Discharges from sewers can also occur due to blockages and from emergency overflows (EOs) following the breakdown of a sewage pumping station. Such discharges should be infrequent, but can have a particularly significant adverse impact on water quality because they may occur during dry weather, when dilution in the watercourse is low.

Local Perspective

Currently 107 of the 346 sewer overflows (CSOs and EOs) within the LEAP area are considered to be unsatisfactory. Expenditure by NWW Ltd. to improve the performance of unsatisfactory sewer overflows is determined during the Periodic Review and set out in an Asset Management Plan (AMP). Following the announcement on the scope of the AMP3 programme made by the Environment Minister in March 1999, it is anticipated that all the CSOs currently designated as unsatisfactory will be improved in the period 2000 to 2005.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Improve, under the AMP3 programme, the performance of all CSOs currently designated as unsatisfactory.	NWW Ltd	EA	NWW Ltd	•	•	•	•	•	National Env. Planning
Assess the impact on the sewerage network of significant new housing and industrial developments and ensure that developers contribute to the cost of sewerage improvements, where appropriate.	EA	NWW Ltd, LAs, Developers	Staff time as and when funds become available	•	•	•	•	•	Area EP
Identify and prioritise new unsatisfactory CSOs.	EA		Staff time	•	•	•	•	•	Area EP
Raise public awareness, for example, through the 'bag it and bin it' campaign, of the potential impact of flushing disposable items down the toilet.	EA	Tidy Britain Group, Women's Environmental Unit, Manufacturers	Cost unknown	•	•	•	•	•	Area EP
Encourage better source control of surface water run-off into the sewerage system.	EA	NWW Ltd, LAs	Staff time	•	•	•	•	•	Area EP

ISSUE 11 – ADVERSE IMPACT FROM INDUSTRIAL SITE AND TRADING ESTATE DRAINAGE

Background

There are a large number of industrial and trading estates within the Croal/Irwell LEAP area. The drainage arising from some of these sites can become contaminated as a result of wrong connections, accidents, negligence, and the poor storage and handling of oil, chemicals and waste. In addition the run-off from estate roads can become contaminated as a result of their use by heavy goods vehicles.

The wrong connections which occur on some sites involve contaminated water, such as washwater, process effluent, yard washing, kitchen and toilet waste, etc. being incorrectly connected to the surface water drainage system.

Guidelines on how to avoid pollution from industrial and trading estates can be obtained from the Environment Agency.

Local Perspective

Permethrin contaminated drainage, discharged from Kearns at Waterfoot near Rawtenstall, has historically had a significant impact upon the water quality in Cowpe Brook and the River Irwell. Kearns have recently undertaken a considerable amount of work to minimise the release of permethrin contaminated drainage from one of their dye houses. Similar work at their other two dye houses is expected to take place over the next few years. See **Issue 23** for details of the operational improvements Kearns have undertaken to reduce the amount of permethrin they discharge to sewer.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Continue to monitor the impact, on Cowpe Brook and the River Irwell, of permethrin contaminated drainage from Kearns.	EA		Staff time	•	•	•	•	•	Area EPP
Undertake work to further reduce releases of permethrin contaminated drainage into Cowpe Brook.	Kearns	EA	Cost unknown						Area EPP
Identify potential pollution sources and pursue the implementation of good site operation and waste minimisation practices.	EA	Site Owners and Operators	Staff time	•	•	•	•	•	Area EPP

ISSUE 12 – ADVERSE IMPACT OF URBAN RUN-OFF AND DRAINAGE FROM MAJOR ROADS AND MOTORWAYS

Background

The run-off of rainwater from hard standing areas such as roads, roofs, car parks, etc is much quicker than would occur naturally, and this can lead to flooding and erosion problems. The flashy nature of this flow means that during periods of dry weather the flow feeding urban watercourses can be significantly reduced.

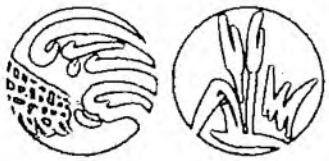
In areas with known flooding problems, methods for attenuating the run-off may be required. Methods include underground storage, flow control devices, permeable pavements and car parks, etc. Vegetative attenuation systems, such as grass swales and attenuation ponds, can also be used and these have additional benefits in that they can help to reduce pollution and can become attractive landscape and ecological features.

Local Perspective

Drainage from major roads and motorways is often contaminated with oil, grease, de-icing materials, sediments, litter, and some of the pollutants found in vehicle exhausts, such as lead, chromium and nickel. These contaminants can build up on roads during dry weather such that when it rains the initial flush of run-off is highly contaminated.

On new road construction schemes, the Agency recommends that pollution interceptors be incorporated in the surface water drainage system. In addition to improving the quality of general run-off, interceptors can also assist in controlling polluting spillages that may occur following road traffic accidents.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Promote the use of flow attenuating methods, particularly vegetative systems.	EA	LAs, Highways Agency	Staff time ongoing	•	•	•	•	•	National EPP
Promote the installation of pollution interceptors on new road construction schemes.	EA	LAs, Highways Agency	Staff time ongoing	•	•	•	•	•	National EPP



ISSUE 13 CONTAMINATED RUN-OFF FROM SPOIL HEAPS AND DISCHARGES FROM ABANDONED MINES CAUSING POLLUTION OF SURFACE AND GROUNDWATER

Background

There are a number of abandoned mines within the Croal/Irwell LEAP area, particularly in the Rossendale area.

When mines are closed, water may flood the workings and this can potentially result in the contamination of surface and groundwater. This contamination is often in the form of ochre, a reddish-brown suspension caused by the oxidation of iron minerals.

Ochre can have a significant impact on the quality of the rivers and canals. This can be both aesthetically through discoloration, and biologically by inhibiting the respiration of fish and aquatic invertebrates. Ochre can also coat the bed of the watercourse, filling the gaps between stones, and thereby destroying the habitat of invertebrates and the spawning ground of fish. Low invertebrate numbers means there is less food available for fish, birds and bats. In addition to iron, ochreous discharges may contain other toxic metals that can also have a detrimental impact on the aquatic ecosystem.

Local Perspective

The Environment Agency has produced a national, prioritised list of abandoned mine sites which cause significant pollution. Within the Croal/Irwell LEAP area, the Old Meadows, Deerplay and Duke of Bridgewater abandoned mines are included in this list. At each of these sites, studies have been undertaken to determine the scope of the problems and identify solutions to rectify them. Funding is then sought to bring about the required level of improvements.

The Coal Authority have recently installed facilities to treat the contaminated surface water arising from the Old Meadows abandoned mine at Higher Broadclough near Bacup, and it is expected that in the near future they will install treatment facilities at the Deerplay Moor abandoned mine at Weir near Bacup.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Undertake biological and chemical monitoring to assess the effectiveness of the treatment facilities installed at Old Meadows abandoned mine.	EA		Staff time	•	•	•	•	•	Area EPP
Install facilities to treat the contaminated surface water arising from the Deerplay Moor abandoned mine.	Coal Authority		Cost unknown						Area EPP
Pursue funding to install facilities to treat the contaminated surface water arising from the Duke of Bridgewater and other abandoned mines.	EA	Coal Authority	Staff time	•	•	•	•	•	Area EPP

ISSUE 14 PROTECTION OF PROPERTIES AT RISK OF FLOODING

Background

The Environment Agency aims to reduce the risk to people and property of flooding from rivers and the sea. Due to urban developments having extended into the floodplains in the LEAP area, there are a large number of properties that are at risk from flooding or are protected by flood defences.

The majority of existing flood defence works were constructed by and for the benefit of the riparian owners. They are responsible for maintaining these works so that they do not increase the risk of flooding to others. Where actual flooding has occurred the Environment Agency will investigate the causes of the flooding and consider exercising its permissive powers to reduce the flooding risk.

In assessing whether the risk of flooding is acceptable or not, the land use i.e. density and type of development, and how often flooding is predicted to occur, is taken into consideration. The majority of 'Main River' in this LEAP area passes through either 'high density urban' or 'medium density urban' areas where the target flood defence standards are for predicted flooding to occur only for 1 in 100, or 1 in 75, year flood events respectively. Where these minimum standards are not achieved the Environment Agency will consider the three following possible courses of action:

- Improvements to flood defences
- Implementation or alteration of a maintenance plan
- Development of Flood Warning Procedures for the affected area.

Within the LEAP area the existing maintenance regime consists of both planned and emergency works which are undertaken to maintain current levels of service and minimise the impact of blockages and failure of defences. Individual maintenance activities are constantly reviewed to ensure that the benefits achieved exceed their cost, appropriate prioritisation of the available resources and any adverse effect on the environment is minimised.

Protection of the floodplain from inappropriate development proposals is achieved by encouraging Planning Authorities to restrict development in floodplains. To assist in the Planning process the Agency has developed a policy document 'Policy and Practice for the Protection of Floodplains' and has provided a copy, together with flood risk maps, to Planning Authorities.

Local Perspective

A number of sites with flooding problems have been considered for inclusion in the Capital Programme. Details of these sites can be found in the following table.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
River Irwell at Stubbins/ Strongstry/Irwell Vale. Undertake pre-feasibility study for potential feasibility by consultants.	EA		£4k	£4k					National Flood Defence
River Irwell at Ramsbottom. Design and construct.	EA		£1240k	£1240k					National Flood Defence
River Irwell at Radcliffe. Undertake pre-feasibility study for potential feasibility by consultants.	EA		£4k	£4k					National Flood Defence
River Irwell at Lower Kersal and Lower Broughton, Salford. Continue construction of flood alleviation works.	EA		£10234k	£1222k	£1754k	£1630k			National Flood Defence
Bessy Brook, West Bolton. Included in capital works prioritisation programme. Viability of scheme to be assessed.	EA		£2k	£2k					National Flood Defence
Blackshaw Brook, Bolton. Complete pre-feasibility study for potential feasibility by consultants.	EA		£1k	£1k					National Flood Defence

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Dean Brook, North-West Bolton. Included in capital works prioritisation programme. Viability of schemes at two sites to be assessed.	EA		£4k	£4k					**National** Flood Defence
Folly Brook, Eccles. Included in capital works prioritisation programme. Viability of scheme to be assessed.	EA		£2k	£2k					**National** Flood Defence
River Irwell/Greave Clough Brook, Bacup. Undertake pre-feasibility study for potential feasibility by consultants.	EA		£4k	£4k					**National** Flood Defence
Platts Brook, Irlam. Included in capital works prioritisation programme. Viability of scheme to be assessed.	EA		£2k	£2k					**National** Flood Defence
Worsley Brook, Eccles. Included in capital works prioritisation programme. Viability of schemes at two sites to be assessed.	EA		£4k	£4k					**National** Flood Defence

ISSUE 15 DERELICTION ADJACENT TO AND WITHIN THE WATERCOURSES LEADING TO INCREASED FLOOD RISK, LOSS OF BUILT HERITAGE AND DECREASED ENVIRONMENTAL QUALITY

Background

The Croal/ Irwell area was the birthplace of the Industrial Revolution and this has led to a wealth of industrial heritage. Many of these sites are deteriorating and there may be loss of historically important features.

It is important that the Agency encourages others to redevelop land adjacent to the river sensitively, to a high standard and with provision for access. Clean rivers will not be appreciated if flowing through derelict and degraded landscape.

Due to a lack of maintenance many of these features now present a flood risk problem. Many of the structures that act as flood defences are beyond economic repair and will need to be replaced. Other derelict structures that impede flow by falling into the river increases maintenance expenditure as they need to be removed.

Local Perspective

Archaeological Survey (See Issue 25, third paragraph of Local Perspective)

Eagley Mills, Bolton

Although this site has been derelict for several years, it is currently being re-developed for residential purposes. Two of the existing mill buildings are being converted with new housing to the remainder of the site. Works at the site have also included opening up of approximately 30m of covered channel forming Eagley Brook.

Kirklees Valley Industrial Estate, Bury

This former textile factory has been completely derelict during recent years and has suffered with extensive fly-tipping. Kirklees Brook flows beneath the mill buildings in places and within a walled channel.

Loveclough Mill, Loveclough

Although the mill buildings have recently been demolished, Limy Water remains within culverted sections beneath the mill floor slab. (See Limy Water Channel Improvements – **Issue 9** Action 4).

Ilex Mill, Rawtenstall

This mill has not been used for many years and stands adjacent to the River Irwell which flows in a stone lined channel.

Lee Mills, Bacup

A demolished mill site adjacent to the River Irwell, which Rossendale BC intends to redevelop for industrial purposes.

Irwell Springs Mill, Weir

The mills that occupied the site were demolished many years ago and the site is awaiting re-development as housing. The River Irwell flows through the site in a stone/concrete channel.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Work with owners to repair decaying structures. Repair structures where debris could be transported into culverts and cause blockages. Negotiate improvements with developers. Liaise with Local Authorities on plans for specific sites. Where opportunities arise encourage redevelopment schemes to include measures to improve or enhance bank walls to a suitable standard.	EA, LPAs	Developers, Landowners	Staff time	•	•	•	•	•	Area FER
Support riverside regeneration initiatives including renovation of significant historic buildings. Support initiatives promoting sympathetic enhancement works such as riverside walkways.	LPAs, Developers, Landowners	EA, Groundwork Trusts, Voluntary sector	Cost unknown	•	•	•	•	•	Area FER

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Promote the use of appropriate materials that respect the landscape setting for the repair and construction of river walls, bridges and other structures associated with the river.	EA, LAs	Developers, Landowners	Staff time	•	•	•	•	•	Area FER
Results of the archaeological survey will enable us to devise ways of protecting the best archaeological sites.	EA	GMAU, Derbyshire CC, Peak District National Park. Etherow Goyt Partnership, English Heritage National Trust	Staff time	•	•	•	•	•	Area FER
Record the sites that cannot be protected.	EA	As above	Staff time	•	•	•	•	•	Area FER

ISSUE 16 SEDIMENT DEPOSITION CAUSING INCREASED FLOOD RISK

Background

The Agency, through its programme of regular maintenance works, clears sediment deposition in order to maintain existing flood protection. The removal of sediment is both expensive and ecologically damaging as long lengths of river can be affected. Construction of silt traps will allow the majority of silt, sand and gravel deposits to be collected at pre-determined accessible locations along the river, thereby simplifying maintenance works to remove them and limiting the damage to the river corridor. Identifying and addressing accelerated erosion problems at source. Such measures will have low capital and maintenance costs. Undertaking modifications to channel geometry by introducing a 'low flow' channel. This increases velocities at low flows thereby reducing sediment deposition. The 'low flow' channel environment can also improve habitat diversity.

Cobbles, gravel, sands and silts are transported downstream by rivers and collect to form deposits. This gradually decreases the standard of flood protection to adjoining properties.

Local Perspective

The following is a list of locations where shoaling is significant and adjacent properties are at risk from flooding. The Agency has removed the build up of material at these locations in the past and the accumulation of new shoal material is monitored by periodic inspections. As erosion and deposition of silts and gravels is a natural feature of any watercourse, it is likely that shoal removal will be required at some point in the future at all of the locations.

River Croal

Smiths Road/Hacken Bridge Road at Darcy Lever, Bolton.

River Irwell

Upstream of Gerald Road footbridge, Salford
Upstream of Littleton Road Bridge, Salford
Kay Street/Waterside Road, Summerseat, Bury
Upstream of Peel Bridge, Ramsbottom
Downstream of Bolton Road North, Stubbins
Adjacent to North Street, Strongstry
Confluence of River Ogden, Upstream of Aitken Street, Irwell Vale.

There are many other locations where shoaling occurs but the above are some of the main locations.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify appropriate locations to construct silt traps to simplify maintenance works to remove natural deposits.	EA	LA (on ordinary watercourses)	Cost unknown. As and when funds become available	•	•	•	•	•	Area Flood Defence
Identify and control areas of severe erosion through application of sustainable river management techniques such as fencing off over-grazed stretches in rural areas.	Land owners possibly aided by the Agency	FWAG	Cost unknown. As and when funds become available	•	•	•	•	•	Area Flood Defence
Identify appropriate locations to introduce two-stage channel to increase low flow velocities and reduce sediment deposition.	EA		Cost unknown. As and when funds become available	•	•	•	•	•	Area Flood Defence
Identify worst affected areas and determine most effective solutions.	EA		Cost unknown ongoing	•	•	•	•	•	Area Flood Defence
Monitor compliance by the Manchester Ship Canal Company to desilt the upper reaches of the canal to maintain the standard of flood protection in rivers discharging to the canal.	EA		Staff time ongoing	•	•	•	•	•	Area Flood Defence

ISSUE 17 CULVERTS CAUSING FLOOD RISK AND LOSS OF HABITAT

Background

Where possible the Agency will refuse consent for culverting, except for access purposes and special circumstances.

Culverts increase the risk of flooding due to blockages, collapse and insufficient hydraulic capacity. This risk is reduced by the provision of debris screens, inspection and regular maintenance. Culverts also present a barrier to wildlife and fragment the natural river corridor. The detection of pollution is difficult when surface water systems discharge within culverts.

It is recognised that blocked culverts below canals may cause a breach in the canal with consequent flooding.

Flooding problems caused by culverts are assessed and added to the prioritisation list for possible inclusion in the Capital Programme.

Local Perspective

The following is a selection of locations where culverts pose a flood risk by limited capacity or structural condition:

River Croal, Bolton

There are several culverted sections forming this watercourse particularly within the town centre area.

Captains Clough Brook

There are several culverted sections forming this predominantly urbanised watercourse.

Bessey Brook, Lostock

A long culverted section before the confluence with Middle Brook is most notable.

Riding Gate Brook, Bolton

Here construction of a building above the culvert causes further problems. The Agency has installed telemetry at the culvert inlet to give early warning of flood risk.

Blackshaw Brook, Bolton

Although this culvert relates to a road crossing, pipes laid within the bed of the culvert add to the flood risk.

Crow Tree Farm Brook, Radcliffe

A long culverted section before the confluence with the River Irwell. The Agency has installed telemetry at the culvert inlet to give early warning of flood risk.

Limy Water, Rawtenstall

Extensively culverted in the lower reaches before the confluence with the River Irwell and existing derelict mills constructed over the culvert.

River Irwell, Bacup

There are two long culverted sections in Bacup town centre. The County Council has recently had to carry out repairs to the sections where highways cross.

Greave Clough Brook, Bacup

Several culverted sections with structures in poor condition.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Continue to refuse consent to allow culverting except for access purposes and special circumstances. Seek to open up culverts during redevelopment where opportunities arise.	EA, LAs	Developers and Landowners	Staff time	•	•	•	•	•	National Flood Defence
Identify possible river restoration schemes where culverted watercourses can be reopened. Promote and implement schemes.	EA	LA, Developers, Landowners and Groundwork Trusts	Cost unknown	•	•	•	•	•	National Flood Defence
Carry out investigations of pipeline crossings within culverts, identify and remove where possible. Discourage construction of new pipelines within culverts.	EA	Local Authorities	Staff time. As and when funds become available						National Flood Defence
Install debris screens and telemetry equipment on culvert inlets where appropriate.	EA	Local Authorities, Landowners	Cost unknown. As and when funds become available						National Flood Defence
Attenuate flows or provide alternative open water routes where culvert capacity causes flood risk.	EA, LAs, Landowners	Developers	Cost unknown. As and when funds become available						National Flood Defence

ISSUE 18 POOR ACCESS TO WATERCOURSES FOR MAINTENANCE WORKS

Background

The maintenance of watercourses is necessary in order to ensure that the standard of flood protection to adjacent properties is conserved. Erosion and deposition of silts and gravel is a naturally occurring feature of any watercourse and, in locations where deposition is extensive, can considerably increase the risk of flooding to neighbouring areas. The presence of debris that finds it way into the channel also increases the risk of flooding and requires removal during planned and emergency maintenance works.

In order to carry out maintenance works, access near to the channel is required and this is not readily available in many locations, particularly with urban watercourses. In heavily urbanised areas the demand for land is high and past development has resulted in watercourses being constrained within walled channels with buildings constructed at the bank top. In these situations access to the channel from the bank is not possible and the only alternative is to have machinery working from the bed of the channel via ramp access. This method of working is difficult with a greater risk of pollution and damage to channel habitat and, accordingly, is carried out infrequently.

In order to improve access arrangements, the Agency utilises the Land Drainage Byelaws to control development during the planning of proposals. This is particularly appropriate during redevelopment of the existing bank top properties mentioned above. However, compromise solutions are often reached which allow the development to go ahead with minimum land loss and improved, but not ideal, access arrangements.

The Agency also has a programme of improvement works relating to the provision of access ramps. These are considered for particular locations where the standard of flood protection is sensitive to the accumulation of silt and gravel, and where maintenance works are not possible from the bank.

The preferred means of performing maintenance operations is by working from the bank.

Local Perspective

Construction of an access ramp to Salteye Brook, adjacent M60 motorway, has been deferred until 2001/2 at the earliest. These works are estimated to cost £40,000. Other access ramps are being constructed as part of Capital Works schemes, where flood defences are being built. These are as follows:

- River Irwell, Salford – 4 access points recently constructed and a further 5 planned for 2001/2
- River Irwell, Ramsbottom – 1 ramp currently under construction
- River Roch, Rochdale – 7 ramps programmed for construction 2003/4 at a cost of £210,000
- River Roch, Littleborough – 3 minor ramps programmed for construction 2003/4 at a cost of £9,000.

Construction of other ramps previously mentioned in the LEAP has now been completed.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify where improvements for access are required and enforce Land Drainage Byelaw No. 7, requiring 8 metre wide access from the top of the bank or wall confining the river, when redevelopment is being considered.	EA	LAs, Developers and Landowners	Staff time	•	•	•	•	•	**National** Customer Service
Identify areas where improved access into the river channel would improve the efficiency and effectiveness of maintenance works and instigate a programme for construction.	EA		Cost unknown	•	•	•	•	•	**Area** Flood Defence
Access points to be constructed at: i) Salteye Brook ii) River Invell, Salford iii) River Roch, Rochdale iv) River Roch, Littleborough	EA			£289k	£40k £30k		£210k £9k		**Area** Flood Defence

ISSUE 19 LACK OF AWARENESS AND POOR ACCESS TO WATERCOURSES FOR RECREATIONAL ACTIVITIES

Background

Walls, fences, culverts and residential or industrial property being built too close to the watercourse often complicates access to stretches of watercourses. This can impede recreational activities and lead to watercourses becoming neglected and undervalued. As well as looking unattractive, development to the bank top leaves little or no habitat for wildlife, whilst linear green space along watercourses can act as a buffer against damaging activities. Neglect of a watercourse can also result from lack of awareness. This lack of awareness is added to by the lack of signage on watercourses and bridges over them.

Local Perspective

There is considerable work being done outside the Agency to address this issue, including the development of the Irwell Sculpture Trail. Part of this trail will run along the Agency's flood alleviation scheme by the River Irwell in Salford and we are working with Salford City Council to incorporate the trail into our work.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify where improvements to public access are necessary and encourage the creation and extension of linear parks.	Local Authorities, EA	Developers, Owners	Staff time	•	•	•	•	•	Area FER
Investigate the potential for meeting the needs for signage and interpretation on and near to watercourses and river crossings.	Local Authorities, EA	Groundwork Trusts, Owners, Mersey Basin Campaign	Staff time	•	•	•	•	•	Area FER
Increase the awareness of the public to the watercourses around them.	EA	Schools, Groundwork Trusts, Mersey Basin Campaign	Staff time	•	•	•	•	•	Area FER

These actions would be delivered as and when opportunities arise and resources are available.

ISSUE 20 THE ADVERSE ENVIRONMENTAL IMPACT OF CONTAMINATED LAND

Background

Land contamination may be present at many sites in the UK as a result of both current and previous activities such as waste disposal or industrial/commercial use. Bringing contaminated land back into beneficial use helps to conserve land as a resource and reduces pressure on greenfield sites, thus conserving agricultural land and natural habitats. Redevelopment of such land provides an opportunity to remediate the contamination. The Agency works closely with Local Authorities, landowners, developers and other organisations to ensure that the environment is protected and improved during the redevelopment process. However, in some cases serious pollution is occurring and a more pro-active approach is required.

Part IIA of the Environmental Protection Act 1990 effective 1 April, 2000 provides a new regulatory regime for the identification and restoration of contaminated land. The regulations create for the first time a statutory definition of 'contaminated land' as

> *'any land which appears to the local authority in whose areas it is situated to be in such a condition by reason of substances in, on or under the land, that; significant harm is being caused or there is a significant possibility of such harm being caused, or pollution of controlled waters is being, or is likely to be caused.'*

Local Authorities and the Environment Agency will have joint responsibilities under the new regulations. Local Authorities must publish a written strategy within 15 months of the regulations coming into effect, showing how they intend to inspect their areas for the purpose of identifying contaminated land. The local authority will then arrange for certain suspect areas of land to be investigated in detail to help assess whether they fit the definition. Once an authority has determined that a piece of land is 'contaminated' they must decide what remedy is required and who is liable to carry out the work. The Environment Agency has a requirement to provide the local authority with both general and site specific information and guidance in order to assist them in their duties. The Agency will have the responsibility for ensuring that investigation and restoration of certain types of 'contaminated land' known as 'special sites' is carried out. Examples of special sites include those causing serious water pollution, former acid tar lagoons, Ministry of Defence land, explosives manufacture sites and oil refineries. The Agency also has a duty to publish (from time to time) a National Report on the State of Contaminated Land.

Remedial achievement on contaminated land, in general, costs substantial sums of money. Although polluters or landowners may be found liable and made to pay, overall progress is likely to be influenced by government policy and the availability of funding. Some contaminated sites are in public ownership as a result of abandonment. Such sites are frequently termed 'orphan' sites. Funding to investigate and rectify these sites is made available to the Agency through the DETR's Supplementary Credit Approval Scheme (SCA) where the sites are causing contamination, or have the potential to impact upon controlled waters. Funding also goes to Local Authorities where there is an impact or potential impact to human health.

Local Perspective

The industrial base of the area was predominantly centred on the textile industry and coal mining with some paper mills, chemical works and dye manufacturing.

Within the Croal/Irwell valley there are a number of large alkali waste deposits from the Leblanc process for the production of washing soda.

Chrome salts from the plating of metals form a feature known locally as 'Chrome Hill' in Bolton.

There are a few significant old household waste landfills e.g. Red Moss, Horwich and Lumns Lane, Salford. Some oil refining and tar distilling took place in Salford.

Funding for the Red Moss wetland restoration project has been approved. This project offers the opportunity for an Agency cross-functional approach to restoring the bog – EP (Waste) Landfill Site, Flood Defence and Ecology all have strong interests as well as recreation and educational aspects of FER (Fisheries Ecology Recreation). The project is a partner-funded initiative between the Agency, Local Councils, Landfill Tax, Wildlife Trust and English Nature.

With the decline in the manufacturing industry, there are parts of urban areas that have become derelict. They include disused petrol stations and gasworks that are a feature of most areas. As a result, contaminated land is likely to be a serious legacy.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify and initiate action on sites for redevelopment.	Site Owners, Developers	EA and Local Authority	Staff time	•	•	•	•	•	**National** Environment Planning
Undertake detailed site investigations, as part of redevelopment process.	Site Owners, Developers, Consultants	EA and Local Authority	Staff time	•	•	•	•	•	**National** Environment Planning
Remediation of sites for redevelopment.	Site Owners, Developers, Consultants	EA and Local Authority	Staff time	•	•	•	•	•	**National** Environment Planning
Identify and prioritise sites for possible SCA funding.	EA	Local Authority	Staff time	•	•	•	•	•	**National** Environment Planning
Provide information and guidance to LA's under Part II A.	EA	LA's	Staff time	•	•	•	•	•	**National** Environment Planning
Conduct site investigations at potential special sites on behalf of LA's.	EA	LA's	Cost unknown	•	•	•	•	•	**National** Environment Planning
Ensure remediation of 'special' sites identified under Part II A. For example, Red Moss wetland restoration project.	EA	LA's Wildlife Trust, English Nature, Landfill tax	Cost unknown. Red Moss (EA £5k)	•	•	•	•	•	**National** Environment Planning
Contribute towards national report on state of contaminated land under Part II A.	EA	LA's	Cost unknown	•	•	•	•	•	**National** Environment Planning

ISSUE 21 ADVERSE IMPACT OF ILLEGAL WASTE DISPOSAL

Background

Under the current legislation, the Environmental Protection Act 1990, it is an offence for anyone to dispose of certain wastes on, or in land, without a waste management licence authorising those activities. These wastes include waste from household, commercial and industrial sources and are known as 'controlled wastes'.

Despite the legislation there remains a significant problem of illegal waste disposal activity, including 'flytipping' and illegally operated waste management sites in the area. Flytipped wastes typically consist of building and demolition wastes, domestic refuse, garden and DIY waste, furniture and domestic appliances.

As well as the obvious detriment to amenity, flytipping often brings the risk of environmental pollution, physical injury and damage to health. In rivers, debris can build up and block the flow of water, especially in culverts and under bridges, increasing the risk of flooding to roads and property.

The Environment Agency has a range of enforcement and control measures as well as the ability to work in partnership with others to tackle this problem.

In an effort to combat the flytipping problem more effectively, the Environment Agency and Local Government Association have agreed a Memorandum of Understanding to deal with flytipping incidents. The Memorandum of Understanding sets out a protocol between the Local Government Association and the Agency in respect of the response to incidents of flytipping in England and Wales, and is composed of three sections.

a) the duties and powers of Local Authorities and the Agency;
b) a response strategy, and
c) an information strategy.

The response strategy represents the national standard response of the Agency to incidents of flytipping. The Agency may respond above those standard responses to take into account local needs/problems but only where it has been separately agreed in writing by the Agency. Such an agreement must contain a clear statement as to why special arrangements are necessary for the Local Authority involved.

In addition to investigating flytipping incidents, the Environment Agency is currently carrying out a programme of work to regulate a number of waste disposal facilities that are operating illegally. Such sites are not licensed or registered as exempt as required by the Waste Management Licensing Regulations 1994. The unregulated sites are mainly scrap metal dealers and car breakers whose activities may pose a threat of pollution to the environment.

Local Perspective

Option 4 in the Consultation Draft, October 1998, promoted the control of unauthorised access to problem waste disposal sites. A role of the Agency's Enforcement Team is to identify sites that have been operating without appropriate authorisation. Since August 1999, eighteen sites, previously not identified, have been licensed or issued with an exemption certificate. Five now hold waste management licences and thirteen have exemption certificates. This action effectively reduces the adverse impact of illegal waste disposal and is an ongoing process.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Promote regular clearance of flytipped material and attempt to recover costs.	LA	EA	Cost unknown	•	•	•	•	•	**EPP**
Agree flytipping strategy and matrix of responsibilities.	EA	LA	Staff time	•	•	•	•	•	**National + Regional**
Improve awareness and information on best waste management practice and facilities.	EA		Staff time	•	•	•	•	•	**EPP + PR**
Promote the control of unauthorised access to problem sites.	EA	LA	Cost unknown	•	•	•	•	•	**EPP + PR**
Promote greater liaison between EA and Local Authorities.	EA	LA	Staff time	•	•	•	•	•	**Regional + EPP**
Educate the public about the adverse impact of illegal waste disposal.	EA	LA	Staff time	•	•	•	•	•	**EPP + PR**
Identify all unauthorised metal recycling sites in the area and regulate through licensing or exemption.	EA		Staff time	•	•	•	•	•	**EPP**

EPP – Environment Protection/Planning PR – Public Relations

ISSUE 22 THE NEED TO INCREASE THE AWARENESS OF SUSTAINABLE WASTE MANAGEMENT

Background

In December 1995 the government published 'Making Waste Work' – a strategy for sustainable waste management in England and Wales, indicating that waste management should be pushed as far up the waste hierarchy as possible (Reduction, Re-use, Recovery including recycling, composting and energy recovery, with Disposal as the least desirable option).

There have been two further consultation documents, 'Less Waste, More Value' in 1998 and 'A Way with Waste' in 1999. The 'Waste Strategy 2000' was published in May 2000 . A key target is, by 2005, to reduce the amount of industrial and commercial waste landfilled to 85% of 1998 levels, focusing on recovering value and reducing environmental impacts. This means not only putting waste materials to better use, but tackling any growth in waste production. The strategy also identifies the need to recover and recycle increasing amounts of household waste (currently 8% has energy recovered from it and 9% is recycled). By 2005 the Government expects to recycle or compost at least 25% of household waste and that this will increase to at least 33% by 2015. To ensure that all local authorities contribute to achieving this objective, the Government will set statutory performance standards for local authority recycling in England.

At a local level, the Agency will be involved in preparing regional Strategic Waste Management Assessments. These documents will include waste management information at a local authority level, with details of types and quantities of industrial and commercial waste, remaining capacity at landfill sites, and indications of future waste management needs. The Agency has developed a computerised Life Cycle Assessment (LCA) Tool, which is designed to help local authorities compare environmental impacts of different waste management options.

Local Perspective

There are a number of waste minimisation/environmental clubs in the LEAP area. Carrs Lane industrial estate in Haslingden has been participating in a Green Business Parks Scheme run by Groundwork and supported by the Agency. The project is continuing successfully with the recent establishment of a waste minimisation club. Other projects include the Bury Waste Support Service, the East Lancashire Waste Training Scheme, Bolton Business Environment Network and a number of Business Environment Associations (BEAs) administered by Groundwork.

The Agency has organised a number of Waste Minimisation seminars for local businesses and to encourage this activity a Regional booklet 'North West Waste Minimisation and Recycling Guide' has been produced. This is available free of charge from the Environment Agency Customer Services Department.

The Agency has worked closely with Bury Business Environment Associations, local business and North West Water sponsoring the development of a portable car breaking area. If a pilot of this innovative new system is successful it should help reduce the investment cost required for small business to meet regulatory requirements and promote best environmental practice in the disposal of vehicles.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Identify the potential from setting up waste minimisation clubs in the area.	EA, Business Links, Groundwork Trusts, LAs		Cost unknown	•	•	•	•	•	**Area** EP
Promote the environmental and economic benefits of sustainable waste management.	EA, Business Links, Groundwork Trusts, LAs		Cost unknown	•	•	•	•	•	**National** EP

ISSUE 23 ADVERSE IMPACT OF DISCHARGES FROM WASTEWATER TREATMENT WORKS (WwTW)

Background

North West Water Ltd (NWW Ltd) undertake the majority of domestic and industrial sewage treatment within the Croal/Irwell LEAP area. Their main wastewater treatment works (WwTWs) serve Rossendale, Bury, Bolton, Salford, Eccles, Davyhulme, and Urmston.

Expenditure by NWW Ltd on improvements at WwTWs, to reduce this impact, is determined during the Periodic Review and set out in Asset Management Plan (AMP).

Local Perspective

The effluent discharged from some of these works can have a significant detrimental impact on water quality in the receiving watercourse.

Discharges from Belmont, Bolton, Bury, Eccles and Rossendale WwTWs all have a significant organic impact on water quality in their respective receiving watercourses.

Following the announcement on the scope of the AMP3 programme made by the Environment Minister in March 1999, it is anticipated that improvements will be made to all the above WwTWs in the period 2000 to 2005.

Poor water quality occurs in the Manchester Ship Canal, principally as a result of low dissolved oxygen levels. A partnership project to oxygenate the canal in the Salford Docks area, involving the Agency, NWW Ltd, Salford CC, Trafford MBC and the Manchester Ship Canal Company, is already underway. Further down the canal, the discharges from Davyhulme, Salford and Urmston WwTWs contribute to the poor quality, although the impact of Davyhulme WwTW has been greatly reduced recently, following the commissioning of improved treatment facilities. The Agency has identified that in order to understand the nature of the problem in the canal it is necessary to build a model of it that represents its unique physical characteristics. This will enable the Agency to determine where improvements are necessary to enable the canal to comply with its long-term River Quality Objectives. If this includes improvements at any of the WwTWs discharging into the canal, the Agency will propose that this be funded in the AMP4 programme.

The impact of nutrients discharges from Bolton, Bury and Rossendale WwTWs are currently being investigated by the Agency to determine whether the River Irwell is significantly nutrient enriched (euthrophic).

Discharges from Rossendale WwTW can also have a significant impact upon the River Irwell as a consequence of them containing elevated levels of the pesticide permethrin. In an attempt to mitigate this impact, Kearns at Waterfoot have recently made improvements to their moth-proofing techniques designed to reduce the amount of permethrin they use and hence the amount they release to sewer. See **Issue 11** for reference to the work Kearns have undertaken to reduce the amount of permethrin they discharge into Cowpe Brook.

Discharges from Davyhulme WwTWs have an unacceptable aesthetic impact, in terms of foaming and discoloration of the Manchester Ship Canal and the River Mersey. The Agency and NWW Ltd are both currently undertaking works to investigate and remediate these impacts.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Reduce, under the AMP3 programme, the BOD and ammonia load discharged from Belmont, Bolton, Bury, Eccles and Rossendale WwTWs.	NWW Ltd	EA	Cost unknown		•	•	•	•	National Environment Planning
Develop a Manchester Ship Canal model. Determine and pursue funding for actions necessary to facilitate compliance with long-term River Quality Objectives.	EA	NWW Ltd, Manchester Ship Canal Company, Mersey Basin Campaign	£510k	£160k	£250k	£100k			National EP
Investigate the trophic status of the River Irwell downstream of Bolton, Bury and Rossendale WwTWs and pursue the designation of the river as a 'sensitive area', if appropriate.	EA		Staff time	•	•	•	•	•	National EP
Pursue better control of the trade effluents received at WwTWs to reduce the impacts (colour, foam, permethrin, etc) of their discharges.	NWW Ltd	EA Kearns, Traders	Cost unknown	•	•	•	•	•	Area EP

ISSUE 24 ADVERSE IMPACT OF INDUSTRIAL DISCHARGES ON WATER QUALITY

Background

Rather than discharging their wastewater into the public sewers, a number of industrial premises, in the Croal/Irwell LEAP area, operate their own effluent treatment plants and discharge treated effluent into a local watercourse. Such discharges require prior authorisation from the Agency. Depending on the nature of the process undertaken at the industrial site, this authorisation is either in the form of a Consent to Discharge issued under the Water Resources Act 1991 or an Authorisation issued under the Environment Protection Act 1990. The Agency imposes conditions on these Consents/Authorisations that are designed to prevent the discharges from having an unacceptable impact on the quality of the receiving watercourse.

In some cases, the Consents/Authorisations set by predecessor bodies and inherited by the Agency, do not adequately protect the aquatic environment. As a result, discharges from these industrial sites can have a significant impact on water quality in the receiving watercourse. The tightening of such Consents/Authorisations is addressed where possible, however, there are often significant financial or technological constraints. The Agency seeks to work with dischargers to bring about the necessary improvements to their effluent treatment.

Local Perspective

Under the terms of their current Consents/Authorisations, discharges from the following industrial sites are having, or could potentially have, a significant adverse impact on water quality:

- Tighter consent conditions need to be imposed on the discharge from Charles Turner & Co Ltd near Bolton, in order to ensure Eagley Brook complies with its long-term River Quality Objectives.
- Discharges from MEL Chemicals at Swinton contain elevated levels of ammonia and hence have a significant impact on water quality in Slack Brook and the River Irwell.
- Discharges from Robert Fletcher (Stoneclough) Ltd at Kearsley can contain a high organic load and hence can have an impact on water quality in the River Irwell.
- Discharges from Chloride Industrial Batteries at Clifton Junction can contain an elevated level of lead and hence can have an impact on water quality in the River Irwell.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Review current Consents/ Authorisations to bring them in line with new regulations and environmental objectives.	EA		Staff time	•	•	•	•	•	**Area** Environment Planning
Where necessary, provide improved effluent treatment facilities or divert site wastewater to sewer, to meet the requirement identified above.	Industry	EA	Cost unknown						**Area** Environment Planning
Minimise waste generated by industrial processes.	Industry	EA	Cost unknown. As and when funds become available						**Area** EP

ISSUE 25 LACK OF KNOWLEDGE OF BUILT HERITAGE ALONG THE AREA'S RIVERS IS LEADING TO ITS DETERIORATION AND DESTRUCTION.

The Croal Irwell catchment has a long history of continuous settlement. Around 8,000 BC hunter-gatherers camped throughout the Pennines. Encampments continued and evolved with woodland clearance into hamlets, during the whole of the Neolithic Period, Bronze Age and the Iron Age. Agriculture became the basis of the economy.

The Irwell valley is known to have several prehistoric sites. The Romans occupied the area as did the Anglo Saxons although evidence of a Saxon civilisation is rather hard to find. In Medieval times the region continued to grow. Practised farming skills supported an increased population. The post medieval period saw technological, social and economic development driven by the textile industry. By the second half of the 18th century there was an established, thriving, cottage textile industry. During the late 18th and early 19th centuries the area was at the heart of the rapidly expanding textile industry. The principal fabrics were wool, cotton and linen. Factories were concentrated along the river using the continuous waters of the Croal and Irwell as a power source. Over the years, industry has continued to develop through many periods of prosperity and recession up to the present day.

The area thus has a potentially rich built heritage. However, much archaeology was destroyed during the development of the Manchester conurbation. Other archaeological sites have been neglected and fallen into disrepair. An archaeological survey on the Roch, Irk and Medlock rivers carried out by the Environment Agency has increased the number of known archaeological sites within 10 metres of the river by 379%. There is, therefore, a danger that in areas where we have not carried out extensive surveys, sites may inadvertently be destroyed by routine and heavy maintenance operations and by riverside development. If the Agency knows where important sites are, we can modify our maintenance works to take this into account. Developments within 8 metres of main rivers require land drainage consents from the Agency. With a good knowledge of important archaeological sites, we can highlight the issues to the site owner and local authority. It provides a means of alerting the Agency before riverside development takes place. This is especially useful if the development does not need planning permission.

Local Perspective

There are about ten roads in the Manchester area where, under the right conditions, timber bridge remains may be revealed wherever they crossed rivers. Additionally, a river may expose remains of roads through the process of meandering over the last 2000 years.

There are many medieval corn mill sites and 18th and 19th century textile mills that were associated with the Croal and Irwell rivers. Some of these survive as standing buildings but others are only left as below ground remains that are vulnerable to river erosion. Some of these sites are known but there may be many others that we do not know about yet.

During October 1999 to March 2000 Lancaster University carried out a rapid archaeological survey of the main rivers in the Croal Irwell catchment. (See **Issue 15**). The Agency is now incorporating the information onto its databases so that it can be used in our operational work. The County Councils who were partners in the project are also incorporating the information into their Sites and Monuments Records. If after analysis of the data, we are able to identify sites that are in need of restoration, we will examine our findings to determine what can be done.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Classify areas of need, and report on the technical, economic and ecological aspects of any potential solution. A catchment wide study should consider a strategic approach to this issue.	EA		Staff time	•	•				**Regional** FER
Archaeological survey results will enable us to devise ways of protecting the best archaeological sites and record those that cannot be protected.	EA	Greater Manchester Archaeological unit, Lancashire County Council	Staff time As and when funds become available		•	•	•	•	**Area** FER

ISSUE 26 THE NEED FOR ADDITIONAL INFORMATION TO CARRY OUT MORE EFFECTIVE FLOOD WARNING AND ASSESSMENT OF FLOOD RISK

Background

The Agency collects data on rainfall and river levels for inland rivers and sea-level information on the coast. This data is used to model and predict flood risks for specific locations. It enables the Agency to carry out its role of issuing direct flood warnings to the public. On a wider front, further known flood risk areas are being identified by surveys carried out under Section 105 of the Water Resources Act 1991.

Following the severe flooding, which affected large areas of central and eastern England and parts of Wales over the Easter weekend 1998, the Agency commissioned an independent investigation. The findings of this investigation, chaired by Peter Bye, formed the basis of the Easter 1998 Floods – Report by the Independent Review Team to the Board of the Environment Agency (the Bye Report). This assessed the lessons that could be learnt from the Easter Floods. In response, the Agency produced an Action Plan, which is aimed at refocusing and accelerating, the Agency's flood warning improvement programme for England and Wales. In total, over 100 recommendations have been put forward. To meet these recommendations the following needs have been identified:

- More accurate Flood Warnings which requires improvements to the hydrometric monitoring network;
- Maps issued to Local Authorities identifying flood risk areas, continuing programme of surveys and updating of data;
- Inspections of flood defences to carry out, maintain records, and pursue policy of repair or improvement.

Floodline (0845 988 1188) offers a further level of information before, during and after a flood. Floodline is staffed seven days a week from 8am to 8pm (weekdays) and 10am to 4pm (weekends). Floodline also offers callers a 24-hour recorded information service, detailing all flood warnings in force in England and Wales at any time. Callers can also notify us of any localised flooding 24 hours a day. For hearing impaired people a minicom service is available on **0845 602 6340**.

Additional hydrometric telemetry is required for both existing flood warning zones and new flood warning zones to provide more accurate flood warning. Suitable river sites have to be upstream or in the flood risk area, stable, have service connections to BT and power, be accessible for routine maintenance and located where installation will create minimal disturbance to the river channel. Permanent hydrometric monitoring apparatus is usually housed in a building adjacent to the river. While permitted development allows the Agency to undertake certain types of development in pursuing its functions, additional procedures apply for permitted development in a Special Area of Conservation (SAC) site, which may prevent permitted development rights being exercised. Within the riverine cSAC and Site of Special Scientific Interest (SSSI) consent is required from English Nature.

The surveys under Section 105 of the Water Resources Act 1991 involve the hydraulic mathematical modelling of various flood return events, which produces an envelope of flood risk areas. For fluvial flooding, the 1.0% probability event limit is used, (that is the probability of a flood event occurring in any one year).

Local Perspective

Some rivers in the Croal/Irwell catchments were analysed in great detail in accordance with the Section 105 floodplain mapping project and resulting flood outlines marked onto the 1999 Indicative Floodplain Maps. These maps, which also included all other flood risk information known to the Agency in connection with 'main river', were given to local authorities on a CD in June 1999. An update for 2000 is being re-issued to local authorities in September 2000 and further updates will be issued annually to include any changes as a result of:

- Recorded flood events (if any)
- More accurate information such as detailed computer modelling studies of rivers
- Development impacts, such as land raising.

Consultants have completed detailed analysis of approximately 25% of rivers in urban areas in the Croal/Irwell catchments. In-house investigation of all other rivers in these catchments is now complete and more accurate flood outlines for these will be entered onto the geographic information system (electronic map and database) for the September 2001 update of the Indicative Floodplain Maps.

The Agency plans to make floodplain maps available on its web site by December 2000.

Improvements to Flood Warning Telemetry for the River Irwell, Salford are being carried out in conjunction with the capital scheme during 2000 to 2002. In addition, similar works are planned during 2000/01 at the following:

- Folly Clough Brook, Crawshawbooth, Rawtenstall (where flooding to property occurred in July 1999)
- River Beal, Lilac Mill, Shaw.

These works will close some of the gaps in the Agency's network of local sensors throughout the catchment and so help to improve the flood warning service provided.

Action	Responsibility		Total Cost (Agency)	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	Agency Priority Function
	Lead	Other							
Improve flood warning telemetry at the following sites: River Irwell, Salford Folly Clough Brook River Beal, Shaw.	EA		 £175k £25k £25k	 • • •	 •				**National** Flood Defence
Update Indicative Floodplain maps.	EA		Staff time	•	•	•	•	•	**National** Flood Defence

5. A BETTER ENVIRONMENT THROUGH PARTNERSHIP

There is a range of initiatives, at various levels, by various bodies, which cover the area of this Plan. These are both statutory and non-statutory in nature and cover a variety of interests. In addition, a number of bodies have produced, or are producing, some form of documentation. It is important for all parties that where interests overlap, discussion occurs on those areas of common interests. In this way action can be integrated, increasing efficiency, avoiding duplication and making the most of limited resources.

Organisations and Partnerships

Local Planning Authorities

The Agency is a consultee for development plans. The plan area is administered by a number of Local Planning Authorities.

These are:
- Blackburn with Darwen BC
- Bolton MBC
- Burnley BC
- Bury MBC
- City of Salford
- Manchester CC
- Rochdale MBC
- Rossendale BC
- Tameside MBC
- Trafford MBC

Each of these Local Planning Authorities has in place, an adopted development plan. The LEAP boundary is based on a catchment boundary with no one Local Authority wholly contained within this area. The Agency considers LEAPs are an important part of the ongoing dialogue with Local Planning Authorities in working towards the objective of sustainable development. Particularly, through fostering partnerships and identifying issues, where environmental problems and potential problems can be most actively pursued.

Bury MBC have a draft consultation document, Bury Regeneration Strategy, which will be reviewed in the light of comments received. They intend to produce a final document for adoption and circulation in the early summer. Interested parties should contact Joan Boardman on 0161 253 5396.

Partnerships

British Waterways

British Waterways runs over 2,000 miles of inland waterways and their related structures and is committed to safeguarding their unique environment, while encouraging increased use and enjoyment of what the waterways have to offer.

This LEAP area includes the Manchester Ship Canal, Manchester, Bolton and Bury Canal, and the Bridgewater Canal.

They aim to work with partners in the public, private and voluntary sectors to achieve the greatest benefits from conserving and enhancing the waterways and their environment.

Contact: **Steven Griffiths**
British Waterways
Navigation Road
Northwich
Cheshire
CW8 1BH

Tel: 01606 74321

East Lancashire Partnership

The East Lancashire Partnership is an increasingly important and influential strategic organisation with partners from across the public, private and voluntary sectors. East Lancashire has a population of over half a million people and includes the areas of Blackburn with Darwen, Burnley, Hyndburn, Pendle, Ribble Valley and Rossendale. By working in partnership with you and others it ensures that its commitment can be further harnessed, built upon and developed to achieve greater positive results in the future.

Three themes have been identified as a manageable framework for their strategy.

- **Income, Wealth and Prosperity**

  East Lancashire will develop a more diverse economy. Through investment in the improvement of skills and abilities, encouragement of higher value services and innovative new manufacturing processes, they expect to improve opportunities in the workplace for the community.

- **People, Communities and Future Citizens**

  East Lancashire has a strong commitment to high standards of health and wellbeing. Individuals and communities will be encouraged and supported to enable them to take responsibility for their own development and wellbeing.

- **Our Living Space**

  Green corridors between Lancashire towns will be used to create a unique and positive identity. By bringing the countryside into the towns and by increasing the amount, quality and diversity of green space in older urban areas, this vision is based on taking the best aspects of the environment and blending them into a new model of city living.

Contact: **The East Lancashire Partnership**
The Globe Centre
St. James Square
Accrington
East Lancashire
BB5 0RE

Tel: 01254 380603
Fax: 01254 380600
E-mail: elancs@hyndburnbc.gov.uk

Groundwork Trust

Groundwork Manchester – Waste Resource Scheme

This project was launched in October 1999 and is run by Groundwork Manchester, in association with BOC (British Oxygen Company), Manchester City Council and the Environment Agency. It aims to recruit 75 companies, and members will receive a free waste audit. Member companies will be encouraged to exchange their waste (via a database/newsletter), or recycle it.

Contact: **Shirley Herron**
Groundwork Manchester
Phoenix House
61 Spear Street
Manchester
M1 1DF

Tel: 0161 237 5656
Fax: 0161 237 3939
E-mail: manchester@groundwork.org.uk

Mersey Basin Trust

The Mersey Basin Trust is the voluntary sector arm of the Mersey Basin Campaign. The Trust is a network made up of organisations representing the community and voluntary sectors. The Trust runs a number of projects that provide voluntary groups and schools with information, advice and financial assistance to help them carry out projects that support the aims of the Mersey Basin Campaign.

Contact: **Mark Turner**
Mersey Basin Trust
Sunley Tower
Piccadilly Plaza
Manchester
M1 4AG

Tel: 0161 228 6924

Red Rose Forest

The Forest Plan is the blueprint for the creation of Red Rose Forest. It describes the long term vision for the forest and sets out the framework for the achievement of that vision. The Plan puts the forest initiative in Greater Manchester into its physical and social context. The area's landscape character, its woodland, wildlife, agricultural, recreational and archaeological resources are all considered. The value and need for community involvement, environmental education, the arts and tourism are also recognised. This provides the overview necessary to enable the development of sound resource-based policies and proposals.

Red Rose Forest is one of twelve community forests being created in and around some of England's larger towns and cities. The Countryside Agency, Forestry Commission and the Metropolitan Boroughs of Bury, Bolton, Trafford and Wigan spearhead this national initiative. The cities of Salford and Manchester are also major partners in Red Rose Forest.

Contact: **Chris Waterfield**
Red Rose Forest
Community Forest Centre
Dock Office
Trafford Road
Salford Quays
Salford
M5 2XB

Tel: 0161 872 1660
Fax: 0161 872 1680
E-mail: team@redroseforest.co.uk

Rossendale Partnership

Contact: **Sam Plum, Rossendale Partnership Programme Manager**
Groundwork Rossendale
New Hall Hey Road
Rawtenstall, Rossendale
Lancashire
BB4 6HR

Tel: 01706 211421
Fax: 01706 210770
E-mail: rossendale@groundwork.org.uk

The Rossendale Partnership, formerly The Upper Irwell Partnership, is a company limited by guarantee which has a broad regeneration remit for the whole of Rossendale. As yet the Partnership has not formally agreed its priorities, although they will be based on the following themes: *Employment, Health, Community Safety, Transport and Tourism, Image and Environment.*

They have recently established a River Valley Initiative to cover the Irwell, Spodden and their tributaries in Rossendale. This will be known as the Rossendale Rivers Initiative. The Initiative is still very new, and a steering group has been established. Its aim is to bring together all partners and resources to enhance Rossendale's rivers, focusing on the regeneration of the unique waterside environment, improving access for all and harnessing local activity.

Objectives

- to contribute to improving the quality of Rossendale's watercourses;
- to identify ways to conserve the River Irwell's unique industrial heritage;
- to celebrate the contribution of the River Irwell to Rossendale through awareness campaigns and educational work targeted at selected groups;
- to enhance and improve access to the River Irwell and increase the recreational value for all;
- to encourage the local business community to support the RVI and to carry out their own environmental improvements;
- to build upon local pride, ownership and community involvement to secure the future of the River Irwell;
- to improve the waterside environment, landscape and habitat encouraging nature conservation, practical projects and celebration.

Steam, Coal and Canal

The Steam, Coal and Canal project will create Great Britain's first Linear Industrial Heritage Park. The Park will run along the Bridgewater Canal Corridor, initially from Barton Aqueduct to Leigh Basin and, eventually, be extended all the way from Castlefield to Wigan Pier. Steam, Coal and Canal will use the canal and its towpaths to link together important sites in our industrial heritage.

Steam, Coal and Canal is a partnership between the Local Authorities through which the Bridgewater canal passes, the Environment Agency, the Countryside Agency, and the Red Rose Forest. Voluntary associations include Inland Waterways, the Worsley Civic Trust and partners from the private sector, for example, the Manchester Ship Canal Company, Viridor Waste Management and Bridgewater Boatbuilders.

Contact: **Deirdre Burns, Project Co-ordinator**
Steam, Coal and Canal
1a Chapel Place
Barton-Upon-Irwell
Trafford
M41 7LE

Tel: 0161 748 4414

Stream Care

Stream Care and the Mersey Basin Trust community project officer help voluntary and community groups to 'adopt' a local watercourse. The Trust is able to provide advice and support which enables member groups to carry out small-scale practical projects. Stream Care is funded by North West Water Ltd and the Environment Agency.

Contact: **Sibongile Pradhan**
Stream Care
Mersey Basin Trust
28th Floor
Sunley Tower
Piccadilly Plaza
Manchester
M1 4BT

Tel: 0161 228 6924
Fax: 0161 236 3391
E-mail: trust@merseybasin.org.uk

Water Watch

Water Watch is a project to reduce the amount of litter and debris in and around the rivers and canals of the Mersey Basin area. It does this by raising public awareness, appraising and giving specific advice on urban debris problems and developing partnerships with local authorities, businesses and local communities, to tackle problems in the area's rivers and canals.

Contact: **Mary Lee,**
Water Watch
28th Floor, Sunley Tower
Piccadilly Plaza
Manchester
M1 4BT

Tel: 0161 242 8202
Fax: 0161 242 8201
E-mail: waterwatch@merseybasin.org.uk

Regional and Area Environment Agency Committees

Each region of the Agency has three statutory Committees; members are drawn from Local Authorities, interest groups and prominent individuals. These Committees play a vital role in our relations with those affected by our work. They meet four times a year and the meetings are open to the public and press.

These committees are:

Regional Environment Protection Advisory Committee

We are required to consult this Committee about proposals relating to the way in which we carry out our functions in the Region and we must consider representations made by the Committee. The chief role of the Committee is to identify issues of special importance to the Region, to act as a regional sounding board for ideas emanating from the Agency and our Policy Directorates and to help the Regional Managers to do their jobs by providing advice on matters arising in the Region. The Committee's general remit covers all aspects of the Agency's functions but it would not normally expect to concern itself with specific matters dealt with by the other committees.

Regional Flood Defence Committee

The chief role of this Committee is to advise us on the matter in which we discharge our duties in relation to Flood Defence in the Region and these duties will also include advising on all Conservation issues relating to the functions within its remit.

Regional Fisheries, Ecology and Recreation Advisory Committee

The chief role of this Committee is to advise us on the manner in which we discharge our duties in relation to Fisheries and Recreation in the Region and these duties will also include advising on all Conservation issues relating to the functions within its remit.

Area Flood Defence Advisory Committee

The role of this Committee is to be receptive to local opinion on flood defence and land drainage issues. Also, to consider new flood defence capital schemes, proposed variations to the statutory Main River Map and other matters of a local nature and to make recommendations to the Regional Flood Defence Committee.

Area Environment Group

This group provides a communication link between the local community and the Agency, to advise the Area Manager on the local environment and provide a focus for the input into LEAPs.

Liaison Groups

The Liaison Groups in South Area were established as a direct result of the large number of Local Authorities involved, and the restricted number of Local Authority representatives on the Area Environment Group.

The Groups provide a focus for effective liaison and working relationships between the Environment Agency and Local Government. They are non-statutory committees that are managed at an area level. Although there is no formal link to the Area Environment Group, papers are exchanged between the groups.

Membership of the Groups are comprised of elected Members (Councillors), and Local Authority and Agency Officers.

APPENDICES

APPENDIX 1 – DUTIES, POWERS AND INTERESTS OF THE ENVIRONMENT AGENCY

The Agency has a wide range of interests in the areas of water management, waste management and pollution prevention and control. While statutory duties and powers support many of these interests, much of our work is advisory, with the relevant powers resting with other bodies such as Local Planning Authorities. For example, the Agency is not responsible for:

- Noise problems (except if it is to do with our work)
- Litter (unless it is restricting the flow of a river or arising from waste management licensed sites)
- Air pollution arising from vehicles, household areas, small businesses and small industry
- Collecting waste in your local area
- Planning permission
- Environmental health
- Food hygiene.

These are all dealt with by the Local Authority who will liaise with the Agency, if necessary.

The Agency is 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.

The following table summarises the Agency's duties, powers and interests and their relationship to land-use planning.

Agency Duty:	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership:
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	• Grant or vary water abstraction and impoundment licences on application. • Revoke or vary existing licences to reinstate flows or levels to surface-waters or groundwater which have become depleted as a result of abstraction, and are subject to paying compensation to licence holders. • Secure the proper use of water resources through its role in water-resources planning, the assessment of reasonable need for abstractions and promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions.	• The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and lay-out of the infrastructure.	The Agency is committed to water-demand management and will work closely with water companies and developers, Local Authorities and relevant organisations to promote the efficient use of water. The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water-conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.		• Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by Local Planning Authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • The maintenance of non-main rivers and the carrying out of other works not affecting their flow, which is a Local Authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	As a consultee on planning applications within floodplains, the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts of proposed floodplain development. The Agency will encourage best practice, including source-control measures and common standards, among Local Authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood-warning dissemination plans and supports their endeavours to protect communities at risk.

Agency Duty:	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership:
Water Quality The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.	• Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters and into or onto land in respect of water quality through the issue and enforcement of discharge consents. • Prosecute polluters and recover the costs of clean-up operations.	• The control of runoff from roads and highways. This is a Highway Agency duty. • The greater use of source-control measures to reduce pollution by surface-water runoff. • Prevention and education campaigns to reduce pollution incidents.	The Agency will liaise with Local Authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source-control measures. As a consultee on planning applications, the Agency will advise Local Planning Authorities on the water-quality impact of proposed developments.
Regulation of Major Industry The Agency has a duty to regulate the largest, technically complex and potentially most polluting prescribed industrial processes (such as refineries, chemical works and power stations) under Part 1 of the Environmental Protection Act 1990.	• To grant integrated pollution control (IPC) authorisations, which ensure that BATNEEC is used to prevent, minimise and render harmless releases to all media. • Take enforcement action for non-compliance with authorisations.	• Smaller industrial processes which are not controlled by the Agency. • Developments in pollution prevention technology.	The Agency will liaise with industry when developing guidance on BATNEEC and BPEO.
Air Quality The Agency has a duty to have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.	• To vary IPC authorisation conditions to require reductions in releases to air where these are making a significant contribution to the failure to meet air quality standards.	• Releases to air from Local Authority controlled processes. • Control over vehicular emissions and transport planning.	The Agency provides data on releases to air from IPC processes and advice on planning applications to Local Authorities. The Agency wishes to liaise with Local Authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the Government's National Air Quality Strategy.
Radioactive Substances The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.	• To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public.	• The health effects of radiation.	The Agency will work with users of the radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are disposed of safely and appropriately. The Agency will work with MAFF to ensure that the disposal of radioactive waste creates no unacceptable effects on the food chain. The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites, and the HSE on worker-protection issues at non-nuclear sites.

Agency Duty:	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership:
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to human health or detriment to local amenities.	• Grant waste management licence and vary conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations.	• The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and Local Planning Authorities. The Agency, as a consultee on planning applications, can advise on such matters.	The Agency will work with waste producers, the waste-management industry and Local Authorities to reduce the amount of waste produced, increase re-use and recycling and improve standards of disposal.
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment (pending new legislation).	• Regulate the remediation of contaminated land designated as special sites. (pending new legislation). • Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. • Report on the state of contaminated land.	• Securing with others, including Local Authorities, landowners and developers, the safe remediation of contaminated land.	The Agency supports land remediation and will promote this with developers, Local Authorities and others.
Conservation The Agency has a duty to further conservation and enhancement of flora, fauna, geological or physiographical features of special interest when carrying out functions other than pollution control; and have regard to flora, fauna, geological or physiographical features when carrying out pollution-control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	• The Agency uses its powers with regard to water management and pollution control to look for opportunities for furthering and promoting conservation.	• The conservation impacts of new development. These are controlled by Local Planning Authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to Local Authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Plan for which it is the contact point for 12 species and one habitat.	The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, Local Authorities, National Park Authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape (Natural Beauty) The Agency has a duty to further conservation and enhancement of the landscape when carrying out functions other than pollution control; and have regard to the landscape when carrying out pollution-control functions; and promote the conservation and enhancement of the natural beauty of inland and coastal waters and associated land.	• The Agency must further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution-control powers.	• The landscape impact of new development, particularly within river corridors. This is controlled by Local Planning Authorities.	The Agency produces Design Guidelines, which it uses when working with Local Authorities, National Park Authorities, organisations and developers and in Areas of Outstanding National Beauty, to conserve and enhance diverse river landscapes.

Agency Duty :	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership:
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• The Agency must promote its archaeological objectives through the exercise of its water-management and pollution-control powers and duties.	• Direct protection or management of sites of archaeological or heritage interest. This is carried out by Local Planning Authorities, County Archaeologists and English Heritage.	The Agency will liaise with English Heritage, Local Authorities, National Park Authorities, National Trust and other organisations, which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	• Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish-entrainment in abstractions. • Promote its fisheries duty by means of land-drainage consents, water abstraction applications and discharge applications. • Regulate the introduction of fish species to rivers and lakes.	• The determination of planning applications which could affect fisheries.	Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers, Local Authorities, National Park Authorities and organisations to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	• The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	• Promotion of water sports. This is carried out by the English Sports Council and other sports bodies.	The Agency will work with the Local Authorities, National Park Authorities, Areas of Outstanding Natural Beauty, Countryside Agency, the English Sports Council, British Waterways and other recreational and amenity organisations to further the recreational use of the water environment.

In addition to the above, the Environment Agency must have regard to:

- Any effect that proposals relating to any of its functions, would have on the economic and social well-being of local communities in rural areas.

APPENDIX 2 – LIST OF RESPONDENTS COMMENTING ON THE ACTION PLAN

Responded to Consultation

Name	Representing
Ian L Cheetham	Bury Metropolitan Borough Council
Francis Comyn	Rochdale MBC
Neil Edwards	Inland Waterways Association (Head Office)
Chris Findley	City of Walford
John C Fletcher	Inland Waterways Association (North West)
Vaughan Grantham	Greater Manchester Ecology Unit
Mr M Hanson	
Selina L Hill	English Nature – North West
Vicky Hinchliff	Lancashire County Council
Tony Hothersall	Red Rose Forest
Mr A A Johnson	
Mr B K Jones	Forestry Commission (NW England Conservancy)
Mike Kinsella	Groundwork Business Environment Association
John Lamb	Lancashire Wildlife Trust (East Lancs)
C McLeod	
Michael Payne	Regional Committee Member (RFERAC)
Adrian Pearce	Manchester City Council
Carel Quaife	British Canoe Union (Nottingham)
Tony Serjeant	The Rossendale Partnership formerly the Upper Irwell Partnership
Mrs Judith A Smith	County Bird Recorder
Geoff Storey	Bardon Aggregates
Martyn Walker	Lancashire Wildlife Trust (Greater Manchester)

Clare Warburton	Countryside Agency (North West) formerly the Countryside Commission
R J Warlow	MAFF, London
Patrick J Wisniewski	Wildfowl and Wetlands Trust
Workshop List:	
Mr W Allen	
Mr John Ashworth	Kearns of Waterfoot Ltd
Mr Philip Aspinall	
Susan Booth	British Waterways
Cllr John Byrne	
Mr Jim Cordiner	Manchester Ship Canal Co.
Mr Ron Crossley	
Mr David Dutton	Bury MBC
Mr Alan Duxbury	Rossendale BC
Cllr R Evans	
Jane Fawcett	Salford City Council
Joanna Firth	Burrs Country Park
Mr John Fletcher	Manchester Bolton & Bury CS
Mrs M Fletcher	Manchester Bolton & Bury CS
Mr John Gibson	Business Environment Association
Mr Wes Halton	
Mr John Heap	
Mr Chris Horth	Bury MBC
Mr Mike Hulme	Burrs Country Park
H Ireland	
Amanda Johnson	
Mr John Lamb	Lancashire Wildlife Trust

Mr T Leese	
J Amey Market	Bury MBC
Mr T McKee	Bolton & District AA
Cllr S Murray	
Carol Newman	English Heritage
Mr Kevin Newsham	Newsham & Associates
Roz Park	Trafford BC
Mr Michael Payne	IWA (NW) & RFERAC
Mr Rothwell	National Farmers Union
Mr Tony Serjeant	The Rossendale Partnership formerly the Upper Irwell Partnership
Judith Smith	BTO County Recorder
Janet Smith	
Amanda Stockley	Bury MBC
Mr Geoff Storey	Aggregate Industries UK Ltd
Mr Ivor Tamplin	Kearns of Waterfoot Ltd
Pat Waring	
Mr Chris Wilkinson	Bury MBC
Mr John Williams	
Mr Tom Wilson	Blackburn with Darwen BC
Mr Mike Winstanley	Countryside Warden Service
Mr Nick Wyatt	Blackburn with Darwen BC

APPENDIX 3 – GLOSSARY

ABSTRACTION LICENCE

Removal of water from surface or groundwater, either permanently or temporarily usually by pumping.

ABSTRACTION LICENCE

Licence issued by the Agency under S38 of the Water Resources Act 1991 to permit removal of water from a source of supply. It can limit the quantity of water taken on both a daily and annual basis.

ALGAL BLOOMS

Rapid growth of phytoplankton which may colour the water and may accumulate on the surface as a green scum. Decomposing dead cells consume large quantities of oxygen in the water which may result in the waters becoming anaerobic. Some blooms (such as certain species of blue-green algae) may produce poisons.

AMP

The programme of expenditure by NWW Ltd on environmental improvements is known as the Asset Management Plan (AMP). The amount of capital made available is determined by OFWAT and the DETR. The Agency then draws up a list of schemes in priority order so that the money is spent on the most important projects first. The AMP3 plan covering the period 2000 to 2005 is in the final stages of negotiation and the agreed list of projects is almost complete.

AQUIFER (see MAJOR AQUIFER)

A layer of underground porous rock, which contains water and allows water to flow through it.

ATTENUATION

Breakdown or dilution of a contaminant in water.

BATNEEC

Best available technology not entailing excessive cost.

BIOACCUMULATIONS

The process by which a compound is taken up by an aquatic organism from water or through food and retained.

BIOCHEMICAL OXYGEN DEMAND

A standard test which measures over five days the amount of oxygen taken up by aerobic bacteria to oxidise organic (and some in-organic) matter.

BIODIVERSITY

The diversity of life, the number of species present.

BPEO

Best Practical Environmental Option.

CATCHMENT

The total area from which a single river and tributaries collects surface runoff.

CHANNEL

A cutting in land along which a watercourse flows.

COMPENSATION FLOW

Water released from a reservoir to maintain the flow required downstream for other users and for the needs of the environment.

CONFLUENCE

Point where two, or more, rivers meet.

CONTROLLED WASTE

Household, commercial or industrial waste from a house, school, university, hospital, residential or nursing home, shop, office, factory or any other trade or business. It may be solid or liquid, but not necessarily hazardous or toxic.

CULVERT

Covered channel or large pipe to carry water below ground level e.g. under a road, railway or building.

CYPRINIDS

The carp family of fish comprising some 200 freshwater species.

DEPOSITION

Where a river flows more slowly it may deposit gravel, sand and silt in its channel – often on the inside edge of bends or meanders.

DIFFERENT UNITS FOR FLOW MEASUREMENT

m^3/s	Cubic metres per second (cumec)
l/s	Litres per second
Ml/d	Megalitres per day
Mgd	Millions of gallons per day

CONVERSION TABLE

m3/s	Ml/d	mgd
0.016	1	0.22
0.08	5	1.10
0.116	5	1.10
0.32	20	4.48
0.58	50	11.00
1.16	100	22.00

DIFFUSE POLLUTION

Pollution without a single point source e.g. acid rain, pesticides, urban run-off etc.

DRIFT

Superficial deposits covering solid rock. Often deposited by rivers or by former glaciation in the form of boulder clay, peat or sands and gravels.

DISCHARGE CONSENT

A statutory document issued by the Environment Agency under Schedule 10 of the Water Resources Act 1991 as amended by the Environment Act 1995 to indicate any limits and conditions on the discharge of an effluent to a controlled water.

DROUGHT ORDER

Drought Orders are made by the Secretary of State upon application by the Environment Agency or a water undertaker, under powers conferred by Act of Parliament, to meet deficiencies in the supply of water due to exceptional shortages of rain. The terms and conditions under which Drought Orders may be obtained are given in Sections 73-81 of the Water Resources Act 1991 and Schedule 22 5139 of the Environment Act 1995. Drought Orders are sub-divided into 'ordinary' and 'emergency' Drought Orders. A Drought Order could contain provisions to: authorise abstraction from an unlicensed source; override the condition on an existing abstraction licence; limit the amount of water which may be taken from a source; vary discharge conditions; allow the prohibition of use of water for particular purposes; allow a ban on non-essential use of water or introduce the use of stand-pipes.

EUTROPHICATION

Enrichment of water by nutrients causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned. The water body is said to be eutrophic.

FAUNA

Animal life.

FLUVIAL

Adjective of rivers.

FRESHWATER FISH

For the purpose of the Salmon and Freshwater Fisheries Act 1975, fish other than salmon, brown trout, sea trout, rainbow trout and char.

GEOMORPHOLOGICAL FEATURES

Physical features of a river, which include meandering (winding) channel, gravel beds and shoals, ox-bows, earth cliffs and river terraces.

HYDRAULIC CONTINUITY

The relationship between groundwater and surface water flow.

INCINERATION

Consume by fire and reduce to ashes.

Specialist high temperature incineration is the best option for many hazardous wastes, but for household and similar wastes, the main advantage is volume reduction. Expensive, but the heat may be recovered as an energy source.

INDICATIVE STANDARDS

Ministry of Agriculture, Fisheries and Food defined standards of flood protection according to current land use.

INVERTEBRATE

Animal without a backbone, for example, insects.

LANDFILL

The deposit of waste into or onto land, which can then be restored to some other use. The predominant method for the disposal of controlled waste in the U.K.

LANDFILL GAS

Gas arising from the natural biological degradation of organic materials in landfill. It consists mainly of methane and carbon dioxide and can cause problems such as damage to crops and vegetation, and hazards such as risk of asphyxiation or explosion in confined spaces. Landfill gas may, however, be exploited as an energy source.

LANDFILL TAX

Introduced in October 1996, a tax paid by landfill operators to ensure that landfill costs reflect environmental impact, thereby encouraging waste reduction, reuse and recovery.

LEACHATE

Solution formed when water percolates through a permeable medium. Can be mineral-rich, toxic or carry bacteria.

LOAD

A measure of the material carried by a river either in suspension or as dissolved material.

MAIN RIVER

A watercourse shown on the statutory 'main river map' held by the Environment Agency and MAFF, designated under the Water Resources Act 1991. The Environment Agency has permissive powers to carry out works of maintenance and improvement on these rivers. Formal consent is required for all activities that interfere with the bed or banks of the river or obstruct the flow.

MAJOR AQUIFER

Water bearing rocks, which are capable of yielding significant volumes of groundwater due to their high permeability and porosity.

MARGINAL

At the water's edge.

MESOTROPHIC

Water body containing a medium amount of nutrients e.g. nitrogen or phosphorus.

MINOR AQUIFER

Water bearing rock of limited extent, capable of supporting medium/small abstractions.

NON AQUIFER

Rock of low permeability containing little or no groundwater (may support very limited abstractions).

NON REAL TIME

Monitoring results, which are available at a date later than when the sampling took place.

OCHRE

Iron based orange discoloration.

OFWAT

Office of Water Industry's Financial Regulator of Water Services Companies.

OLIGOTROPHIC

Water body containing few nutrients e.g. nitrogen or phosphorus, often referred to as nutrient poor or nutrient deficient.

PASTURE

Semi-improved and improved grazed grassland.

POOL

A deep, slow-flowing section of a river or stream.

PRECIPITATION

The total amount of water, which falls as rain, hail or snow, expressed as mm or inches of rainfall over a specified period.

PRODUCER RESPONSIBILITY

A business-led approach which may be underpinned by legislation to achieve the reuse, recovery and recycling of waste.

REAL TIME

Monitoring results, which are available, when the sampling takes place.

RETURN PERIOD

The frequency within which, on average, an event of a certain severity may be expected to return (expressed in years).

REVETMENT

Regularly sized and shaped stones, timber or concrete blocks placed in an ordered fashion.

RIFFLE

A shallow but fast flowing part of a river or stream.

RIPARIAN

Of, or on, the banks of a river.

RIPARIAN OWNER

Owner of land abutting a river or lake. Normally, riparian owners own the bed of river to the mid point of the channel.

RIVER CORRIDOR

Stretch of river including its banks and the land close by.

SALMONIDS

Fish classified as belonging to the Salmon family, such as Salmon, Trout and Char.

SHOAL

A sand and/or gravel deposit at the edge of or within river channel.

SPECIAL WASTE

A strictly defined group of controlled wastes, which are considered to be particularly dangerous or difficult, usually by virtue of hazard or toxicity, and therefore subject to additional controls.

STRATA

Layers of rock.

SPATE

Very high flows usually associated with rainstorms, which may cause flooding. Spate flows naturally cleanse the river channel.

SUSTAINABLE YIELD

The quantity of water that can be abstracted without (i) exceeding average recharge, (ii) lowering the water table so as to permit intrusion of undesirable quality, and (iii) causing an unacceptable impact to the environment.

TOPOGRAPHY

Physical features of a geographical area.

TRANSFER STATION (Waste Disposal)

A licensed depot where controlled waste is stored and sorted for disposal and recycling.

TREATMENT

The physical, chemical or biological processing of certain wastes to reduce volume or pollution potential before recovery or disposal.

TROPHIC STATUS

Trophic status relates to the amount of nutrients present in a watercourse or body. It generally ranges between nutrient deficient (oligotrophic) and nutrient enriched (eutrophic).

WASTE MINIMISATION

Reducing the quantity and/or hazard of waste produced.

WATER TABLE

The surface of a body of groundwater within the underground strata. The water table will fluctuate as a result of natural or artificial causes.

APPENDIX 4 – ABBREVIATIONS

AOD	–	Above ordnance datum
ADAS	–	Agricultural Development Advisory Service
AMP	–	Asset Management Plan
APEM	–	Aquatic Pollution and Environmental Management (Consulting Company)
BOD	–	Biochemical Oxygen Demand
CMP	–	Catchment Management Plan
CSO	–	Combined Sewer Overflow
CSW	–	Contaminated Surface Water
DETR	–	Department of the Environment, Transport and the Regions
GDO	–	General Development Order
EC	–	European Commission
EO	–	Emergency Overflow
ESA	–	Environmentally Sensitive Area
EQS	–	Environmental Quality Standard
FWAG	–	Farming and Wildlife Advisory Group
GMEU	–	Greater Manchester Ecology Unit
GQA	–	General Quality Assessment
IFE	–	Institute of Freshwater Ecology
IPC	–	Integrated Pollution Control
LBAP	–	Local Biodiversity Action Plan
LPA	–	Local Planning Authority
MAFF	–	Ministry of Agriculture Fisheries and Food
NFU	–	National Farmers Union
NWW Ltd	–	North West Water Limited
OFWAT	–	Office of Water Services
PAH	–	Polycyclic aromatic hydrocarbons

QSL	–	Quality Survey Limit
RE	–	River Ecosystem
RHS	–	River Habitat Survey
RQO	–	River Quality Objective
RVI	–	River Valley Initiative
SAC	–	Special Area of Conservation
SBI	–	Site of Biological Importance
SCA	–	Supplementary Credit Approval
SPA	–	Special Protection Area
SSSI	–	Site of Special Scientific Interest
SUDS	–	Sustainable Urban Drainage Systems
SWQO	–	Statutory Water Quality Objectives
UDP	–	Unitary Development Plan
WML	–	Waste Management Licence
WwTW	–	Wastewater Treatment Works

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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

NW-07/00-500-Dii-BFNV

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