

local environment agency plan

BURTON, NUNEATON AND TAMWORTH

CONSULTATION DRAFT

NOVEMBER 1999



ENVIRONMENT
AGENCY

Our Draft Vision for the Burton, Nuneaton and Tamworth LEAP Area

The Environment Agency's overall aim is for 'a better environment in England and Wales for present and future generations'. We will achieve this aim by taking a sustainable and wide ranging approach to the way we protect and enhance the environment.

Our Vision for the Burton, Nuneaton and Tamworth LEAP area is:

A sustainable local environment through partnership.

Our Key Aims for the Area are to:

- Educate and raise awareness of the local environment and environmental issues.
- Influence people's behaviour so that we may all act in a more environmentally sustainable way.
- Work in an integrated manner towards resolving those issues and problems identified in the plan.

Our Key Objectives for the Area are to:

- Maintain and improve the water quality of rivers, canals and groundwater.
- Alleviate flooding by enhancing flood defences that are inadequate and providing additional defences where justifiable.
- Enhance flood warning systems.
- Ensure air quality is effectively monitored.
- Promote sustainable development of land.
- Promote waste minimisation and recycling and encourage better management of waste products.
- Support biodiversity through the protection and enhancement of species and habitats.
- Ensure proper management of valuable water resources.
- Ensure existing fisheries are preserved and enhanced.

We will achieve this by:

- Ensuring that the needs of all users and the environment are considered through partnership
- Integrated and sustainable environmental management.
- Balancing differing demands on the resources of the area.
- Regulation of activities with a potential impact on the environment.

Together, through commitment and enthusiastic co-operation our vision can become reality.



PHILIP BURNS

Area Manager, Upper Trent Area, Midlands Region

Key Details for the area

Population:

(Census Data 1991)

Major Settlements Population

Burton upon Trent	(1997) 48,940
Nuneaton	76,447
Tamworth	(1997) 70,065
Swadlincote	(1997) 4,800
Ashby de la Zouch	12,083
Coalville	30,878
Atherstone	8,047
Hinckley	47,887

Water Resources:

Average annual rainfall	620mm
Total licensed abstraction -	1270 MI/d
	112500 MI/a
No. surface abstractions	204
No. groundwater abstractions	185
No. licensed impoundments	12

Conservation:

Special Areas of Conservation	1
Special Protection Areas	0
Sites of Special Scientific Interest	19
Sites of Importance to Nature Conservation	280
Wildlife Trust Reserves	2
RSPB Reserves	0
Local Nature Reserve	2
Area of Special Landscape Value	2
Scheduled Ancient Monuments	31
Scheduled Historic Park and Garden	1

Fisheries:

Length of designated rivers (km)	16.0
Salmonid (salmon and trout)	0
Cyprinid (coarse fish) - river	16.0
Cyprinid (coarse fish) - canal	59.5

Flood Defence:

Length of "main" river (km)	207
Length of defended river (km)	13

Consented Discharges:

Sewage Treatment Works	53
Sewage & Storm Overflows	146
Emergency Overflows	80
Private Sewage Treatment Plants	133
Industrial Discharges	154
Septic Tanks	138

Waste Management:

Landfill sites	24
Transfer stations	25
Licensed scrap yards	8
Exempt scrap yards	246
Civic amenity sites	6

Integrated Pollution Control (IPC):

IPC Authorised Processes	11
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Radioactive Substances (RAS):

Sites with authorisations for accumulation and disposal of radioactive waste	3
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Sites with registrations to hold radioactive materials	44
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Monitored Water Quality:

Length of river in grade (km) 1997 data

Quality	Grade	Chemistry	Biology
Good	A	0	0
	B	67	6
Fair	C	107	98
	D	31	54
Poor	E	24	21
Bad	F	0	10

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- LEAP boundary
- River
- Canal
- Built up areas
- Unitary Authorities
- Counties
- Motorway
- A road
- Railway



0 10km

Questionnaire – Page 2



6 What best describes your interest in this LEAP?

- ☐ An officer working for a local authority or government agency/ department
- ☐ An officer/representative of a national organisation
- ☐ A member of an environmental pressure group
- ☐ A representative of a private company
- ☐ A member of a local sports club
- ☐ A member of a local amenity society (e.g. Civic Trust)
- ☐ A local resident
- ☐ An individual interested in environmental matters

Other (please specify):

7 Are there other issues you would like to see included in the Action Plan? Y / N

If "yes" please give brief details (use separate sheets if necessary):

8 Are there any major errors or omissions in the report? Y / N

If "yes" please give brief details (use separate sheets if necessary):

9 If you would like a reply, please write your name and address below. Your address will not be given to anyone else, although this questionnaire will be available for public inspection.

Name:

Address:

.....

.....

.....

Post Code:

Comments

If you have any further comments, please write them here or continue on another piece of paper.

Thank you for completing this questionnaire.

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Questionnaire – Your views count



The aims of the Burton, Nuneaton and Tamworth LEAP Consultation Draft and Leaflet are:

 To inform you of our vision and the issues we think need tackling, whilst providing background environmental information.

 To receive your views and comments. This is your opportunity to tell us what you think and you can help by filling in this questionnaire **or** by sending a separate written statement. All comments received will be treated as public information unless you state otherwise.

i) Please answer the following questions (it should only take 5 minutes).

ii) Please add any further comments on the back of the sheet.

iii) Detach the questionnaire and send it to us in the FREEPOST envelope provided.

Questions

1 Have you heard of the Environment Agency before? Y/N

2 How did you find out about this Local Environment Agency Plan? (Please tick box)

Letter from the Environment Agency ☐
Environment Agency displays ☐
Radio ☐
Television ☐
Newspaper ☐

Other (please state)

3 Where did you get this report/summary leaflet?

.....
.....

4 The principal aim of the Environment Agency is to "contribute to sustainable development".

Do you understand what is meant by the term "sustainable development"? Y/N

5 We have identified issues and options in Chapter 3 of the Consultation Draft and in the summary leaflet. Please circle and mark the five issues of most importance to you, ranking them in order.

(1 = Most important, 5 = Least important)

- | | |
|----------|---|
| Issue 1 | The Effects of Power Stations on Local Air Quality |
| Issue 2 | Groundwater Resources in the Burton Deep Aquifer |
| Issue 3 | Groundwater/Surface Water Interactions in the Mease Catchment |
| Issue 4 | Local Biodiversity |
| Issue 5 | Sustainability of Fish Populations in the Plan Area |
| Issue 6 | Contaminated Run-off from Mining Activities |
| Issue 7 | Land Use, Conservation and Recreation in River Valleys and Flood Plains |
| Issue 8 | Changes in Agricultural Land Use |
| Issue 9 | Loss of Habitat Diversity on Rivers in the LEAP Area |
| Issue 10 | Water Quality in Rivers and Canals |
| Issue 11 | The Impact of Canal Restoration Schemes |
| Issue 12 | Sustainable Urban Drainage |
| Issue 13 | Main River Flooding |
| Issue 14 | Easter 1998 Floods: Lessons Learned by the Agency |
| Issue 15 | Water Level Management Plans |
| Issue 16 | The Birmingham Northern Relief Road |
| Issue 17 | Flytipping, Litter and Aesthetic Pollution of Rivers and Canals |
| Issue 18 | Enclosure of Waste Transfer Stations |
| Issue 19 | Campaigning on Waste Minimisation |

More questions overleaf ...

Acknowledgements

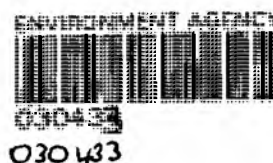
This report has been compiled by the Agency with contributions from key organisations operating in the area.

The following Agency staff are members of the Project Group responsible for the development of this report. Other members of staff have also contributed through the Project Group.

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Keith Boyle	Environment Protection Officer
Vic Brown	Team Leader – Development Control
Rachel Cowlishaw	IPC/RAS Technical Support Officer
Andrew Crawford	Conservation and Recreation Officer
Matt Davies	Tactical Planning Officer
John Floyd	Tactical Planning Officer
Sharron Holland	Planning Officer
Antony Lancaster	LEAPs Planner
Mark Lynskey	PIR/RSR Officer (Development)
David Othen	Team Leader – IPC/RAS
Gillian Roe	Water Resources Officer
Philip Wormold	Biologist

This is the fourth Local Environment Agency Plan (LEAP) to involve the Upper Trent Area Environment Group, our local consultative panel for all aspects of Agency activity. The Agency wishes to express its thanks to the Area Environment Group, in particular the Burton, Nuneaton and Tamworth Sub-Group for their comments and advice regarding the production of this report. The members of the Sub-Group and their interests are shown below:

Dr Phillip Bennion	Farmer, Botanist, Stewardship
Mr Frank Gribble	Ornithology
Dr Helen Whitehouse	Occupational Physician, Navigation, Conservation, Recreation
Mr Peter Herbert	Retired Chief Civil Engineer



What is this report about?

This report highlights the specific environmental issues in the Burton, Nuneaton and Tamworth area, which are within the Environment Agency's remit or that can be addressed through partnerships. The Agency has identified the issues and made suggestions on how they can be tackled. The plan area is shown in Map 1.

Why should I read it?

The Agency wants to hear your views on the issues facing the environment of the area and what you think should be done about them. Telling us your views will enable you to contribute to environmental protection and improvement and influence what the Agency and others do. We will be pleased to receive any comments that you wish to make but in particular we are very keen to know:

- ☐ how important do you think the issues are?
- ☐ what you think should be done about them?
- ☐ what do you think of our proposals?
- ☐ are there problems or opportunities that we have not included?
- ☐ whether you can help to tackle any of the issues.

What will the Agency do with my comments?

The Agency will consider your comments prior to the production of an Action Plan, which will set out proposals to protect and improve the environment of the area. If you want us to, we will reply to you on your specific comments, letting you know how they have influenced our actions, and if appropriate, the actions of others. **All comments will be treated as public information unless you ask us otherwise.**

If you want more copies of this document for colleagues or other organisations that you think would be interested, we will be pleased to send them free of charge.

Your views on this report will be considered in preparing the next phase, the Action Plan. **The consultation draft will not be rewritten as part of the action plan process.** However, any errors or omissions will be acknowledged in a statement on the public consultation response, to be published soon after the consultation period, which ends on 18 February 2000.

The Agency hopes that the Burton, Nuneaton and Tamworth Action Plan should also influence the policies and actions of Local Authorities, developers and others as well as assisting the Agency in the day to day management of the LEAP area.

Please return your comments to us by 18 February 2000

How can I make my views known?

We will be holding events during the consultation period that will provide an opportunity for you to discuss this plan with us. In addition the LEAP will be promoted by means of display boards in public facilities such as libraries.

Further details on the times and venues of these events are available from Antony Lancaster at the address shown below.

You can contact us by:

- ☐ Using the questionnaire and freepost envelope included at the back of this report;
- ☐ Writing to us using the freepost envelope;
- ☐ Telephoning us on 01543 444141;
- ☐ Faxing us on 01543 444161;
- ☐ Or you can e-mail us at antony.lancaster@environment-agency.gov.uk

Please address your comments to: Antony Lancaster
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Privacy Note

Response to this consultation is purely voluntary. The content of all responses will be used by the Agency to assist in carrying out its statutory duties and the general details will be made public. Unless you specifically request otherwise or indicate that your response is confidential, we will also make public your name and a general summary of your comments in response to this consultation. If you have no objection to or would prefer the full content of your response being made public and copied freely please indicate this in your response. Your right of access to the information held and right to apply for rectification of the information are as prescribed in current data protection legislation.

If you are reading this document after the consultation period has ended, 18 February 2000, we would still be interested in hearing your comments and your views, as they will be useful for future plans, and quite possibly for our current activities. The address for sending your comments is shown above.

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Photograph 1 – The River Anker at Witherley



**Burton, Nuneaton and Tamworth
Local Environment Agency Plan**

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The Consultation Draft

The Consultation Draft introduces the work and responsibilities of the Environment Agency and the LEAP process. It gives a brief description of the resources of the area and highlights the environmental issues that we consider need to be tackled. It also looks at partnerships, areas of joint working and the work of others which, in the long term, will raise the quality of the local environment.

The Consultation Draft is divided into four sections:-

Section 1 – Introduction. This section is an introduction to the Environment Agency and to the LEAP process.

Section 2 – The LEAP Area. This section provides a general description of the plan area and the resources of air, land, water, wildlife and heritage.

Section 3 – Issues and Options. Here we identify the issues and problems that we consider should be addressed locally in the short to medium term and put forward a number of options for their resolution.

Section 4 – Protection through Partnerships. This section looks at sustainable development, partnerships, land use planning and education which can be used to address longer term issues and problems and raise the quality of the local environment.

The Consultation Draft will be supported by a separate document produced by the Environment Agency 'Environmental Overview for the Burton, Nuneaton and Tamworth LEAP' and this should be completed by early 2000. This provides additional information on the activities, uses and pressures on the environment and the state of the local environment as measured by the Agency and others in relation to local, national and international targets. The Environmental Overview will not be included in the consultation process.

1.1 The Environment Agency

The Environment Agency of England and Wales was established on 1 April 1996 by the 1995 Environment Act. It is a "non-departmental public body" accountable to the Secretary of State for the Environment, Transport and the Regions and has taken over the functions of previous, separate environmental regulators:

- The National Rivers Authority (NRA) which had responsibility for the water environment;
- Her Majesty's Inspectorate of Pollution (HMIP) which had responsibility for regulating the largest and most potentially polluting industrial processes and regulated the use and disposal of radioactive material;
- The 83 Waste Regulation Authorities which had responsibility for waste regulation in local authorities; and
- A small number of technical sections from the Department of the Environment.

This merger allowed for a more comprehensive and holistic approach to the protection and management of our environment and the Environment Act also gave the Agency new responsibilities and duties. The Agency covers England and Wales (with separate organisations for Scotland and Northern Ireland) and is divided into eight regions and twenty-six areas. Most of the Agency's work is undertaken at the area level and this allows for an efficient and appropriate response to the delivery of our services.

The Agency has a wide range of duties and powers relating to different aspects of environmental management. It is required and guided by Government to use these duties and powers in order to help achieve the objective of sustainable development. The Brundtland Commission defined sustainable development as "*... development that meets the needs of the present without compromising the ability of future generations to meet their own needs*".

At the heart of sustainable development is the integration of human needs and the environment within which we live. Indeed the creation of the Agency itself was in part a recognition of the need to take a more integrated and longer-term view of environmental management at a national level. The Agency therefore has to reflect this in the way we work and in the decisions we make.

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

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

Much of the UK's environmental legislation originates from the European Union. To date there have been five EC Environmental Action Programmes which have collectively given rise to several hundred pieces of legislation of relevance to environmental protection, one of the most recent being the Directive on Integrated Pollution Prevention and Control. A number of other directives are currently under consideration, covering issues such as water management, air quality and the management of waste using landfill.

The Agency also has to work in a wider international context because it is now generally accepted that environmental changes are occurring on a global scale. Individual countries contribute to these changes, and respond to them, in different ways. The Agency's long-term strategy therefore has to reflect these global issues, and it has to be delivered within the framework of international and national commitments, which has been developed to address them.

Perhaps the major international issue is that of climate change. The UK is a contributor to the emission of gases such as carbon dioxide into the atmosphere, which are believed to contribute to long-term climate changes. The UK will also be affected in a complex way as and when the climate does change. It is therefore a signatory to the Framework Convention on Climate Change, as agreed at the Rio Summit in 1992, and is taking an active part

in international negotiations to obtain commitments beyond the year 2000 for credible, effective, and achievable reductions of greenhouse gas emissions.

Another outcome of the United Nations "Earth Summit" held in Rio de Janeiro in 1992 was agreement by governments that, in order to solve global environmental problems, local action is crucial: we must all therefore think globally but act locally. The Local Agenda 21 initiative sets out actions needed to achieve sustainable development, including the need to make clear the links that exist between local life-styles and the use of resources. In the UK plans have now been formulated by local government and local communities to identify and address a wide range of environmental issues including natural resource use, pollution, health, local amenity and quality of life. These programmes set out long-term solutions that take account of global implications, such as the use of resources that affect the global environment and thus local communities in other parts of the world.

The Agency is committed to a programme of Local Environment Agency Plans (LEAPs) in order to produce a local agenda of integrated action for environmental improvement. These LEAPs will also allow the Agency to deploy its resources to best effect and optimise benefit for the local environment.

1.1.1 The Principal Aim and Vision of the Environment Agency

The principle aim of the Agency is defined under Section 4 of the Environment Act 1995 as: *"In discharging its functions so to protect or enhance the environment, taken as a whole, as to make the contribution towards attaining the objective of achieving sustainable development that ministers consider appropriate".*

The Agency's vision is *"A better environment in England and Wales for present and future generations"*.

1.1.2 The Environmental Strategy

In September 1997 the Environment Agency published *"An Environmental Strategy for the Millennium and Beyond"* which clearly sets out a new environmental approach to meet the Agency's principal Aim and to achieve the Agency's Vision. The strategy states the overall aims of the Environment Agency. These 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 seas.
- To reduce the amount of waste by encouraging people to re-use and recycle their waste.
- To improve standards of waste disposal.
- To manage water resources to achieve the proper balance between the country's needs and the environment.
- To work with other organisations to reclaim contaminated land.
- To improve and develop salmon, trout, freshwater and eel 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.

This will be done 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 business like in all we do

1.1.3 Responsibilities of the Agency and those outside our remit

The Agency's work and responsibilities do not cover all aspects of environmental legislation or services to the general public. There are other statutory and non-statutory bodies who have responsibilities and Table 1 summarises those environmental concerns the Agency has responsibility for and those we do not.

Table 1 - Environmental concerns: who is responsible?

Environmental concern	Responsible party
Low flows in main rivers	Environment Agency
The use and disposal of radioactive materials	Environment Agency
Water quality in Main rivers & ordinary watercourses	Environment Agency
Flooding of property from Main river	Environment Agency
Air pollution from large industry (Part A processes)	Environment Agency
Navigation on some rivers	Environment Agency
Fish Mortalities and Pollution Incidents	Environment Agency
Waste Management	Environment Agency
Waste Minimisation / Recycling	Environment Agency / Local Authority
Waste Planning	Environment Agency
Regulation of waste disposal facilities	Environment Agency / Local Authority
Flooding from property from non main river (ordinary) watercourses	Local Authority
Local planning issues	Local Authority
Environmental Health	Local Authority
Noise	Local Authority
Litter	Local Authority
Smoke from bonfires	Local Authority
Smoke from domestic chimneys	Local Authority
Air pollution from traffic	Local Authority/Police
Air pollution from small industry (Part B processes)	Local Authority
Contaminated land	Local Authority (or Environment Agency)
Strange taste, smell or colour of mains tap water	Water company
Problem with mains water supply	Water company
Burst water mains	Water company
Flooding of property from foul sewer	Water company
Navigation on canals and some rivers	British Waterways
Damage to SSSI's	English Nature

If you know of other environmental concerns which are not shown in the above table and would like to know who has responsibility then please contact us.

1.1.4 Regional Committees and Area Environment Groups (AEGs)

In order to support openness, objectivity and accountability, the Agency is required by law to consult committees on all aspects of its work. Membership of the regional committees consists of local people drawn from public life including industry, agriculture, Local Authorities and environment groups.

Three committees serve the Midlands Region: -

- **Regional Environment Protection Advisory Committee (REPAC).** This Committee was appointed under the Environment Act 1995. Under the Act it is the duty of the Agency to consult the Committee about proposals relating generally to how the Agency carries out its functions. This broad remit allows the Committee to take a strategic overview of Agency activities, identify issues of special importance to the Region, and act as a sounding board for policy initiatives.
- **Regional Flood Defence Committee (RFDC).** This is the executive Committee through which the Agency is required to discharge its flood defence and land drainage functions in the Region.
- **Regional Fisheries, Ecology and Recreation Advisory Committee (REFERAC).** The agency has a statutory duty to:
 - a) consult REFERAC on how the Agency carries out its duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries, and
 - b) also to consult the Committee on recreation, navigation and relevant conservation issues

The Upper Trent Area is served by its own Area Environment Group (AEG). Membership consists of local people who live or work in the area and who represent a wide range of interests. These include Local Authorities, industry, agriculture, conservation, amenity and recreational interests and riparian owners. The group advises the Agency on LEAPs (see 1.2), the delivery of local services and act as a link between the local community, the Agency and its statutory committees. The AEG has set up sub-groups to consider all draft LEAP documents. The members of the sub-group involved with the development of this LEAP are detailed on page (ii).

1.2 Local Environment Agency Plans (LEAPs)

The Agency is committed to delivering environmental improvement at the local level and one of the ways to do this is through Local Environment Agency Plans. These plans will reflect our close contact with industry, the public and Local Government and will contribute towards achieving sustainable development.

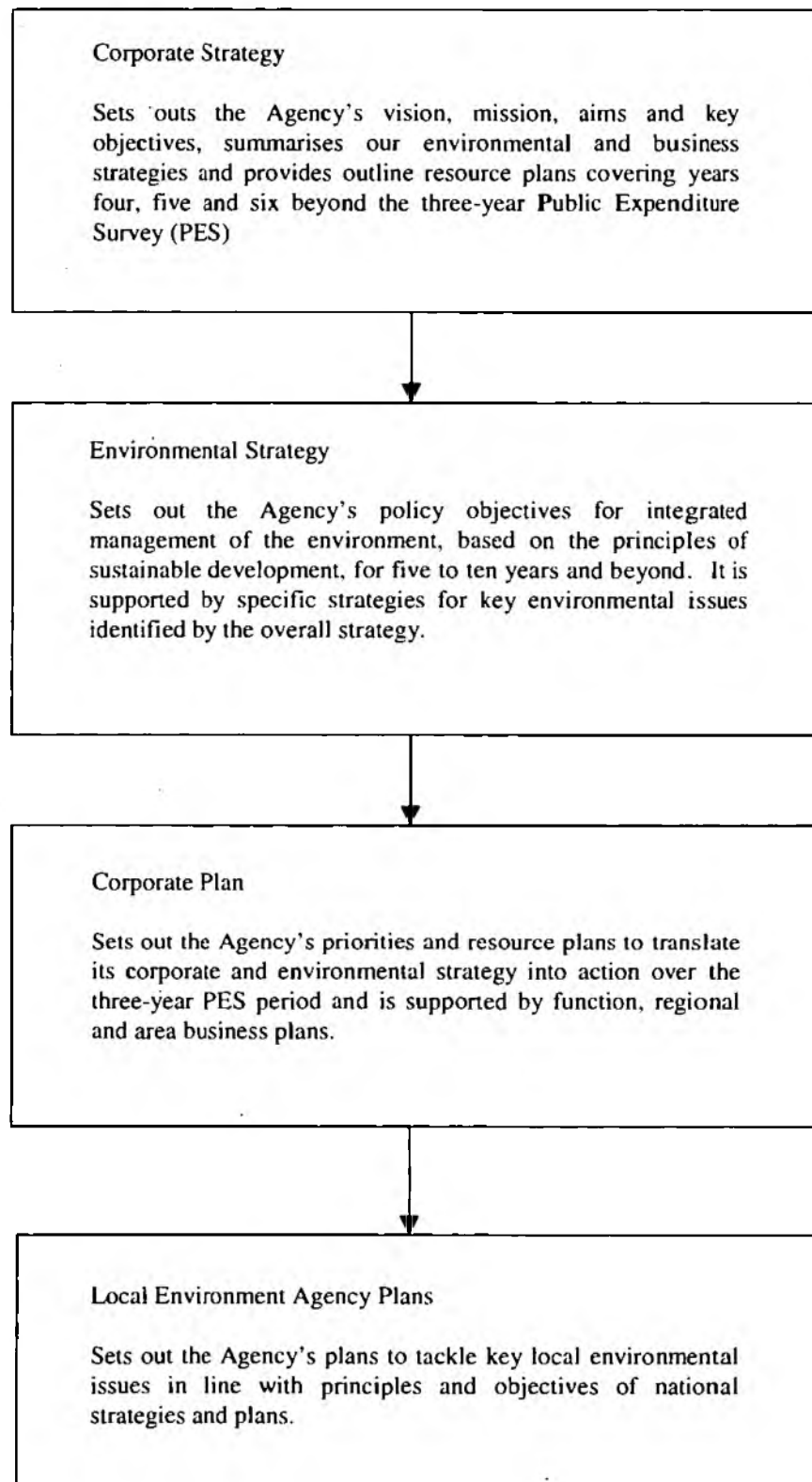
The process of drawing up the plans will involve close consultation with all interested parties. It will promote the effective, accountable and integrated delivery of environmental improvement at the local level. The plans will translate policy and strategy into delivery on the ground and will result in actions, either for the Agency to fulfil, or for others to undertake through influence and partnership. We believe the process will benefit the local community by influencing and advising external decision makers and public opinion. It will build trust by being open and frank when dealing with all issues.

LEAPs are a first step towards environmental planning. They provide a focus for those concerned with the future of the local area. Each LEAP will provide a framework to enable:

- Setting of local targets for improving environmental quality;
- Translation of national policies and priorities into local actions;
- Assessment of the costs and benefits of proposed actions;
- Partnerships for solving environmental issues, in connection with Local Agenda 21 initiatives;
- Promotion of the Agency's own work through education and our interface with local planning authorities.

The "Environmental Strategy for the Millennium and Beyond" and LEAPs are key parts of the Agency's corporate planning framework. Together with management plans, core-functional business plans and Regional and Area business plans, they will translate our strategic goals into local objectives and targets. The corporate planning framework is summarised in figure 1.

Figure 1 – The Agency's Planning Framework



LEAP areas are generally based around river catchments and the Burton, Nuneaton and Tamworth LEAP is one of four catchment areas in the Upper Trent Area of the Midlands Region.

Figure 2 – The Four LEAP catchments in the Upper Trent Area



Solihull – Regional Office
Lichfield – Area Office

The Upper Trent Area LEAP programme is shown in Table 2. The Burton, Nuneaton and Tamworth LEAP is part of a national programme whereby every catchment in England and Wales will be covered by a LEAP Consultation Draft by 31 December 1999.

Table 2 - Upper Trent Area LEAP programme

Catchment	Start	Consultation Starts	Issue Action Plan	1st Annual Review
Staffordshire Trent Valley	October 1996	June 1997	February 1998	June 1999
West Midlands Tame	May 1997	March 1998	March 1999	May 2000
Dove	August 1998	May 1999	February 2000	April 2001
Burton, Nuneaton & Tamworth	February 1999	November 1999	August 2000	October 2001

1.2.1 The Consultation Draft

This document, the Consultation Draft, is the first output from the LEAP process, and is not the final plan. To assist in the preparation of this report, an informal consultation exercise was undertaken with a range of organisations and groups in March 1999. Those who were consulted and responded are listed in Appendix 2.

1.2.2 The Action Plan

Through consultation a shared vision will be developed, along with a strategy for action. This will, within human and financial resource constraints, guide Agency activities for the next five years and influence the activities of other groups. Public participation is important as it increases environmental awareness and encourages greater involvement and ownership of the local environment.

The target date for the production of the Action Plan is August 2000. Implementation of the Action Plan will be the five-year period from publication (August 2000) through to 2005.

1.2.3 Annual Reviews

Regular monitoring and updating of the plan will be an integral part of the process. Annual review reports will be published leading to a full review and fresh consultation at the end of five years.

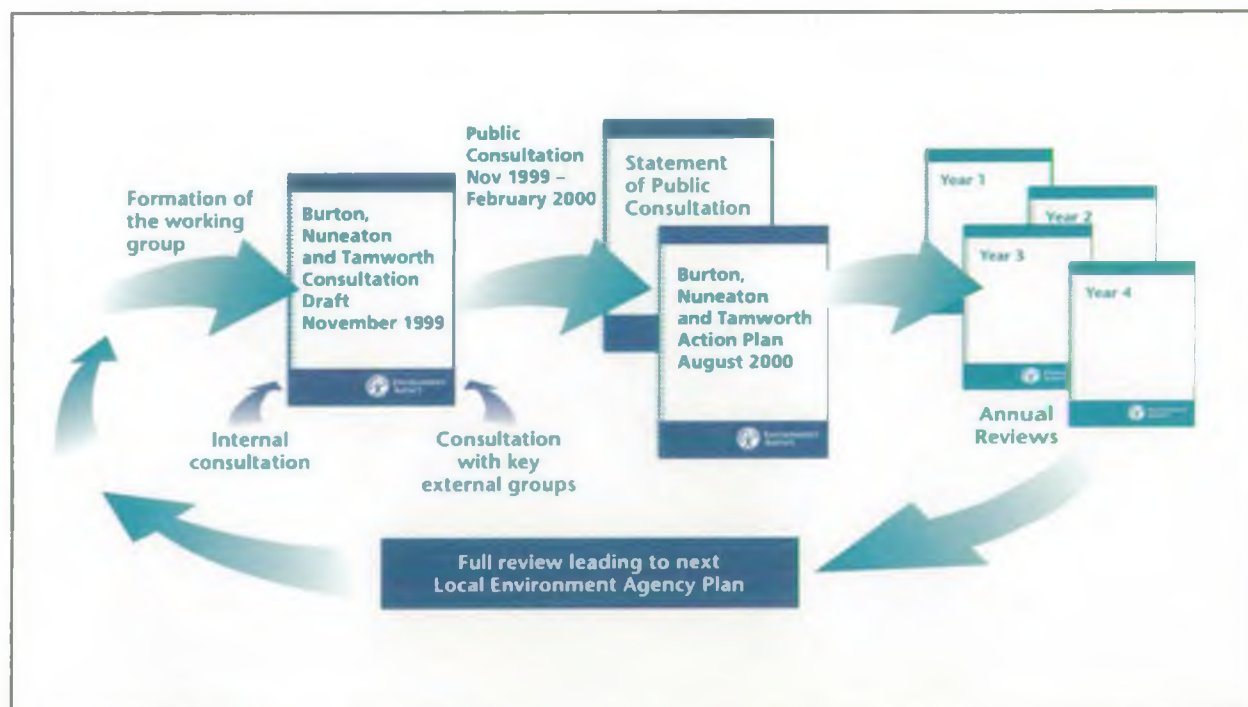


Figure 3 - The LEAP process and the main outputs in the five-year cycle

1.2.4 LEAPS and other plans

The Agency shares the regulation and management of the environment with others. Whilst LEAPs are the Agency's plans, their content and development will reflect these shared responsibilities. LEAPs will compliment and integrate with other organisations' plans such as Waste Local Plans, Local Air Quality Management Plans, Local Development Plans and Local Agenda 21 plans.

Introduction

The Burton, Nuneaton and Tamworth LEAP area extends to about 960 sq km and is based on the catchment of the River Trent in its middle reaches between Alrewas near Lichfield and Newton Solney to the north of Burton-upon-Trent. Gilwiskaw Brook and Hooborough Brook form significant tributaries to the east draining the South Derbyshire/North Leicestershire coalfields around Swadlincote and Ashby de la Zouch.

Also included is the River Tame catchment as far south as Kingsbury and in turn its main tributaries, the Bourne and Fotherley Brooks draining from Lichfield, Burntwood, Brownhills, Aldridge and Sutton Coldfield to the west and the River Anker draining from Hinckley, Bedworth, Nuneaton and Atherstone to the east and joining the Tame at Tamworth. The River Anker is itself joined by the River Sence and Sence Brook draining as far east as Coalville.

Population in the area has been steadily rising in recent years, particularly in the south around Tamworth, Lichfield, Nuneaton and Hinckley, and partly reflects an outward migration from Birmingham. The three main towns are Burton-upon-Trent in the north (population 48,940 (1997)), Tamworth positioned centrally within the area (population 70,065 (1997)) and Nuneaton in the south-east (population (76,447 (1991))).

Agriculture is the main land use in the LEAP area and has a number of important roles to play in the countryside as well as its essential role of food production. They include management of the hedgerows, trees and ponds that contribute to the character of the countryside; environmental protection and enhancement; and as sources of employment and entrepreneurial activity to sustain the rural economy.

The employment base contains a mix of manufacturing, service and extractive industries. Sand and gravel workings occur, or have occurred, at various locations along the Tame and Trent and its management both during and after extraction requires particular care. Unlike many other parts of the Midlands, coal mining retains a presence in South Derbyshire/Leicestershire, although it remains vulnerable. Now undertaken as open cast, it has made a significant mark on the landscape, making co-ordinated reclamation and aftercare of large areas of worked land important. The characteristics of local groundwater at Burton-upon-Trent have led to it becoming famous as Britain's main brewing centre.

The main arterial roads are the M42 linking Birmingham with the M1 south of Nottingham and passing Tamworth and Ashby de la Zouch, the parallel A38 again linking Birmingham with the M1 and passing Lichfield and Burton upon Trent and the A5 which passes between Hinckley, Tamworth and Brownhills along the line of the Watling Street Roman road. The proposed construction of the Birmingham Northern Relief Road to pass through Birmingham's green belt to the north of Sutton Coldfield represents a significant challenge to the protection of the environment, both during construction and via the subsequent development pressures which are bound to follow.

Photograph 2 – The Coventry Canal near Hartshill



There are a number of rail links crossing the area, serving both national and local networks. The proposed Hams Hall Railhead to the south will exert a significant influence on freight movements across the area. Canals are also important, and form the north-east access and egress for the Birmingham canal network by means of the Birmingham & Fazeley, Coventry and Trent & Mersey canals. In addition the Lichfield and Ashby canals each have associated groups implementing their restoration.

2.1 Land

2.1.1 Local Administration

The LEAP area stretches across four County Council boundaries and takes in all or part of 10 District or Borough Council administrative areas and two unitary authorities. Details are shown below.

Table 3 - Administrative Details

Local administration in the plan area		
County Councils	Unitary Authorities	District/Borough Councils
Derbyshire Leicestershire Staffordshire Warwickshire	Birmingham City Council Walsall Metropolitan Borough Council	Cannock Chase District Council East Staffordshire Borough Council Hinckley and Bosworth Borough Council Lichfield District Council North West Leicestershire District Council North Warwickshire Borough Council Nuneaton and Bedworth Borough Council Rugby Borough Council South Derbyshire District Council Tamworth Borough Council

2.1.2 Land Use

Agriculture is the main land use in the LEAP area, covering approximately 80% of the area. Grade 3 land (defined as good to moderate quality) predominates with about 73% of the agricultural land; grade 2 (very good quality) covers some 23%, the comparable figures for England being 54% and 21% respectively. The higher quality land is concentrated around Lichfield in the west and in North West Leicestershire. About one third of farms are categorised as producing cereals (about 65% of land area) and general cropping, in the livestock sector 12% are dairying, 18% cattle and sheep with 12% mixed (cropping and livestock).

Woodland is less well represented tending to be either scattered remnants of ancient or semi-ancient woodland, small plantations or shelter belts. There are however proposals to plant two large forest areas; the Forest of Mercia, part of which would lie around the Burntwood/Brownhills area and the National Forest planned to occupy the northern part of the LEAP area. Much of the proposed National Forest area coincides with the South Derbyshire/Leicestershire Coalfield, a traditional coal mining area centred around Swadlincote and Moira. The proposal recognises the contribution woodland planting could play in reclaiming large areas of despoiled land. Urban land is found in a number of locations, in particular Burton upon Trent, Swadlincote, Coalville, Brownhills, Sutton Coldfield, Tamworth, Atherstone, Nuneaton, Bedworth and Hinckley.

Development Plans identify the following key land pressures. In Staffordshire, the Stafford and Stoke-on-Trent Draft Structure Plan 1996-2011 identifies Lichfield as a major new housing development location and Tamworth as a major location for new industry. The Tame/Trent corridor between Tamworth and Burton-upon-Trent is identified as a Water Recreation Area recognising the potential recreational after-use of gravel pits and the rivers themselves. Part of the Birmingham green belt stretches northwards towards Tamworth and Lichfield. This area will be subject to increasing development pressures allied to the proposed construction of the Birmingham Northern Relief Road. The draft Nuneaton and Bedworth Borough Local Plan identifies housing allocations for about 5000 new dwellings in and around Nuneaton.

Burton, Nuneaton & Tamworth Local Environment Agency Plan Map 2



**ENVIRONMENT
AGENCY**

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Administrative Areas

KEY

- LEAP boundary
- River
- Canal
- Built up areas
- Unitary Authorities
- Counties
- Motorway
- A road
- Railway
- Local authorities:
- Birmingham
- Cannock Chase district

- East Staffordshire district
- Hinkley and Bosworth district
- Lichfield district
- North Warwickshire district
- North West Leicestershire district
- Nuneaton and Bedworth district
- Rugby district
- South Derbyshire district
- Tamworth district
- Walsall



2.1.3 Landscape

The Countryside Agency and English Nature together with help from English Heritage, have produced a map of England which depicts cultural and natural dimensions of the landscape. These are represented as Landscape Character Areas for landscape purposes and Natural Areas for nature conservation purposes. Natural Areas are considered in section 4 of this chapter.

The landscape of the LEAP area falls mainly into three of the landscape character areas as defined by the Countryside Agency. These coincide with the following areas for which landscape character is briefly summarised.

69 Trent Valley Washlands

A distinct, linear landscape character area taking in the middle reaches of the River Trent and the lower Tame with rising ground on both flanks. The Washlands comprise a somewhat fragmented landscape of pastoral and arable land intermixed with urban development and the sand and gravel industry. Within the valleys, the rivers are unobtrusive, meandering between high flood banks, and often only revealed by lines of willows and poplars. Recently restored gravel pits form a network of water-bodies used for water sports, or maintained for conservation or informal recreation purposes.

71 Leicestershire and South Derbyshire Coalfield

The Thringstone Fault forms an abrupt boundary to the east. To the north land falls, often quite steeply, to the wooded landscape of the Melbourne Parklands above the River Trent, while to the south it falls away more gently. There is very little woodland or scrub. The open character is emphasised by the hedgerows which tend to be low, and hedgerow trees tend to be infrequent. Farmland is in mixed arable and pasture use. Within this rural landscape are the tips of deep mines, abandoned colliery sites, tramways and opencast sites. In the north east around Moira are the pits of the fireclay industry, while in the south around Ibstock some of the extensive brick pits are still active and there are substantial buildings. Landform is one of gentle ridges and shallow valleys. A quite dense settlement pattern is dominated by mining villages and the towns of Coalville, Swadlincote and Ashby de la Zouch.

72 Mease/Sence Lowlands

Claylands characterised by extensive areas of arable cultivation with low, sparse hedges and few hedgerow trees. Landform is very gently rolling clay ridges and shallow valleys, becoming virtually flat around the Sence and Mease. Small villages, generally on the crests of the low ridges, are the most prominent feature in the landscape, other than pylons.

Photograph 3 – The landscape of the Mease / Sence Lowlands looking towards Market Bosworth



Six further character areas define small parts of the LEAP area:

67 Cannock Chase and Cank Wood

Part of this area extends eastwards towards Lichfield comprising large arable fields, coverts and belts of trees. Land is in cultivation although the areas heathland origins are evident from the vegetation in the hedgerows and small woodlands. Settlement is generally very sparse.

68 Needwood and South Derbyshire Claylands

A rolling plateau divided by the wide, shallow valley of the River Dove. In the southern part, just west of Burton upon Trent, the landscape is characterised by areas of deciduous and coniferous woodland, straight roads and rectilinear enclosure fields bounded by hedgerows. The remnants of the semi-natural woodlands include core fragments of the Needwood Forest on heavy, poorly drained soils. Red brick villages and sandstone churches lie on the edge of these forest areas

70 Melbourne Parklands

The parklands lie to the north of the ridge of high ground between Swadlincote and Burton upon Trent. The area has extensive areas of arable cultivation with low, sparse hedges and few hedgerow trees. Historically important parkland at Bretby extends into the northern edge of the LEAP area commanding views across the Trent Valley.

73 Charnwood

Charnwood rises steeply east from the Leicestershire and South Derbyshire Coalfield. The essence of its distinctive character are its upland qualities which contrast with the surrounding gentle midland landscapes. It has abundant heathlands, woodlands stone buildings and stone walls. There are a few small villages and farmsteads.

94 Leicestershire Vales

A large, complex and heterogeneous area comprises low-lying clay vales and river valleys extending between wold landscapes and other areas of higher ground, including the area referred to as High Cross Plateau in Warwickshire. The gently undulating clay vales and ridges which make up the area, have a strong pattern of Tudor and parliamentary enclosure, often with low, but well-maintained hedges and variable densities of hedgerow trees. Woodlands are small. As a result of this open character, the frequent large settlements can dominate the landscape.

97 Arden

Arden is traditionally regarded as being the land lying between the River Tame and the River Avon in Warwickshire. To the north and north-east it presents a steep escarpment to the open landscape of the Mease/Sence Lowlands. The eastern part abuts and surrounds Coventry. This is Shakespeare's 'Forest of Arden' historically a region of woodlands and heaths, which today remains one of the more wooded parts of the region. To the north east, between Tamworth and Nuneaton, the landscape is primarily industrial and residential and the legacy of mining activities is strong. Nevertheless the area contains a significant proportion of varied and often steeply sloping farmland and woodland. Much of the latter has developed on old colliery spoil sites and is of nature conservation value. Mining subsidence at Alvecote has produced a complex series of wetlands.

The four County Councils, together with various District Councils, are refining the methodology to further detail the character areas. The Environment Agency has been working with consultees to ensure it has the information it requires to carry out its duties to protect and enhance landscape features associated with rivers and water-related elements of the LEAP area.

2.1.3 Geology

The geology of the area can be categorised into three main rock types: The Triassic Mercia Mudstones, the Triassic Sherwood Sandstones and the Carboniferous Coal Measures. These underlying rocks exert a controlling influence on the local landscape and provide vital baseflow support to many rivers.

Much of the area's geology is dominated by Triassic Mercia Mudstone which gives rise to productive reddish clay soils across the lowland area of the Trent, Tame, Anker and Sence catchments. The older Triassic Sandstones support well drained sandy soils, outcrops of these occupy the parts of Mease/Sence lowlands to the east of the area and an area centred on Shenstone in the south west of the area. The raised plateaux of Leicestershire, Warwickshire and Staffordshire are underlain by Carboniferous Coal Measures which have been worked for coal historically and, to a lesser extent, currently.

Thick surface drift deposits are also widespread throughout the LEAP area. Glacial drift is present in many parts of the LEAP area but most notably around the Nuneaton area. The Trent valley, including Burton-upon-Trent, has deep deposits of sands and gravels, these provide a significant mineral resource.

2.1.5 Hydrogeology

The areas most significant aquifer is the Triassic Sherwood Sandstone; this produces water of a generally high quality. Groundwater is primarily abstracted from the sandstone aquifer for Public Water Supply abstractions, the brewing industry in Burton-upon-Trent, and also numerous agricultural spray irrigation licences. Baseflow to the rivers is maintained by seepages from sandstone outcrops and by the widespread sand and gravel deposits associated with rivers throughout the area. The sand and gravel surface deposits at Burton-upon-Trent are also a significant aquifer. Groundwater has historically been abstracted from these for the brewing industry.

2.1.6 Natural Radiation

The greatest source of radiation to the public of England and Wales arises from the natural background. This essentially consists of three principal components over and above that which arises from the body's own content of naturally occurring radionuclides: cosmic radiation, external radiation from the radionuclides naturally present in rocks, soils and building materials; and natural radiation arising from radon-222 and its 'daughter' radionuclides, which emanate as gases from the ground and from building materials.

The range of natural background radiation varies considerably across England and Wales. The average annual doses from natural radiation for the counties in the LEAP area (measured in milli-Sieverts) are: 3-4 mSv in Derbyshire, 2-3 mSv in Leicestershire, 0-2 mSv in Staffordshire, 2-3 mSv in Warwickshire and 0-2 mSv in the West Midlands. These compare with an average annual dose rate for England and Wales of 2.2 mSv, and with Cornwall, which receives by far the highest dose rates, of between 7 and 8 mSv per year on average.

2.1.7 Managing Waste

Available Information

In the past, Waste Regulation Authorities have produced Waste Management Plans which consider all technical issues relating to waste management and conclude by establishing strategy objectives. The plans were a statutory requirement of Section 50 of the Environment Protection Act 1990 but this requirement was repealed by the Environment Act 1995. Waste Management Plans whether in draft form or having been finalised provide a useful source of information. However, whilst the location of waste management sites can be determined to fall either within or outside a catchment area, the waste arisings statistics contained in the plans are detailed on a district or county basis, they are therefore not able to provide meaningful information in relation to a catchment area.

National Waste Production Survey

The Environment Act 1995 placed a duty on the Secretary of State to prepare a National Waste Strategy. In order to help plan the provision of waste disposal recycling and reprocessing facilities in the future and to provide the baseline information for the government's emerging National Waste Strategy, the government asked the Environment Agency to carry out a survey to determine how much waste is produced by industry and commerce throughout the country and how the waste is managed.

The survey was completed during the period October 1998 to March 1999 and involved the Agency or agents acting on behalf of the Agency contacting in excess of 20,000 companies (approximately 200 located within the

catchment), representing some 3% of all businesses. Once collated the Agency will be able to produce data for business sectors from which national, regional and local waste production totals can be estimated.

Waste Arisings

An estimated 27.7 million tonnes of controlled waste is generated in the Midlands Region, a breakdown of which is shown in the table below.

Table 4 Waste Arisings

County	Household Waste (t/a)	Industrial & Commercial Waste (t/a)	Construction & Demolition Waste (t/a)	Total Controlled Waste (t/a)
Staffordshire	465,000	2,726,000	1,290,000	4,481,000
West Midlands	1,000,000	4,450,000	1,500,000	6,950,000
Derbyshire	500,000	1,240,000	700,000	2,440,000
Leicestershire	416,000	968,000	700,000	2,084,000
Nottinghamshire	496,000	3,770,000	800,000	5,066,000
Hereford & Worcester	271,000	863,000	700,000	1,834,000
Shropshire	195,000	1,491,000	572,000	2,258,000
Gloucestershire	220,000	560,000	700,000	1,480,000
Warwickshire	186,000	654,000	301,000	1,141,000
Totals	3,749,000	16,722,000	7,263,000	27,734,000

Source: Midlands Environmental Reference Book 1995/96.

Although not quantifiable the vast majority of the waste arising within the catchment area is generated in the towns of Burton Upon Trent, Nuneaton and Tamworth.

Waste Transfer, Treatment and Disposal

Landfill remains the predominant route for the disposal of waste generated within the area. The area has over 20 landfill sites within its boundary, not all of which are operational. A survey of licensed landfill site returns for 1997/98 shows that just over 750,000 tonnes of controlled waste was disposed of at sites in the area, with approximately 31% of the waste generated in Staffordshire, 31% in Derbyshire, 22% in Warwickshire, and 8% in both Leicestershire and the West Midlands conurbation. The largest site, Judkins landfill, near Nuneaton, received approximately 30% of the total waste landfilled within the area; the 4 largest sites accounted for over 85 % of the total. In addition to landfill sites, the area encompasses a small network of waste treatment, transfer stations, and metal recovery facilities. Collectively these facilities handle approximately 350-400,000 tonnes of waste per annum.

Waste Targets

In the White Paper "Making Waste Work", the Government set out a medium term strategy for achieving more sustainable waste management. The main objectives of the strategy are to:

- reduce the amount of waste produced
- make best use of the waste that is generated
- adopt practices which minimise risks to the environment.

The White Paper provides the following non-statutory primary targets that directly relate to the landfilling of wastes:

- a reduction in the proportion of controlled waste going to landfill from 70% to 60% by 2005;
- to recover 40% of municipal waste by 2005

to assist the attainment of the primary targets a number of secondary targets have also been developed:

- to recycle or compost 25% of household waste by the year 2000
- to increase the re-use of construction/demolition waste materials and certain non-controlled wastes in England to 55 million tonnes per annum by the year 2006.

In order to ensure that these targets are achieved the Agency will need to develop strong contacts with those responsible for waste production, waste disposal and collection authorities and the waste industry in general.

2.2 Air

The Agency contributes to the control of air quality mainly through regulation of emissions to air from Part A processes under the Integrated Pollution Control provisions of the Environmental Protection Act 1990. Air quality may be significantly influenced by other sources not controlled by the Agency, such as traffic, smaller industries and domestic sources. The main responsibility for delivery of the Government's National Air Quality Strategy (published in March 1997) lies with local authorities, although the Agency plays a role through its regulation of emissions from major industries. The National Air Quality Strategy established objectives for eight key pollutants: Benzene; 1,3 Butadiene; Carbon monoxide; Lead; Nitrogen dioxide; Ozone; Particulates (PM₁₀) and Sulphur dioxide to be achieved by the year 2005. As part of the strategy local authorities have been asked to review and assess air quality within their areas and, where they identify a likely breach of those objectives, to propose Action Plans to ensure such exceedances are avoided.

The Part A processes in the LEAP area are in most cases unlikely to have a significant effect on local air quality when they are operated in compliance with their authorisations. The exception is the power station at Drakelow (and other power stations close to the LEAP area boundaries) which under adverse weather conditions may potentially cause or contribute to breaches of NAQS objectives for Sulphur dioxide and Nitrogen dioxide and also particulates.

2.3 Water

2.3.1 Surface Water

River Tame

The LEAP catchment includes the lower part of the River Tame starting below Lea Marston lakes from where it flows north through Tamworth before joining the River Trent near Wychnor, just north of Lichfield. At Lea Marston the river has received drainage from Birmingham and the Black Country and the quality of the river is therefore significantly influenced by discharges upstream of the plan area. The lakes act as a buffer against pollution incidents upstream and although the river is classified as poor quality until Elford where it improves to fair quality (suitable for coarse fish populations) they have contributed to the development of a viable coarse fishery in the lower reaches of the Tame and protect the River Trent from pollution.

River Trent

The River Trent is included from the confluence with the River Tame to its confluence with the River Dove at Newton Solney. The river is fair quality at the Tame confluence but improves to fairly good quality (suitable for high-class coarse fish populations) at Drakelow. Downstream of the plan area the river is utilised as a drinking water supply, with the nearest abstraction point at Shardlow, operated by Severn Trent Water Limited.

River Anker

The River Anker rises around Wolvey and runs north west through agricultural land but also receives drainage from Hinckley and Nuneaton before joining the River Tame at Tamworth. The quality of the Anker is variable along its length being fairly good to good in its upper reaches but deteriorates to fair quality below Nuneaton sewage treatment works, before returning to fairly good quality at Tamworth.

River Sence

The River Sence rises near Ibstock and runs south west through a rural area passing by Congerstone, Sheepy Magna and Ratcliffe Culey before joining the River Anker just north of Atherstone. The river is fairly good to good quality along its entire length.

River Mease

The source of the River Mease is close to Ashby-de-la-Zouch where a number of small watercourses including the Gilwiskaw Brook, come together to form the river around Measham. The river then runs west through agricultural land to its confluence with the River Trent near Croxall and receives drainage from a number of opencast coal mining operations around Moira. The river is fairly good quality along its entire length.

All of the above watercourses receive effluent from sewage treatment works that are operated by Severn Trent Water Limited. The largest of these is to the River Trent from Claymills sewage treatment works in Burton-on-Trent.

Canals

The Ashby canal runs for 34km across the LEAP area from Bedworth, where it joins the Coventry canal, to its termination at Snarestone and is classified as fair quality. There are proposals to extend the Ashby canal as far as Moira.

The Coventry canal extends across the area for 46km from Bedworth to its confluence with the Trent and Mersey canal at Fradley airfield just north of Lichfield and is fair/fairly good quality.

The Birmingham/Fazeley canal stretches from Lea Marston to Fazeley and is fairly good quality for this 12km.

These canals receive few direct discharges and the main water quality problem is related to algal growth.

2.3.2 Groundwater Quality

The quality of groundwater varies across the area and is dependant on the type of aquifer and current and historic land uses. A wide range of activities can have a detrimental effect on groundwater quality, these include industry, mineral extraction and agriculture. The background quality of groundwater can often be poorer due to the presence of dissolved natural minerals; this is the case in some of the coal producing areas. The quality of the groundwater in the sandstones is generally high.

The aquifer underlying Lichfield has been designated a Nitrate Vulnerable Zone. A number of such designations were made nationally due to environmental and health concerns about high levels of nitrates in groundwater. The associated legislation, which implements the EC Nitrate Directive, aims to reduce agricultural nitrate pollution by restricting the amount of nitrogen fertilisers and organic manure that may be applied to agricultural land.

On 1 April 1999, the Agency acquired new powers with respect to controlling discharges to groundwater, under the Groundwater Regulations. The aim of the Regulations is to prevent the pollution of groundwater by controlling actual or potential discharges, and disposal associated with current activities.

Contamination may be caused by a wide range of activities, and the new Regulations seek to address those activities which are not currently controlled by authorisations under the Waste Management Licensing Regulations and the Water Resources Act 1991, such as agricultural land spreading and sheep-dip disposal.

The Regulations introduced a new system of authorisations for the disposal of certain listed substances. Before an authorisation can be granted, an application must be subject to "prior investigation", which could range from a simple desk study, to a full site investigation with monitoring boreholes. The authorised disposal may be required to be monitored by "requisite surveillance" of the associated groundwater, to ensure that pollution of groundwaters is prevented. The Agency can in addition issue notices to prevent and minimise the entry into groundwater of these substances if required, and issue codes of practice for those industries which may unintentionally discharge such substances.

2.3.3 Fisheries

The LEAP area includes part of the middle Trent which has witnessed major changes in its fish populations over past decades. Due to gross pollution emanating from the Birmingham conurbation via the River Tame, much of the Trent supported very impoverished stocks for most of the early part of the century. Improvements in effluent quality during the 1970's and 1980's stimulated a substantial recovery, initially favouring those species, predominantly roach, which could readily tolerate nutrient rich conditions. Consequently the middle reaches of the River Trent became nationally recognised for its match fisheries, attracting high levels of angling activity. Further improvements in water quality in recent years, together with a fall in mean temperature due to the closure of some power plants, have led to an increase in species diversity but a relative decline in the dominance of roach, to be replaced with dace, chub and barbel. Although this is a natural shift in the balance of the population, it is perceived, particularly among the angling community, as a decline in the status of the fishery.

The general improvement in fish stocks has resulted in sustainable populations recolonising the River Tame as far upstream as the Lea Marston lakes. They are still extremely vulnerable to periodic water quality deterioration, however, and in 1995 more than 95% of the River Tame stocks were lost in a single low dissolved oxygen (DO) incident. Subsequent recovery has been rapid, stimulated by an intensive programme of restocking by the Environment Agency. Recent attention has been directed towards preventing such devastating losses by providing off line refuges where fish can escape from rapidly declining water quality conditions.

While water quality remains a major concern, other issues, of both local and national importance have gained prominence. These include the relative lack of variation in habitat in the Tame and Trent and excessive weed growth in the River Anker, a major tributary of the Tame. In addition there is widespread increase in concern over the perceived impact of piscivorous birds on fish populations in both still water and riverine habitats and over the spread of Zander through the canal system.

2.3.4 Recreation and Navigation

The LEAP area provides a range of both formal and informal recreational opportunities. In particular it contains a well established network of canal navigations including sections of the Coventry, Birmingham & Fazeley and Trent & Mersey canals which prove immensely popular for cruising holidays, particularly in summer. A number of boat operators have bases in the area. Walking, rambling, horse riding, bird watching and cycling are all popular as well as the more formal organised sports. Angling is the major water based recreational activity in the catchment.

Organised canoeing is undertaken at Burton-upon-Trent, windsurfing at Branston Water Park near Burton and in the south of the LEAP area angling, windsurfing, sailing and power boating at Kingsbury Water Park. In addition motorised water sports including water skiing have recently been given approval for former gravel workings at Dosthill. There are many more planned lake locations with potential for water recreation. Overall the Tame-Trent corridor is recognised as having high water recreation potential. The Central Rivers Project, a partnership between local government, public organisations and the private sector has developed a strategy for revitalising /enhancing the floodplain of the Tame /Trent between Burton-upon-Trent and Tamworth; water based recreation forms a key part of this strategy (see issue 7).

2.3.5 Flood Defence & Land Drainage

Flooding History

Flood defences have been constructed in many parts of the catchment to provide protection for property and agricultural land. These are generally either hard defences (flood walls made of brick, concrete or sheet piling), or soft defences (earth embankments).

Other forms of flood protection within the catchment include:

- A flood relief by-pass channel diverting flood flows on the River Anker from the centre of Nuneaton
- Flood balancing areas which restrict ongoing flood flows to the allowable capacity of the downstream river system

Flood Warning

The Agency operates a flood warning service in England and takes the lead role in passing flood warnings to people at risk in order that they can take the necessary action to protect themselves and their properties. The latest technology is used to monitor rainfall and river levels constantly, 365 days a year. The flood warning service is provided for certain reaches of Main River where there is a risk to people and property and where there is sufficient time for the warnings to be effective. Flood warnings are issued to the police, Local Authorities and the public through a variety of media including AA Roadwatch, Teletext, radio and television. The Agency also provides a Floodcall 'dial and listen' service which provides 24 hour recorded information on the latest flooding situation. It should be noted that the Agency uses the best information available to predict the possibility of flooding but no warning system can cover every eventuality. For instance, following the Easter 1998 floods the Agency considered there were some lessons to be learned relating to flood warning and these are covered in issue 14.

It is the responsibility of those who live in flood prone areas to be aware of any risk and to know what action should be taken to protect themselves if flooding occurs.

Photograph 4 – Flood Defences under construction in Burton-upon-Trent



2.3.6 Water Resources

In the Mease and Bourne Brook catchments there are a large number of surface water licences for spray irrigation, the majority of which are subject to flow restrictions. Abstraction for spray irrigation always requires a licence and demand is increasing. The need for water usually coincides with times of low flow and this type of abstraction has the potential to cause significant environmental damage. Conditions on the licences are designed to prevent this. Winter storage reservoirs are encouraged where possible to allow water to be abstracted during the winter when flows are higher to be stored for use in the summer.

The major rock formations within the catchment exhibit a variable ability to store and transmit groundwater. The Triassic sandstones form the areas principal aquifer, with significant resources of groundwater widely exploited via boreholes, mainly for public water supply.

Much of the groundwater abstracted (30 %), is licensed to South Staffordshire Water plc and Severn Trent Water Ltd for public water supply

Groundwater is taken from 10 public water supply abstractions. It is also used to supply a number of industrial activities. The majority of groundwater licences, however, authorise a large number of very small abstractions for domestic or agricultural use.

A network of monitoring boreholes is used to assess the groundwater quality across the catchment. On the Triassic Sandstone aquifers, the water is of very high natural quality and is used for drinking water supply.

2.4 Wildlife and Heritage

2.4.1 Wildlife

The plan area supports a wide range of habitats that are of wildlife value. Some of these habitats have been designated as Sites of Special Scientific Interest (SSSI's) due to their importance at national level or are locally designated as Sites of Importance for Nature Conservation (SINC's). There are 19 SSSI's within the area, eight of which have specific wetland issues. In addition, one European Habitats Directive site at Ensor Pools, Nuneaton (noted for its population of white clawed crayfish), falls within the catchment.

The national importance of habitats in terms of nature conservation has been assessed by the UK Biodiversity Steering Group, which was set up by the Government in 1994 as part of its response to the 1992 Rio Earth Summit. The group have produced a list of key habitats and those present in the plan area are shown below. These habitats are those which are under threat, are important for key species, or which the UK has international obligations to protect.

The UK Biodiversity Steering Group Report produced lists of species which are either globally threatened or have declined nationally by over 50% in the last 25 years. The short list contains 116 species for which priority action plans were produced in an attempt to stabilise and increase their populations. The middle list contains a further 300 species for which action plans have been produced during 1998. There is also a long list which, although not comprehensive, contains species of conservation concern.

The **Key Habitats** in the plan area are reedbeds, fens, grazing marsh, fen/carr/marsh/swamp, standing open water, rivers and streams, canals, heathland, ancient woodland, farmland and man-made urban / suburban and post industrial habitats.

The **Key Species** in the plan area are water vole, otter, great crested newt, whiteclawed crayfish, barn owl and black poplar.

English Nature have produced a map dividing England into a series of Natural Areas which relate directly to Landscape Character Areas identified by the Countryside Agency. Natural areas are parts of England with similar types of wildlife and natural features. Each natural area is supported by a description of its ecological character and a set of long-term visionary objectives to provide direction for nature conservation and to guide action plans.

The following Natural Areas fall within the LEAP area (corresponding Landscape Character Areas are shown in brackets).

Trent Valley and Rises (Trent Valley Washlands, Mease/Sence Lowlands, Leicestershire Vales)

Coal Measures (Leicestershire and South Derbyshire Coalfield)

Charnwood

Needwood and South Derbyshire Claylands

Midlands Plateau (Arden, Cannock Chase and Cank Wood).

Each Natural Area has a profile containing visions and objectives for nature conservation delivery in their respective areas. The LEAP is a potential mechanism for delivering these particularly where they are related to wetland habitats and species. The key Natural Areas for the LEAP are the Trent Valley and Rises and the Midlands Plateau.

Photograph 5 – A white clawed crayfish



2.4.2 Heritage

The Trent acted as a route through central England from pre Roman times. There is evidence of Anglo-Saxon cemeteries along the Trent Valley dating from the 5th and 6th centuries. The castle at Tamworth, of Saxon origin, was subsequently taken over by the Normans. The availability of good water, drawn from deep wells out of an underlying layer of gypsum, led to the growth of the brewing industry which used locally grown barley for the malting process. Thus Burton became a major brewery centre and expanded rapidly during the 19th century. In the 20th century, the quantities of water and coal available nearby led to the construction of several large coal fired power stations along the Trent, including Drakelow at Burton.

In the south of the LEAP area there is scattered evidence of Neolithic and Bronze Age occupation spreading out from the Trent and Tame valleys. Occupation continued throughout the Iron Age and Roman periods. The Roman Road of Watling Street forms a feature still prominent today as the line of the A5. The site of Letocetum Roman Town can be found at Wall to the south of Lichfield. Later there is substantial evidence of Anglo-Saxon

settlement and later Scandinavian influence. By the time of the Domesday Book the landscape was one of fairly evenly dispersed nucleated villages, usually on the slightly higher ground overlooking open fields with only a few larger centres like Market Bosworth. One of the area's claims to national fame is as the location for the Battle of Bosworth Field in the 15th century. In the 16th century the dissolution of the monasteries and the developing land market led to the formation of large estates, and ultimately to landscape parks and country houses and estates. However, across the area as a whole, most of the land remained in open fields, unenclosed until the 18th and 19th centuries, when the rectilinear pattern which still dominates the landscape today was created. At that time farms were built in the newly enclosed fields and are still obvious from their names like Moscow, Trafalgar and Crimea.

Photograph 6 – Members of the ‘Sealed Knot’ at Bosworth Field



In the Leicestershire and South Derbyshire Coalfield there is little evidence of prehistoric or Roman occupation, but it is likely that the heaths which dominated much of the area in the Middle Ages, were cleared at an early stage in prehistory. However there were still considerable areas of woodland by the time the Anglo Saxons took over the area. There were medieval parks at Ashby-de-la-Zouch and much of the area appears to have been open common, particularly in the north. In the areas suitable for cultivation, the open fields that developed during the Middle Ages were mainly enclosed before the end of the 16th century.

The LEAP area is rich in canal heritage. In the north runs the Trent and Mersey Canal, begun in 1766. The main instigator behind its construction was Josiah Wedgwood, the world famous potter. It was a great commercial success and entirely responsible for the growth and development of the Potteries. Another of the earliest canals to be built, the Coventry Canal, begun in 1768 enabled coal to be moved cheaply from the North Warwickshire coalfields to the heart of Coventry city. Both these canals utilised the services of the well known engineer James Brindley. The Ashby Canal completed in 1804 was built to connect the Ashby Wolds coalfields with the Coventry Canal. Also within the area runs the Birmingham and Fazeley Canal which leads right into the heart of Birmingham. Integral to the canal network is a rich heritage of bridges, locks, aqueducts and canalside buildings which in places form attractive groupings such as found at Fazeley Wharf.

Between Tamworth and Nuneaton an area of 'industrial Arden' developed in the 19th century. Coal exploitation, influenced by the location of canals, began in earnest. Mining villages sprang up and soon attracted coal powered industries. Coking and smelting industries developed and later power stations, with associated road networks and railways.

Coal mining became the fundamental force shaping the landscape. By 1520 there were five pits at Swadlincote and active mining at Newbold, Oakthorpe and Coleorton, with Measham becoming active in the following century. During the 18th century the industry developed considerably and steam power was introduced. The 19th century saw improved transport with the advent of the Ashby canal and its tramways. Mining for coal and fireclay, limeworking, a blast furnace and a spa developed in and around Moira. Despite early 20th century depression, the industry remained productive until recent times and the post war period saw the expansion of the brick making industry in the southern part of the area, notably around Ibstock. More recent times have seen the opening up of open cast mines and elsewhere the closure of deep mines.

Introduction

This chapter provides a detailed description of the issues, which the Agency considers, need to be addressed in the Burton, Nuneaton and Tamworth area. An issue is a problem that needs tackling or an opportunity that should be realised.

For each issue the text describes the problem or opportunity, which organisations are involved and what is currently being done about it. The tables included set out options for action together with potential partnerships, the impacts of each proposal, along with estimated costs and timescales. The Agency's lead officer responsible for the issue has also been identified.

The proposed options for action are intended to facilitate improvements to the environment for the benefit of all users and are put forward for discussion and consideration. The Action Plan that leads from this report will set agreed actions with more detailed budget and timetable information.

The issues have been identified by:

- Using the knowledge of Agency staff.
- Informal consultation with a range of organisations and individuals and by taking into account representations received from key groups.
- Comparing the current state of the area with national and regional targets.

When identifying the issues consideration has been given to the Agency's Environmental Themes. These are:



Addressing **CLIMATE CHANGE**



Improving **AIR QUALITY**



Managing Our **WATER RESOURCES**



Enhancing **BIODIVERSITY**



Managing Our **FRESHWATER FISHERIES**



Delivering **INTEGRATED RIVER – BASIN MANAGEMENT**



Conserving **THE LAND**



Managing **WASTE**



Regulating **MAJOR INDUSTRIES**

The boxes at the end of each issue highlight how the proposed actions are linked to national Agency targets set out in the publication "An Environmental Strategy for the Millennium and Beyond" (1997). A copy of this document is available on request from our Customer Services department.

Tame Catchment Management Plan

In 1996 the National Rivers Authority published the Tame Catchment Management Plan (CMP). It set out the NRAs vision for the future of the river catchment and highlighted problems that needed to be addressed and actions needed to resolve them. Included within this CMP was the southern part of the Burton, Nuneaton and Tamworth LEAP area. This LEAP now supersedes that document and any of the outstanding issues which overlap have been incorporated into the LEAP. Appendix 3 shows the progress of the outstanding Tame CMP issues and where appropriate relates them to issues within this LEAP.

The Burton, Nuneaton and Tamworth Issues

Issue	Heading
1.	The Effects of Power Stations on Local Air Quality
2.	Groundwater Resources in the Burton Deep Aquifer
3.	Groundwater/Surface Water Interactions in the Mease Catchment
4.	Local Biodiversity
5.	Sustainability of Fish Populations in the Plan Area
6.	Contaminated Run-off from Mining Activities
7.	Land Use, Conservation and Recreation in River Valleys and Flood Plains
8.	Changes in Agricultural Land Use
9.	Loss of Habitat Diversity on Rivers in the LEAP Area
10.	Water Quality in Rivers and Canals
11.	The Impact of Canal Restoration Schemes
12.	Sustainable Urban Drainage
13.	Main River Flooding
14.	Easter 1998 Floods: Lessons Learned by the Agency
15.	Water Level Management Plans
16.	The Birmingham Northern Relief Road
17.	Flytipping, Litter and the Aesthetic Pollution of Rivers and Canals
18.	Enclosure of Waste Transfer Stations
19.	Campaigning on Waste Minimisation

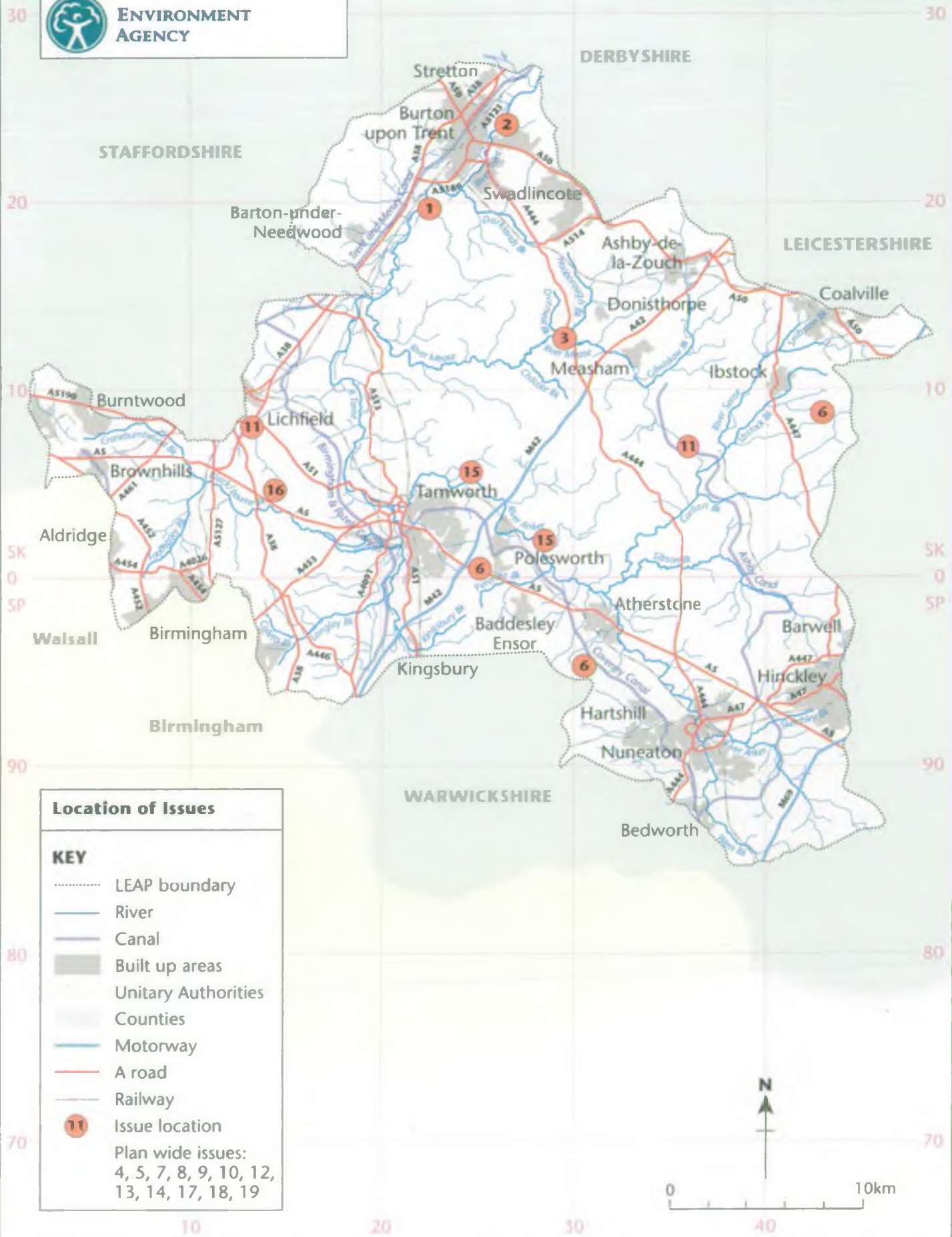
*The Environment Agency wants to hear your comments on the issues and proposals in this document together with any new ideas and suggestions.
Please use the questionnaire and freepost envelope or fax or e-mail*

Burton, Nuneaton & Tamworth Local Environment Agency Plan Map 3



ENVIRONMENT
AGENCY

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Location of Issues

KEY

- LEAP boundary
- River
- Canal
- Built up areas
- Unitary Authorities
- Counties
- Motorway
- A road
- Railway
- Issue location
- Plan wide issues:
4, 5, 7, 8, 9, 10, 12,
13, 14, 17, 18, 19

Abbreviations of organisations used in issues tables

AC	Angling Clubs
AEG	Area Environment Group
BW	British Waterways
BC	Borough Council
CA	Countryside Agency
CC	County Council
DC	District Council
DETR	Department of the Environment, Transport & Regions
EA	Environment Agency
EN	English Nature
FA	Forestry Authority
FWAG	Farming & Wildlife Advisory Group
HA	Highways Agency
HMIP	Her Majesty's Inspectorate of Pollution
LPA	Local Planning Authority
LWCA	Local Waste Collection Authority
MAFF	Ministry of Agriculture, Fisheries and Food
NETCEN	National Environmental Technology Centre
NFU	National Farmers Union
OFWAT	Office of Water Services
REPAC	Regional Environment Protection Advisory Committee
RFDC	Regional Flood Defence Committee
RFERAC	Regional Fisheries, Ecology and Recreation Advisory Committee
RO	Riparian Owner
RSPB	Royal Society for the Protection of Birds
SP	Scheme Promoter
STA	Salmon & Trout Association
STW	Severn Trent Water Ltd
TBG	Tidy Britain Group
WDC	Waste Disposal Companies
WT	Wildlife Trust

Abbreviations of costings used in issues tables

R	Recurring – no additional cost
U	Cost unknown at this stage
*	Only Agency costs identified here. Costs to other organisations unknown

Issue 1 *The Effects of Power Stations on Local Air Quality*

Objective – To ensure that air quality standards are not breached in the LEAP area as a result of emissions from power stations and that management of these major emissions contributes to delivery of the National Air Quality Strategy by 2005

What is the problem?

Power stations are sources of sulphur dioxide (SO₂) (coal-fired stations only) and nitrogen oxides (NO_x), as well as other pollutants. They have the potential to affect local air quality to a significant degree. The LEAP area contains a large coal-fired power station at Drakelow, near Burton upon Trent. There are similar stations just outside the plan area at Rugeley, Willington and Ratcliffe on Soar. There have been proposals for a gas turbine power station in the plan area.

The future of both coal-fired and gas turbine power stations in the plan area is greatly affected by national policy developments, including the government's concerns about the coal industry and reliance on gas, and competing environmental pressures. This underlies the individual changes to the industry sector and presents a challenge to the Agency to ensure that there is a net environmental benefit for the plan area.

Who is involved?

Environment Agency (EA), Generating Companies (GC), Local Authorities (LA), Department of the Environment, Transport and the Regions (DETR)

What is happening already?

Emissions from the coal-fired power stations are currently controlled mainly through annual tonnage release limits for SO₂ and NO_x. This enables the generating companies to operate their power stations as a portfolio in response to the demands of the electricity grid system. These controls provide some protection for local air quality, but are mainly concerned with meeting the UK's commitments to national emissions reductions, in order to reduce acid rain impacts.

As air quality standards become progressively tighter, such as those now established in the National Air Quality Strategy, there is a need to examine short term and localised impacts of power station emissions more closely. Also we need to develop different approaches to the regulation of these processes specifically aimed at reducing the frequency and magnitude of air pollution incidents. For example there is the potential for coal-fired power stations in the Trent Valley to cause breaches of the latest short term SO₂ standard. High levels of SO₂ in the Doncaster area in June 1997 are considered to have been caused mainly by compliant SO₂ emissions from the Trent Valley power stations, although other aspects of that episode could not be explained by power station emissions. The levels of SO₂ were high because the emissions failed to disperse effectively due to unusual weather conditions. To address this type of event, it is proposed to develop an operating protocol which will identify periods when the proposed emissions scenario combined with the forecast weather conditions could lead to short term air quality problems. It may then be possible for the generating companies to take action to avoid the event occurring or reduce the severity of the event. Because of the concentration of larger power stations, this work is being co-ordinated by Lower Trent Area.

In the case of existing and proposed gas turbine power stations, local air quality impacts mainly concern NO_x emissions and resulting levels of nitrogen dioxide (NO₂). This is a complex pollutant, which is affected by levels of ozone and hydrocarbons in the atmosphere, and where emissions from other sources, especially traffic, have a significant effect on local air quality. Detailed assessment of worst case emissions from new power stations is required in order to be satisfied that the latest air quality objective for NO₂ can be met.

Photograph 7 – Drakelow Power Station



ISSUE 1 : The Effects of Power Stations on Local Air Quality							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
1.1 Continue the development of an operating protocol for management of short term SO ₂ emissions from coal-fired power stations	EA	GC	+ Cost effective targeting of emissions and reductions to those times when air quality most at risk	U	U	1999 -	T Montgomery D Othen
1.2 Pursue net environmental benefit in changes affected by government's developing energy policy	EA	GC, DETR	+ Net improvement in air quality	U	U	1999 -	T Montgomery D Othen

The above proposals will work towards achieving the following Agency objectives on improving air quality:



Help the government deliver its Air Quality Strategy.

Ensure emissions from the major industrial processes to the atmosphere are reduced.

Issue 2 Groundwater Resources in the Burton Deep Aquifer

Objective – To assess the availability of additional groundwater resources in the Burton Deep Aquifer which will allow sustainable management strategies to be adopted and assist in the determination of applications for groundwater abstractions.

What is the problem?

As with all defined aquifers in the region, groundwater resource availability is calculated using the best available information. Management of abstraction from the aquifers is then based upon this information. Making decisions about groundwater abstractions based on poor information may affect supplies to existing licence-holders and could also potentially lead to long term environmental damage.

The Burton deep sandstone aquifer provides an important source of water for industrial users, predominantly the breweries, in Burton-on-Trent. Recent testing has revealed that the current estimate of available water resources in the Burton Aquifer may not fully take into account the complex geological and hydrogeological conditions that affect groundwater resource availability in this area. A more accurate assessment of groundwater resource availability is required to assist us in making future decisions about groundwater abstractions.

Who is involved?

Environment Agency, Abstraction licence holders.

What is happening already?

It was decided that developing a computer model to simulate the behaviour of the aquifer would be an appropriate means of assessing resource availability. In order that an accurate model can be developed, further information is required.

An external consultant has collated relevant information from the British Geological Survey, local abstraction licence-holders and the Agency. This information has been used in a desk-top study of the aquifer which highlighted areas where there was insufficient data with which to develop a suitable model. One such area was the need to clarify the position of certain key geological features, such as faults, within the study boundary.

A programme of borehole drilling has now been undertaken. The boreholes were designed so that they would be able to provide a number of different types of information. They have enabled details of the geology to be clarified, more details of the hydraulic properties of the sandstone to be obtained and they will also provide permanent groundwater level monitoring points.

ISSUE 2: Groundwater Resources in the Burton Deep Aquifer.							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
2.1 Develop numerical model of the aquifer based on newly obtained and current data	EA		(+) Development of reliable model	£90K		1999 - 2004	K Johnstone
2.2 Develop aquifer management policy based on above numerical model	EA		(+) More reliable resource management policy	U		2004	K Johnstone P Stewart

The above proposals will work towards achieving the following Agency objectives on managing our water resources:



Vigorously apply our Groundwater Protection Policy to ensure that the quality and use of our groundwaters is improved.

Issue 3 Groundwater/Surface Water Interactions in the Mease Catchment

Objective - To assess the nature of groundwater/surface water interactions in the River Mease catchment and hence develop a combined groundwater and surface water abstraction licensing policy which will help to ensure that water resources are managed more effectively.

What is the problem?

The headwaters of the River Mease are partially underlain by a sandstone aquifer, water from which is thought to provide a contribution to the flow in the River Mease. A number of groundwater abstractions already operate in this area. The Agency is concerned that further abstraction from the aquifer may have a detrimental effect on this contribution to river flow. There is growing interest in abstracting groundwater from this aquifer, for predominantly agricultural purposes.

The current groundwater abstraction management policy for the aquifer states that resources are available for licensing, but licences will be time-limited and there is a presumption against large licences. This is a precautionary policy to protect the flow in the River Mease, to prevent over-abstraction from the aquifer and to limit the impact of any unforeseen adverse effects.

In the meantime, research is required into the potential long-term impacts of further groundwater development.

Who is involved?

Environment Agency, Abstraction licence holders.

What is happening already?

A review of the current management policy has been undertaken. The scope of the work required to develop an improved policy has been identified.

An initial data collation project is planned which will enable the quality of the data currently available to be assessed and also identify the need for any further data collection. Once an adequate data set has been collected an assessment of the groundwater/surface water interactions will be undertaken which will improve the understanding of the aquifer. All the information which is currently available can then be used to develop a management policy which will more adequately consider local hydrogeological conditions and as such will provide a more defensible approach to groundwater licensing in this area.

ISSUE 3 : Groundwater/Surface Water Interactions in the Mease Catchment							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
3.1 Data collation	EA		(+) Aid understanding of hydrogeological processes in aquifer	£30K		1999 - 2001	G Roe K Johnstone
3.2 Implement new policy for Groundwater Management Unit	EA		(+) Ensure sustainable development of groundwater resources	U		2004 -	A Dacey G Roe

The above proposals will work towards achieving the following Agency objectives on managing our water resources:

Vigorously apply our Groundwater Protection Policy to ensure that the quality and use of our groundwaters is improved.



Issue 4 Local Biodiversity

Objective – To protect rare and endangered animal and plant species and to promote diversity in flora and fauna.

The Agency is one of a number of organisations with responsibilities for implementing the UK Biodiversity Action Plan and will be developing targets for both species and habitats. This issue looks at those species for which the Agency has some responsibility. It also looks at the threat posed by invasive plants and is involved with the development of a strategic plan for restoration and aftercare of gravel pits in the Tame Valley.

Otters

Otters in Britain suffered a serious population decline in the 1950's due to pesticide in rivers. Since then otters have slowly been recolonising from Wales and the West Country back into the Midlands. Otters are now fairly well established on the Severn catchment and signs are regularly found on the Trent in west Staffordshire. More recently otter signs have been found on the lower stretches of the Tame at Tamworth and at Lea Marston. These signs show that otters have started to recolonise the area and are likely to be coming from the River Blythe and Trent. An otter survey is underway of the Rivers Tame, Sence and Anker to determine otter presence in this catchment. Otters are still under threat from water pollution, low fish stocks in some areas, poor riparian management and roads.

Water Voles

Water voles have suffered 80% decline in the last ten years in the UK from national surveys. They are present in parts of the catchment with known strongholds on the Gilwiskaw Brook and some other upper tributaries. A survey of water voles is currently underway in the area. Present riparian management may need to be re-evaluated in the light of the findings of this and future surveys.

Crayfish

The native white-clawed crayfish is known to be present in many rivers in the catchment but the exact distribution, numbers and population changes are unknown. They are at risk from competition from the American Signal Crayfish and from crayfish plague. Populations of the alien Signal crayfish have been recorded at Catton Park and on the Trent close by, it is not known if signal crayfish exist elsewhere in the area. There are no known cases of crayfish plague in the Upper Trent.

Black Poplar

The native black poplar, formerly widespread in floodplains, is now one Britain's rarest native trees. It is necessary to establish current distribution in the Burton, Nuneaton and Tamworth area, and consider propagation from local specimens to allow planting of individuals of appropriate genetic stock. The Agency encourages the planting of this species in schemes adjacent to rivers where appropriate.

Invasive Plants

Invasive alien plants such as Himalayan Balsam, Japanese Knotweed and Giant Hogweed are reducing Biodiversity by pushing out a wide variety of native plant species. They also undermine riverbanks and increase erosion. Japanese knotweed can cause structural damage to buildings, roads etc. Giant Hogweed is potentially a danger to public health causing blistering and severe irritation after contact with the poisonous sap. Concern has also been raised over the invasive properties of *Crassula hemsii* (Australian swamp stonecrop) and *Hydrocotyle ranunculoides* (Floating Pennywort) although there are no records of either of these species in the LEAP area. Increased awareness is required amongst garden and aquatic centres, waste carriers and topsoil dealers regarding the spread and control of these plants. The Agency undertakes control of invasive weeds where possible as part of its flood defence work.

Great-Crested Newt

The great-crested newt is a globally threatened species and in the 1980's was found to be declining at a rate of 2% every 5 years. This species is known to occur in the plan area but its status is unknown. The decline is believed to be due to the loss of open water habitat and by the filling in of ponds, adding of fish and loss of winter foraging areas to development.

Barn Owls

The barn owl population in Britain has declined by 70% over the last 50 years and is now considered threatened. This decline has been caused by changes in farming methods and land management, which has reduced the availability of food. The loss of traditional nesting sites that can result from the demolition, renovation or conversion of farm buildings is also contributing the disappearance of this bird.

Breeding Waders

The LEAP area includes the extensive areas that are important for visiting and breeding waders e.g. snipe and lapwing, and wildfowl. The chain of gravel pits and wetland areas in the Tame Valley between Lea Marston and Burton provides a range of habitats important for waders such as reedbeds, open water and wet grassland.

Wetland Habitats

All wetland habitats are under threat from development, engineering works, poor management and pollution. A diversity of habitats such as reedbeds, wet grassland, floodplain, running and still water is vital for the conservation of our wetland flora and fauna. The Agency promotes the maintenance and creation of these habitats. As part of the UK Biodiversity Action Plan (BAP) the Agency is working with local conservation groups and the Wildlife Trusts to implement local biodiversity actions and meet habitat creation targets. A BAP was produced for Staffordshire in 1998 and one is currently underway for Warwickshire highlighting the major conservation issues for the two counties. The targets included here are those that the Agency has responsibility for and are specific to the Burton, Nuneaton and Tamworth LEAP area.

The Agency is one of a number of organisations with responsibilities for implementing the UK Biodiversity Action Plan and has developed targets for both species and habitats. This issue looks at those species for which the Agency has some responsibility. It also looks at the threat posed by invasive plants and is involved with the development of a strategic plan for restoration of gravel pits in the Tame Valley.

Who is involved?

Environment Agency (EA), English Nature (EN), Wildlife Trusts (WT), Mineral Companies, West Midland Bird Club (WMBC) and Landowners (LO), Local Authorities (LA). Farming and Wildlife Advisory Group (FWAG), Forestry Authority (FA).

Photograph 8 – Lapwing

ISSUE 4: Local Biodiversity							
Options for action	Responsibility		Impacts (+or-)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
4.1 Otters Support Upper Trent Otter and Water Vole project to carry out survey of otter distribution and identify habitat enhancement requirements Undertake programme of habitat enhancement identified above	EA, WT	LO, LA's	+ Increase knowledge of species, distribution, enhance populations and carry out habitat improvement	U	U	1999 -	A Crawford
				U	U	- 2005	A Crawford
4.2 Water voles Support Upper Trent Otter and Water Vole Project Undertake programme of habitat enhancement identified above including the safeguarding of water vole key sites	EA, WT	LO, LA's	+ Increase knowledge of species distribution and promote good riparian management for water voles	U	U	1999 - 2005	A Crawford
			+ Identify habitat improvement	U	U	- 2005	A Crawford
4.3 Crayfish Survey plan area for crayfish populations, define boundaries of those populations and identify 'at risk' native crayfish populations Review literature and research with a view to eradication of alien crayfish populations and attempt eradication	EA	EN, MAFF, RO	+ Distribution of threats and threatened identified facilitating protection	U	U	1999 -	P Wormald G Fretwell
			+ Protect native crayfish populations	U	U	- 2005	P Wormald G Fretwell
4.4 Black poplar Survey and identify location of black poplar Establish propagation programme for black poplar Complete second phase of R&D project on the genetic diversity of the Black Poplar	EA		+ Assess scale of problem	U		1999 -	A Crawford
	EA		+ Ensure future numbers of black poplar through propagation and planting	U		- 2005	A Crawford
	EA		+ Increase knowledge of genetic diversity of black poplar nationally	U		- 2005	M Le Ray

Options for action	Responsibility		Impacts (+or-)	Estimated Cost		Timescale	EA Officer
4.5 Invasive plants							
Inform RO at sites where invasive plant species identified and encourage eradication	EA	RO, LA, HA	+ eradication locally, control spread	U	U	1999 -	P Wormald G Fretwell
Raise awareness in trade and public of the damage caused by introduction of exotic species to the wild	EA	GT/AT, RO, LA/ Public	+ prevent future introductions of exotic species to the wild	U	U	- 2005	P Wormald G Fretwell
4.6 Great-crested newts							
Undertake surveys for great-crested newts	EA, EN	WT, LA's	+ Increase knowledge of distribution and status in area	U	U	1999 -	A Crawford
Improve habitat	EA, EN	WT, LA's	+ Improve protection of newt inhabited sites	U	U	- 2005	A Crawford
4.7 Barn owls							
Initiate barn owl creation project along river corridors	EA	LO, WT	Improvement of suitable barn owl habitat along rivers and enhancement of populations	U	U	1999 - 2005	R Hering
4.8 Alder disease							
Monitor alder disease	FA	EA	Loss of riparian habitat	U	U	1999 - 2005	A Crawford
4.9 Breeding waders							
Promote conservation of wetland sites through the restoration of gravel pits and liaison with landowners	EA	WT, WMBC, LO	+ Conserve and improve wetland habitat	U	U	1999 - 2005	A Crawford
4.10 Conservation sites							
Support the re-survey of Sites Important for Nature Conservation (SINC) in Warwickshire	WT WCC	LA's EA	+ Increase knowledge of wildlife habitats in Warwickshire	U	U	2002	A Crawford
4.11 Wetland habitats *							
<ul style="list-style-type: none"> • Create 20ha of shallow pools through the restoration of gravel pits • Increase total amount of wet woodland by 40ha • Create 50 ha of reedbed • Create 20 new non fishing ponds • Improve and enhance 20km of river corridor including reinstating former channel and backwater features, tree planting etc 	EA, WT	LA's, MC, LO, MC, FWAG	+ Conserve and enhance wetland habitat	U	U	1999 -	A Crawford R Hering

*These targets will be undertaken throughout the LEAP area, in collaboration with the Staffordshire Wildlife Trust in fulfilment of the targets outlined the Staffordshire Biodiversity Action Plan.

The above proposals will work towards achieving the following Agency objectives on enhancing biodiversity:



Play a full and active part in delivering the UK's Biodiversity Action Plan.

Ensure that all aspects of the BAP are incorporated into the Agency's guidance and become part of its Local Environment Agency Plans.

Allocate specific resources to conservation projects aimed at increasing biodiversity.

Carry out research into management of species in the aquatic environment in order to meet fully all biodiversity action plan targets.

Photograph 9 – Fishing in Tamworth



Issue 5 Sustainability of Fish Populations in the Plan Area

Objective – To address issues which impinge upon the integrity of fish populations in the area

What is the problem?

A number of largely unrelated issues affect the fish populations within the LEAP area.

Recent water quality improvements in the middle reaches of the River Trent have resulted in conditions which no longer favour the proliferation of large shoals of roach. These fish formerly supported a prodigious and extensive match fishery over many years. Consequently there has been a perceived decline in fishing performance. To some extent this change may have been accentuated by relatively limited spawning habitat as a result of channel resectioning and alterations made to the structure of the river for flood defence purposes.

The conurbation of Birmingham is the source of both organic and inorganic pollution in the River Tame, especially during the summer when rapid run-off following storms can cause pulses of low dissolved oxygen which may have an impact as far as the Trent confluence and beyond. These pollution episodes seriously jeopardise the future development of coarse fish populations which have recently recolonised this part of the river.

Extensive weed growth in the River Anker during the summer months seriously limits angling opportunities and can restrict fish habitat. The potential for amelioration by phosphate stripping at sewage treatment works is being assessed under the Urban Waste Water Treatment Directive. The assessment will be undertaken as part of the Agency's national strategy on nutrient removal.

Coarse fish populations in the canals and more recently in the River Anker may be compromised by the spread of Zander, a large predatory fish, introduced from the continent into East Anglia. Zander have migrated through the canal system and are now present in the Birmingham and Fazeley Canal but have not yet reached the Trent and Mersey Canal.

Concerns have been raised about the impact of increasing numbers of cormorants now preying upon fish populations in both riverine and stillwater environments in the Trent valley.

Who is involved?

Environment Agency, Local Angling Clubs, British Waterways, Riparian Owners

What is happening already?

Opportunities are being sought to create off-line bays and river margins and to connect gravel pits to the river to provide areas for spawning and for fry shelter. These measures should help to increase recruitment and thereby boost fish populations in both the Tame and Trent.

Clean water tributaries of the River Tame (the rivers Mease and Anker) are being utilised to provide off-line refuge areas into which fish may migrate to escape polluted water during the passage of low DO. Surviving fish will provide the impetus for rapid recovery of the populations in the event of major mortalities.

Research and development commissioned by British Waterways showed reduction in roach populations. However, inclusion of Zander on the Import of Live Fish Act list has created uncertainties over responsibilities for removal.

The response to the perceived threat to fish populations posed by cormorants is being made via research and development undertaken at national level. The Agency is to provide data for this research using angling club statistics.

ISSUE 5 : Sustainability of Fish Populations in the Plan Area							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
5.1 Identify areas for possible enhancement	EA	LAC	+ To create joint partnership agreements	U	U	ongoing	R Sedgewick A Crawford
5.2 Create a programme to build suitable areas, refuges etc over a period of years	EA	LAC, RO	+ To create a larger amount of food organisms	U	U	2000 -	R Sedgewick A Crawford
5.3 a Undertake tree planting to create shading on River Anker	EA		+ To create clear water areas for angling and to maintain diversity of channel habitat	U			R Sedgewick
5.3 b Undertake experimental weed cutting to allow sustainable channel development on River Anker	EA		+ To create clear water areas for angling and to maintain diversity of channel habitat	U		2000 - 2005	R Sedgewick
5.3 c Undertake macrophyte surveys to assess potential need for phosphate stripping at STW's under the UWWTD	EA	STW	+ To reduce macrophyte and filamentous algal growth	U	U	1999 - 2001	G Fretwell

The above proposals will work towards achieving the following Agency objectives on managing our freshwater fisheries:



Research into the factors which affect the viability of our unique freshwater fisheries populations.

Issue 6 Contaminated Run-off from Mining Activities

Objective – To prevent acidified water being discharged to controlled waters

What is the problem?

Acidic surface water draining from colliery spoil heaps is a well documented problem that affects many mining areas. Drainage from spoil heaps can contain considerable amounts of ferrous and ferric salts (mainly sulphates), sulphates of aluminium, calcium, zinc, nickel and often sulphuric acid. The iron salts and the sulphuric acid are usually assumed to originate from the atmospheric oxidation of iron pyrites which are generally associated with the formation of coal deposits. High acidity may also be due to bacterial action from sulphur producing organisms.

Birch Coppice

In the Tame Catchment Management Plan the National Rivers Authority highlighted acidic run-off problems from the closed Birch Coppice, Baddesley Ensor and Pooley Hall colliery sites which were causing water quality problems in local watercourses. The problems at Baddesley Ensor and Pooley Hall have now been largely resolved, but there are still concerns about the Birch Coppice site.

The Penmire Brook, which receives surface run-off from Birch Coppice is a tributary of the River Anker and can also be used as a feeder for the Coventry Canal. Historically there have been fish mortalities in the canal and River Anker when acidic, metalliferous run-off has polluted the watercourses. A long-term solution is needed to reduce the threat to water quality that the site poses.

Mancetter Quarries & Oldbury Reservoir

Mancetter and Purley quarries are hard rock quarries owned by Tilcon. The shale deposits on site contain iron pyrites. The breakdown of this pyrite material causes water percolating through the quarry operations to achieve reduced pH levels and this gives rise to an acidic run-off that also has elevated levels of metals associated with it, particularly aluminium.

Oldbury reservoir was constructed c.1810 as a balancing and supply reservoir for the Coventry canal approximately 1km away. Just prior to entering the canal, water can be diverted to a culvert that runs to the River Anker at a point downstream of Hartshill sewage treatment works. The reservoir is recharged by surface water run-off that is acidic in nature due to the acidic granite geology of the impoundment basin. There have been historical pollution incidents to the Coventry canal resulting in fish mortalities when acidic water that had accumulated in the reservoir was discharged to the canal. Tilcon recently acquired the site and propose to treat the water in admixture with their acidic quarry waters. Water from the reservoir has not been used as a direct supply to the canal for several years.

Nailstone Colliery Site

Nailstone Colliery site is owned by Terry Adams Ltd who propose to restore the site following landfilling. At present the site is unrestored following the 'washing' of the spoil to win the residual coal in the early 1990s. Leicestershire County Council are opposed to the site being used as a co-disposal landfill.

Who is involved?

Birch Coppice

Environment Agency, I. M. Properties, North Warwickshire Borough Council

Mancetter Quarries

Environment Agency, Tilcon, Local Authority

Nailstone Colliery Site

Environment Agency, Terry Adams, Leicestershire County Council

What is happening already?

Birch Coppice

Chemical treatment of the run-off has been carried out on site for a number of years and this has significantly

improved the quality of the water discharged to the Penmire Brook. The discharges from the site are controlled by a discharge consent issued by the Environment Agency and routinely monitored to ensure that the quality is within the required limits. The site owners have submitted a planning application for redevelopment of the majority of the site for business/ industrial use and North Warwickshire Borough Council is currently considering the application. Development of the site will require major re-profiling of the spoil heap and this work, associated cover material and positive site drainage is currently being negotiated with the developer. The Environment Agency is satisfied that the development proposals do not present a threat to the local water environment provided that the required pollution prevention measures are put in place.

Mancetter Quarries & Oldbury Reservoir

The discharges from these sites are controlled by discharge consents issued by the Environment Agency. At present water from Oldbury Reservoir is pumped to Oldbury quarry where it is treated with lime to adjust the pH and reduce the levels of metals (particularly aluminium). Purley quarry is currently dry to facilitate quarrying operations and any water that may accumulate in the quarry is also pumped to Oldbury quarry for pH correction. All treated waters are discharged to a tributary of the River Anker via the consented discharge points and are routinely monitored by the Agency to check that the quality complies with the required consent conditions.

Nailstone Colliery Site

Passive treatment systems have been installed, but these are failing to maintain the quality of the run-off.

Long-term, more sustainable, solutions are needed at these three sites to ensure that the pollution threat to local controlled waters is removed.

ISSUE 6 : Contaminated Run-off from Mining Activities							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
6.1 Continue the chemical treatment of site run-off. Monitor discharge quality and impact on the receiving watercourses	Site operator, EA		+ Maintain the current quality of the Penmire Brook and prevent pollution of the R Anker and Coventry Canal - Effectiveness of treatment is rainfall dependent and subject to failure of the treatment process which could lead to pollution events	R*		Ongoing	J Gilhooly
6.2 Pursue redevelopment of the sites with incorporation of pollution prevention measures to reduce any potential adverse environmental impacts	Site operator	EA, Planning Authority	+ Reduced threat of environmental pollution	R*		Ongoing	S Holland J Gilhooly

The above proposals will work towards achieving the following Agency objectives on delivering integrated river-basin management



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Ensure that all waters are of sustainable quality for their different uses.

Deliver a continual improvement in overall water quality.

Issue 7 Land Use, Conservation and Recreation in River Valleys and Flood Plains

Objectives – To promote the best possible balance between the mineral industries of the Tame/Trent corridor in the LEAP area and water-related conservation and recreation interests

What is the problem?

The character of the rivers Tame and Trent and their floodplains have been severely modified by human settlement and agriculture. All the main rivers in the area have been deepened and resectioned to reduce flooding of agricultural land. This has removed most of the instream habitat features as well as the varied habitat upon which wildlife, including fish, depend. This has also largely separated the floodplain from the influence of the river leading to substantial loss of wetland habitat. More recently the character of the floodplains has been altered by gravel extraction from Kingsbury, south of Tamworth, to Burton on Trent. Many of these gravel workings are below the water table and their afteruse can often therefore be water related. This can range from the creation of habitats of high conservation value eg reedbeds or wet grassland through to active water based recreation. In addition, sympathetic restoration following gravel extraction gives the opportunity to restore instream habitat features such as islands, shoals and riffles and to create a buffer strip alongside the river by the extraction of the gravel immediately adjacent to the river. This also has the advantage that the mineral sites are more sustainable because the 'standoff strip' (the 30m usually required between a mineral site and the river to allow for restoration to agriculture) is not sterilised for future extraction.

Mineral sites will usually have a restoration scheme and afteruse conditions as part of their planning permission. An overall strategy for considering the combined effects of such operations is however required to manage the river corridor as a single unit. The creation of a chain of wetlands along the Tame and Trent valleys will give vastly greater benefit to many wetland dependant species eg waterfowl waders and even bittern, than the same area of habitat in isolated patches. Similarly the recreational use of mineral sites should be seen in relation to the recreational use that can be made of the rivers themselves and of the riverbanks for such activities as walking and cycling.

Who is involved?

Local Authorities, Environment Agency, Mineral Operators, Landowners, English Nature, Wildlife Trust, Sports bodies, Countryside Agency, Sustrans.

What is happening already?

South of Tamworth lie the important water areas of Dosthill and Kingsbury bordering the River Tame. One of the gravel companies is carrying out trials, with Agency approval, to develop river restoration, reedbed creation and fish refuges as part of the restoration of a mineral site. The Agency will continue to support such innovative restoration schemes.

Further north, the Central Rivers Project has brought together a Partnership of local authorities, statutory agencies, the minerals industry, voluntary organisations and others. Its aim is to develop a strategy for some 6,000 hectares of land, lying between Burton upon Trent and Tamworth, focused on the corridors of the Rivers Tame and Trent. Much of this area lies within the National Forest and includes past, current and future gravel workings that offer significant potential for environmental enhancement through restoration.

The aims of the project include:

- regenerating the river corridor and improvement of its quality;
- considering opportunities for providing facilities for water-based sports and active recreation in response to demand for these activities;
- increasing the level of informal recreation use;
- increasing the level of habitat provision in the area (e.g. of wetlands, reedbeds and appropriate woodlands) and specifically to meet habitat and species action plan targets as included within the Staffordshire and National Forest Biodiversity Action Plans; and create a habitat network throughout the Study Area;
- Fully utilising the natural resources of the area to the benefit of the local community

The Central Rivers Project lies within a much larger project initiative identified for the Trent Valley Floodplain, taking in the Trent and all its tributaries and its mouth along the Humber Estuary. The 'Trent Floodplain Initiative' aims to strike a better balance between wildlife, development and agriculture and has been formed to give existing projects a greater profile and to provide better co-ordination via an overall vision and plan of action for the floodplain. The Agency is a lead partner in the Initiative working with bodies such as English Nature and the Forestry Commission. The Initiative is administered from the Agency's Lower Trent office.

The Agency is supportive of riverside paths and is contributing significantly to the creation of the Tame-Trent Walkway aimed at ultimately linking the source(s) of the River Tame in Birmingham with the Humber Estuary. Large sections of the route have already been created through Birmingham and the Burton, Nuneaton and Tamworth LEAP now provides further opportunity to highlight actions required in the central sections of the route. Riverside footpaths along sections of other rivers such as the Anker are also planned.

ISSUE 7 : Land Use, Conservation and Recreation in River Valleys and Flood Plains							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
7.1 Identify stretches of river suitable for restoration work within the 30m - standoff for minerals work. Discuss with LA and minerals operators	EA	LA, mineral operators, landowners WT, EN	+	U	U	2001	A Crawford
7.2 Use land drainage/ flood defence powers/ influence to encourage landowners to improve riverine and floodplain habitat	EA	LA, landowners WT, EN	+	U	U	ongoing	A Crawford
7.3 Use LD / FD powers/ influence to encourage provision of recreational activities in floodplain (especially water based recreation)	EA	LA, landowners sports bodies	+	U	U	ongoing	A Crawford
7.4 Agree a programme of development for the Tame-Trent Walkway in the LEAP area	EA	LAs, CA, Sustrans, landowners		U	U	2000	A Crawford
7.5 Carry out agreed development programme	EA	As above		U	U	2001-2005	A Crawford

The above proposals will work towards achieving the following Agency objectives on delivering integrated river basin management:



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Work with local authorities to maximise the conservation and recreational use and value of our river-basins.

Photograph 10 – Restoration work and habitat creation along the River Tame



Issue 8 Changes in Agricultural Land Use

Objective - To protect and improve the existing landscape in the LEAP area

What are the problems?

The Burton, Nuneaton and Tamworth LEAP area is highly managed and land uses reflect economic influences which determine agricultural management, pressures for built development and increased opportunities for recreation. The characteristic landscapes of the LEAP area are largely historical and are increasingly subject to pressures for change. The nature and scale of development will determine the nature of the cultural heritage and environmental quality of the area.

Much of the area remains agricultural and includes arable or mixed arable and pasture over much of the area. Changes in farming may affect the future management and character of the area. A decline in the maintenance of such features as fences, hedgerows and hedgerow trees may be expected to continue.

In the central part of the LEAP area, an undulating landscape with hedgerows in an agricultural landscape dominated by mixed farming has developed. However, there has been a decline in the quality and extent of hedgerows and the destruction of features such as ridge and furrow as a result of agricultural intensification and arabalisation. Hedgerow and parkland trees are also severely affected by close ploughing. There are many examples of hedgerows becoming dissected or growing up to become lines of unmaintained trees as a result of lack of maintenance. Shelter-belt planting and lines of roadside poplar trees are more recent developments in the rural landscape.

The character of the landscape is strongly affected by the nature of the building materials. New building and the modernisation and improvement of many dwellings using non-local materials urbanises the character of the landscape and reduces its landscape quality and the differences between places. Pressure from over-grazing of pasture is occurring, together with urban fringe pressure for horse paddocks and public access, which is altering the landscape of this area.

Who is involved?

Ministry of Agriculture, Fisheries and Food (MAFF), Countryside Agency (CA), English Nature (EN), Environment Agency (EA), Farming and Wildlife Advisory Group (FWAG)

What is happening already?

Landscape Character Assessments are being undertaken by the County Councils in conjunction with local authorities. MAFF administer the Countryside Stewardship Scheme which focuses resources on 'target areas'. Parts of three current target areas are found within the LEAP area, namely the Forest of Mercia, the National Forest and the Trent Valley and its Tributaries. Targeting statements for these areas include objectives for riverside management and wetland creation.

ISSUE 8 : Changes in Agricultural Land Use								
Options for action		Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
		Lead	Others		EA	Others		
8.1	Survey & assess the extent of changes and identify target areas	MAFF CA EN	EA FWAG	+ identify problem areas	U	U	2000 / 2005	R Coyne
8.2	Promote best practice including the Countryside Stewardship Scheme	CA MAFF	EA FWAG	+ improved countryside diversity	U	U	2000 / 2005	R Coyne

These proposals will work towards achieving the following Agency objectives on delivering integrated river-basin management and enhancing biodiversity:



Improve riverside landscapes.
Manage river-basins in an integrated way, via LEAPs.
Work with local authorities to maximise the value of our river-basins.



Ensure that all aspects of the UK's Biodiversity Action Plan are incorporated into the Agency's guidance and become part of LEAPs.
Allocate specific resources to conservation projects aimed at increasing biodiversity.

Issue 9 Loss of Habitat Diversity on Rivers in the LEAP Area

Objective - To protect and improve the existing river habitat in the LEAP area

What are the problems?

The management of river corridors over an extended period, but particularly since the 1950's has involved straightening and deepening watercourses and the removal of gravel shoals and other instream features. The creation and maintenance of a uniform cross section frequently involved the use of stone revetment. These works were usually accompanied by the removal of bankside trees and shrubs and the loss of bankside and aquatic vegetation, creating an impoverished and rather uniform habitat.

The Agency has a general duty to promote the conservation of fauna and flora which are dependent on an aquatic environment and specific duties to biodiversity. These duties can only be fulfilled by first improving the physical structure of rivers.

Who is involved?

Environment Agency (EA), Landowners

What is happening already?

Some tree and shrub planting has already taken place but further survey and implementation is required. A River Landscape Assessment has been undertaken for the River Anker corridor between Nuneaton and Tamworth. The report highlights opportunities for landscape and habitat improvement. Soft engineering trials are also being undertaken (rather than hard engineering) in bank stabilisation work. The EA is also working with gravel companies and landowners to enhance biodiversity (see issue 7).

ISSUE 9 : Loss of Habitat Diversity on Rivers in the LEAP Area							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
9.1 Develop a riverside tree planting and fencing programme	EA MAFF	Land Owner	+ Improve riparian habitat	£5K	U	2000 / 2005	R Coyne
9.2 Develop a buffer strip creation programme	EA MAFF	Land Owner	+ Improve riparian habitat	U	U	2000 / 2005	R Coyne
9.3 Investigate the possibility of instream features including recreating gravel shoals	EA		+ Improve in-channel habitat	U		1999 / 2000	T Jacklin

These proposals will work towards achieving the following Agency objectives on delivering integrated river-basin management and enhancing biodiversity:



Improve riverside landscapes.

Manage river-basins in an integrated way, via LEAPs.

Work with local authorities to maximise the value of our river-basins.



Ensure that all aspects of the UK's Biodiversity Action Plan are incorporated into the Agency's guidance and become part of LEAPs.

Allocate specific resources to conservation projects aimed at increasing biodiversity.

Issue 10 Water Quality in Rivers and Canals

Objectives – To improve river water quality to meet strategic objectives and to make further water quality improvements

What is the problem?

We need to invest in our rivers to secure the present quality of river water and to make progress towards achieving long-term quality objectives.

Quality Objectives

The Environment Agency sets strategic targets called River Quality Objectives (RQOs) for rivers and canals. RQOs provide a basis for water quality management decisions and are based on a chemical classification system called The River Ecosystem Classification Scheme. The scheme comprises five quality classes that reflect the chemical quality requirements of different types of river ecosystems. There are also statutory targets for some rivers and canals called Water Quality Objectives (WQOs) for the purposes of implementing several EC Directives. The Directives involved include those concerned with Surface Water Abstracted for Potable Supply, Freshwater Fisheries and Dangerous Substances.

This issue addresses those river and canal stretches where water quality is poor and/or there has been a failure to comply with the objective. In some cases it will be possible to upgrade the long term RQO, where work has been undertaken by Environment Protection staff to secure improvements in water quality. Wrong connections are a common problem and where dilution is low in small watercourses such as the Nuneaton Flood Relief Channel serious pollution can result.

Of particular interest for this LEAP are the effects on water quality in the area resulting from the polluting activities that impact on the River Tame and its tributaries on their course through the Birmingham/Black Country conurbation. Whilst the effects on water quality may be felt in the LEAP area the causes, and therefore required actions, are found in the area covered by the West Midlands-Tame LEAP. Because of the direct relevance of upstream conditions, Issue 11 (The Effect of the West Midlands-Tame Catchment on Downstream Water Quality) and Issue 7 (Lea Marston Purification Lakes) of the West Midlands-Tame LEAP are included as appendix 5 for reference. The monitoring of these issues and actions such as Agency peroxide dosing to counteract low dissolved oxygen events will continue to be addressed via the West Midlands-Tame LEAP review process.

Sketchley Brook

There are colour problems in the Sketchley Brook at Hinckley. A number of companies in the area discharge trade effluent containing dye to the foul sewer. The sewage treatment process does not always remove the dye in the effluent and consequently the final effluent discharged from Hinckley sewage treatment works can, on occasion, be coloured and this affects the brook downstream.

Who is involved?

Quality Objectives

Environment Agency, Severn Trent Water Limited, local industry, local farmers, landowners

Sketchley Brook

Environment Agency, Severn Trent Water Limited, local dye traders

What is happening already?

Quality Objectives

The Agency routinely monitors controlled waters in the LEAP area and reports the quality on an annual basis. Environment Protection staff continually investigate the reasons for poor water quality and will take appropriate action against those who are identified as being responsible for polluting sources.

Asset Management Plans

Asset Management Plans (AMPs) are strategic plans for programmed investment in the infrastructure of private water companies, so that they might meet obligations relating to water supply and sewage treatment.

The Government has recently agreed the programme of improvements for AMP3 (2000-2005) and in the Midlands Region the figure for spending by the water companies will be approximately £0.8 billion. Implementation of the AMP 3 programme will lead to improvement schemes at twenty sewage treatment works and several combined sewer overflows in the LEAP area.

Sketchley Brook

Severn Trent Water Limited introduced chlorine dioxide dosing at Hinckley sewage treatment works in February 1998 to remove colour. This has been largely successful, however the Agency has commenced biological survey work along the brook to determine if the dosing is having an adverse effect on the aquatic life. The Agency is supporting Severn Trent in its negotiations with the dye traders to reduce and treat the dye waste at source before it is discharged into the sewerage system.

ISSUE 10: Water Quality in Rivers and Canals							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
10.1 Investigate and report the reasons for RQO non-compliance and/or poor water quality. Take action as appropriate	EA	STW Ltd., Industry, Farmers, other dischargers	+ Will help to secure water quality improvements	R		2000/2005	J Gilhooly M Haslam
10.2 Investigate failures in water quality caused by dangerous substances	EA		+ Will help to secure water quality improvements	R		2000/2005	J Gilhooly
10.3 Upgrade RQOs for designated stretches of water where feasible	EA		+ This will develop secured improvements into a new planning baseline for future water quality decisions	R		2000/2005 (via Annual Reviews)	M Haslam
10.4 Negotiate with dye traders in the catchment to reduce the impact of dye effluent in the Sketchley Brook	STW Ltd. Traders	EA	+ Improve the aesthetic quality of the Sketchley Brook	U	R	2000/2005	J Gilhooly
10.5 Assess the impact of Chlorine Dioxide dosing at Hinckley stw on the Sketchley Brook by monitoring biological quality	EA		+ Will detect evidence of chronic adverse effects	R		2000/2005	G Fretwell
10.6 Monitor implementation of AMP3 improvement schemes and assess water quality commencing 1 year after completion of each scheme	EA		+ Secured long term improvements in water quality	R		2000/2005	J Gilhooly M Haslam

The above proposals will work towards achieving the following Agency objectives on delivering integrated river basin management:



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Ensure that all waters are of sustainable quality for their different uses.

Deliver a continual improvement in overall water quality.

Photograph 11 – The River Trent at Burton-upon-Trent



Issue 11 *The Impact of Canal Restoration Schemes*

Objectives –To ensure proposals to restore canals maximise environmental and recreation benefit and do not jeopardise existing water resources and nature conservation interests.

What is the problem?

The EA under its recreation duties generally supports the restoration of disused canals where this does not conflict with its other duties, eg conservation and water resources. Nationally there are a large number of proposals to restore or re-create canals. Within the LEAP area, the Lichfield and Hatherton Canal Restoration Trust has begun to restore the Lichfield Canal which would link the Wyrley and Essington Canal in Walsall with the Coventry Canal. The source of water for this project has not yet been determined and the route passes through an area where water resources are scarce. It is therefore unlikely that licences would be granted for either groundwater or summer surface water abstraction. Water may therefore be required from existing canal sources where spare capacity exists and this could adversely affect river systems elsewhere in the catchment. A full understanding of the water supplies is required to assess the impact of restoration proposals.

The re-instatement of a canal of this length (approximately 11km) will require careful environmental planning in order to reduce any unnecessary environmental impact and to maximise possible benefit. It is therefore considered essential that an environmental assessment as required under European Directive 85/337/EC 'Assessment of the Effect of Certain Public and Private Projects on the Environment' be carried out. This should include details of the proposed source of water and projected water use as recommended by the IWA and EA.

In the east of the LEAP area on the Ashby Canal, a restoration scheme is being developed by the Ashby Canal Partnership with Leicestershire County Council as the lead body. At most, one back-pumped lock is proposed and so the only water losses on the restored section of the canal would be through evaporation. An investigation is to be made by the Trust of the ecological impact of reopening the northern section of the canal to navigation.

Who is involved?

Environment Agency, Local Authorities, English Nature, Lichfield and Hatherton Canal Restoration Trust, Ashby Canal Partnership.

Photograph 12 – The Ashby Canal at Sutton Wharf



What is happening already?

The Lichfield and Hatherton Canals Restoration Trust has recently commissioned a preliminary environmental report on the proposals along with a built heritage survey.

The restoration of the northern end of the Ashby Canal is underway with a section around Moira currently being restored and the section from Snarestone to Measham is to be authorised under the Transport and Works Act.

The work schedule and financial input is the obligation of the two Trusts involved. Any subsequent licence applications will be dealt with within the legislative framework of the Agency.

ISSUE 11 : The Impact of Canal Restoration Schemes							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
11.1 Carry out an environmental assessment to determine the impact of restoring the Lichfield canal on water resources and nature conservation	Canal Trust	EA, LA, EN	+ Ensures water resources and nature conservation interests are not prejudiced	U	U	To be determined	A Crawford
11.2 Investigate the ecological impact of reopening the northern section of the Ashby Canal	Canal Partnership	EA, LA, EN	+ Ensure nature conservation interests are not prejudiced	U	U	To be determined	A Crawford

The above proposals will work towards achieving the following Agency objectives on delivering integrated river basin management



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Enhance and conserve inland navigations, as national assets of environmental, economic, social and recreational value.

Work with local authorities to maximise the conservation and recreational use and value of our river basins.

Issue 12 Sustainable Urban Drainage

Objective –To encourage and promote the appropriate use of source control techniques to reduce the impact of urban run-off.

What is the problem?

Urban development generally involves the exchange of natural vegetation for hard paved areas in the form of roofs, roads and car parks. This fundamental change from a natural to a 'built environment' has two damaging consequences. Firstly, the new hard surfaces prevent or greatly reduce infiltration into the natural surface layers which replenishes the natural below ground water table and also the new hard surfaces can increase the risk of flooding downstream. Secondly, surface water running over these new hard surfaces becomes contaminated with oil, silt, leaves, dog mess etc producing a mixture of pollutants.

Thus heavy rainfall on developed areas accelerates run-off and leads to a potentially damaging cocktail of pollutants which flushes rapidly into drains thence to rivers causing immediate contamination and flooding.

Who is involved?

Environment Agency, Planning Authorities, Sewerage Undertakers, Highway Authorities, Developers.

What is happening already?

'Sustainable urban drainage' or 'source control' are the terms used to describe techniques that minimise the quantity of water collected as well as minimising the quantity of water discharged, thus reducing the polluting and damaging physical effects of the first flush of contaminated surface water after heavy rainfall. Such techniques include the use of soakaways, grass swales, wetlands, infiltration basins, porous attenuation ponds and porous pavements.

The URGENT projects 'Modelling of river corridors: the scientific basis for rehabilitation of urban rivers' and 'Using urban aquifers: sustainability at different space and time scales' may be relevant to this issue.

Adoption Issues relating to infiltration drainage

In order to address problems of urban surface water run off, various surface water source control techniques can be utilised. These systems do not necessarily depend on highly permeable ground conditions and have been successfully installed in other parts of Europe on heavy clays. One of the biggest issues in promoting the use of such methods is that of adoption, 'who is going to undertake long term maintenance?'

If it is required such maintenance is relatively straightforward being of a landscaping nature and is not financially or physically onerous. A small commuted sum treated as a site infrastructure charge could be placed upon the developer with the maintenance responsibility being undertaken as part of the usual open space maintenance practice namely either by the local authority or the landlord.

It is the policy of sewerage undertakers not to adopt infiltration systems. It is also difficult to persuade many Councils who have highway responsibilities to adopt highways that drain to infiltration systems although 'soakaways' are included in the statutory definition of a drain. Adopted roads must have proper provision for drainage.

Production of Source Control Area Maps

The Environment Agency in its development control role actively promotes source control techniques that mimic natural drainage by allowing recharge of local groundwater and gradual seepage to watercourses. However, due regard needs to be made of the suitability of the location in question. Groundwater that is abstracted for public supply is usually of high quality and often requires little treatment prior to use, compared to surface waters. It is however vulnerable to contamination from both diffuse and point source pollutants from both direct discharges into groundwater and indirect discharge into or onto land. Infiltration methods (ie where surface drainage soaks into the ground) will therefore generally not be acceptable close to a groundwater source borehole.

The production of plans covering the LEAP area showing areas where source control techniques are, and are not

suitable would be of significant help in determining appropriate drainage methods. In conjunction with production of a plan, supportive guidance needs to be given to local authority Building Control Officers whose role is to determine the suitability of a site with regard to ground hydraulic properties.

As a first step, Agency Development Control Staff propose to meet with Building Control Officers from local authorities in the LEAP area to provide advice and promote the new CIRIA manual of good practice on 'Infiltration Drainage'. The Agency wishes to promote changes in drainage practice with Highway Authorities, developers and architects.

Local authority planners also have an important part to play and the use of unilateral undertakings or section 106 agreements may provide funding for the maintenance of source control structures.

ISSUE 12 : Sustainable Urban Drainage							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead ²	Others		EA	Others		
12.1 Set up workshop/ seminars with EA/ LA/Water Companies to discuss adoption issues	EA	LA/ Water Companies	+ More extensive use of source control. Improved quality of urban run-off. Improved groundwater recharge	U	U	2000	V Brown J Gilhooly
12.2 Dependant on above, develop pilot projects using source control techniques	EA	LA	+ More extensive use of source control. Improved quality of urban run-off. Improved groundwater recharge	U	U	2000	V Brown J Gilhooly
12.3 Identify source control suitability area maps	EA		+ More extensive use of source control. Improved quality of urban run-off. Improved groundwater recharge	U		2000	A Dacey
12.4 Promote use of CIRIA Manual of Good Practice on Infiltration Drainage with LA Building Control staff and others	EA	LA	+ More extensive use of source control. Improved quality of urban run-off. Improved groundwater recharge	U	U	Ongoing	V Brown J Gilhooly
12.5 Promote conservation use of balancing areas and swales	EA		+ Enhancement for wildlife and amenity	U		Ongoing	A Crawford

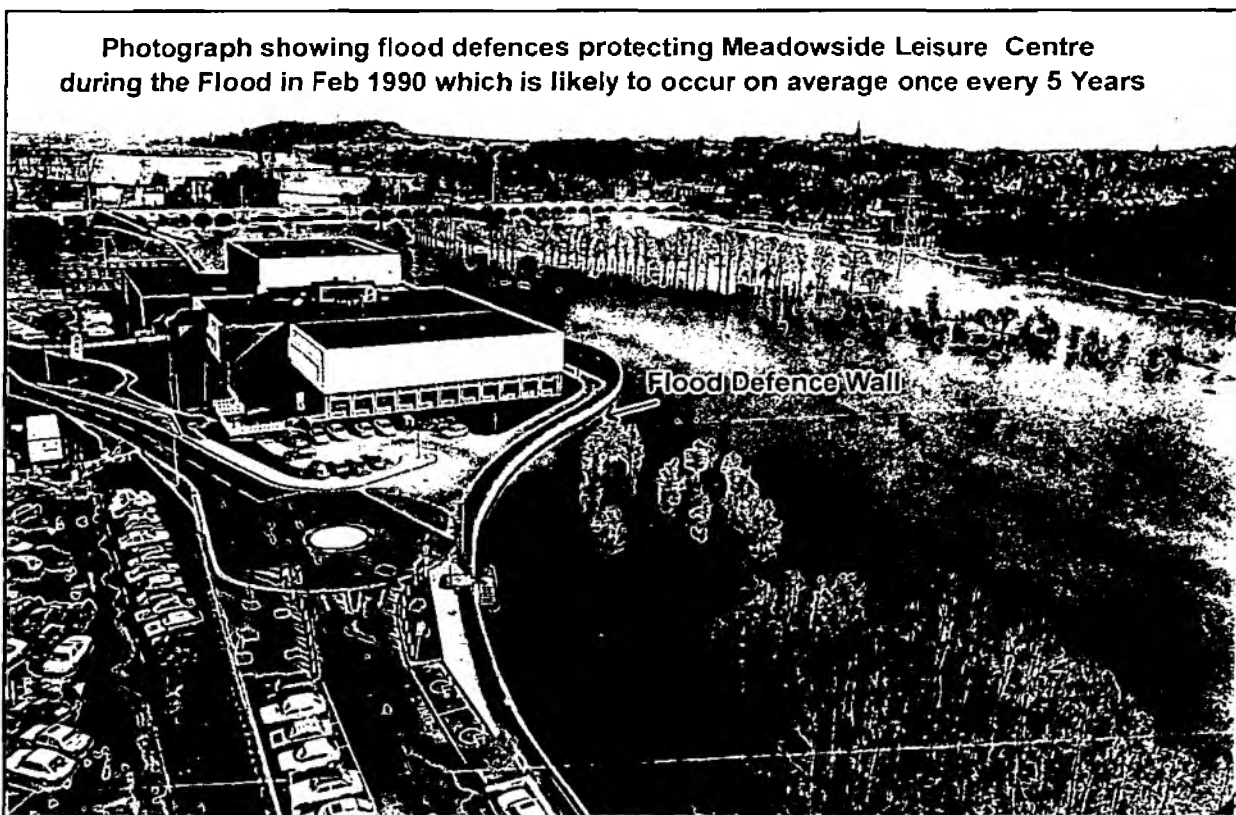
The above proposals will work towards achieving the following Agency objectives on delivering integrated river basin management



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Work with local authorities to maximise the conservation and recreational use and value of our river basins.

Photograph 13 – Flooding at Burton-upon-Trent



Issue 13 Main River Flooding

Objective –To review and improve flood defences in the LEAP area.

What is the problem?

The Agency's mathematical modelling exercise of flood flows on the lower section of the River Tame was finally completed in early 1999 and the flood plain maps produced have revealed 36 properties at risk. The exercise also indicated that whilst the existing flood defences at Tamworth and Fazeley are not overtopped at 1 in 100 year flood events the freeboard (height of crest of flood defence above the 1 in 100 year flood level) ranges from 0.18 metres to 0.30 metres whilst the Agency's traditional design requirement is 0.6 metres for earth embankments. On 16/18 January 1999 serious flooding of 19 dwellings and 50 gardens occurred at Longshoot, Nuneaton from the Harrow Brook and its tributaries draining the Longshoot. Since 1958 there have been nine serious flooding incidents in this location.

Who is involved?

Environment Agency, Severn Trent Water plc, Local Authority.

What is happening already?

The River Tame modelling exercise completed early in 1999 is being appraised with regard to possible defences to those properties at risk and any justifiable schemes will be included in the programme of works for 2001/2.

There was a public meeting on 8 February 1999 with presentations by representatives from the Agency, Nuneaton and Bedworth Borough Council and Severn Trent Water plc to provide the residents of the Longshoot affected by the flooding with an explanation of the cause of the flooding and possible solutions.

- The Environment Agency is the Land Drainage Authority for designated Main Rivers.
- The flooding occurred following heavy rain during the early hours of Saturday 16 January. From the Agency's rainfall recorder at Hinckley approximately 16mm of rain fell between midnight and 3a.m. This rain fell onto an already saturated catchment which meant that the ground was unable to soak up any of the rain and so it ran off across the land and directly into the ditches and rivers.
- The Agency had several flood warnings in force throughout the area including an Amber warning for the River Anker. The Nuneaton Flood Relief Channel was in operation and at higher levels than previously recorded.
- The Agency is working with Nuneaton and Bedworth Borough Council, Severn Trent Water plc and the residents of the Longshoot to develop possible flood alleviation options. However, any resulting flood alleviate scheme will have to be economically justifiable to attract Agency funding ie the economic benefits of the scheme must be greater than the cost of designing and constructing any such scheme. This economic assessment will be made in accordance with Ministry of Agriculture, Fisheries and Food guidance. Severn Trent Water plc in conjunction with the Council as their sewerage agents jetted out the piped elements of the watercourse system and carried out a CCTV survey. In May, the surface water sewer crossing Longshoot Road was replaced. The Agency expects to complete its appraisal of possible flood alleviation measures, with a view, if justified, to including them in its programme of works for the summer of 2001.

ISSUE 13: Main River Flooding							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
13.1 Carry out appraisal of 36 properties at risk as identified by R. Tame 100 year flood outcome	EA		+ Protection against flooding	U		Dec 1999	V Brown
13.2 Instigate any justifiable schemes from I	EA		+ Protection against flooding	U		Mar 2000	V Brown
13.3 Complete Agency's appraisal of flooding at Longshoot and investigate possible flood alleviation works	EA	STW, LA	+ Protection against flooding	U	U	Dec 1999	V Brown
13.4 Instigate flood alleviation scheme at Longshoot	EA		+ improved environment	U		2001/2	V Brown

The above proposals will work towards achieving the following Agency objectives on conserving the land



Develop new methods to survey and manage flood defences.

Issue 14 Easter 1998 Floods: Lessons Learned by the Agency

Objective – The severe flooding which affected large areas of central and eastern England and parts of Wales over the 1998 Easter weekend called for urgent action from the Agency on two fronts. To improve flood warning systems and flood defences which had proved deficient in some areas and to learn the wider lessons of the Easter event.

What is the problem?

At Easter 1998 it was clear that many people were unaware of either the level of flood risk facing them or what flood warnings they could expect to receive. When the floods receded many victims were left without help, confused about how to begin the task of cleaning up the damage and anxious about the effects on their health and the safety of essential gas, water and electricity supplies.

Who is involved?

Environment Agency (EA), Emergency Services, District Councils, Internal Drainage Boards (IDB), MAFF

What is happening already?

The Agency has a supervisory responsibility for all flood defence matters. For main rivers we have permissive powers for improvement and maintenance and the other operating authorities namely District Councils and Internal Drainage Boards have parallel powers for ordinary watercourses and IDB areas respectively.

The Agency is empowered to provide a flood forecasting and flood warning system. In 1996 the Agency took over responsibility for flood warning from the police and is responsible for:

- Issuing effective warnings to people at risk
- Warning and advising the emergency services and other organisations who have prime responsibility for implementing emergency response plans eg. Evacuation, issuing of sand bags, provision of temporary accommodation and people's other immediate needs.

The Minister Elliot Morley in his Parliamentary statement of 20 October 1998 highlighted a series of specific targets for the Agency.

The following actions have been completed by the Environment Agency since this statement:

- Flood warning dissemination plans checked for errors and omissions.
- In conjunction with MAFF and other operating authorities supervisory responsibilities have been developed for all flood defence matters.
- Internal management structures have been addressed and action taken to address skills shortages.
- Local Authorities and emergency services approached to assess emergency response arrangements. Plans made for future emergency exercises to test these arrangements.
- For each river catchment flood warning needs and flood forecasting techniques have been determined.
- Rainfall and river gauge coverage required to deliver identified problems reviewed.
- Publication of flood risk maps to local authorities
- Proposals for development in flood risk areas are being opposed via both the planning application and development plan consultation processes

ISSUE 14 : Easter 1998 floods: Lessons Learned by the Agency							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
14.1 Carry out a detailed review of dissemination plans for content, scope and coverage and review the content of flood warning messages	EA		+ improved flood warning system	U		September 1999	V Brown
14.2 Complete visual surveys of all flood defences and undertake regular updates thereafter. Couple this with less frequent but more rigorous structural surveys of flood defences	EA		+ improved flood defences	U		April 2000	V Brown

The above proposals will work towards achieving the following Agency objectives on conserving the land:



Secure an adequate level of investment in flood defence.
 Discourage development in flood plains.
 Develop new methods to survey and manage flood defences.
 Report regularly on the state of flood defences.

Issue 15 Water Level Management Plans

Objective – To review the requirement for water management plans within the plan area. Seek out any shortcomings and encourage the relevant authorities to take the necessary action.

What is the problem?

The 'Conservation Guidelines for Drainage Authorities' (MAFF/DoE/Welsh Office 1991) states that Water Level Management Plans should be produced for all areas of conservation interest where water levels are artificially controlled with priority given to all Sites of Special Scientific Interest (SSSI's). Guidance for their production is given in the MAFF booklet "Water Level Management Plans – A Procedural Guide for Operating Authorities" published in 1994, the following plans have been drawn up in accordance with this guidance.

Who is involved?

Land Drainage Operating Authorities namely Environment Agency (EA) for main river and Local Authorities (LA) for ordinary watercourses.

What is happening already?

The Upper Trent area of the Agency have produced eight Water Level Management Plans, two of which fall within the LEAP area. Birches Barn and Alvecote Pools, both on the river Anker, have each been through the consultation stage and been finalised and agreed by English Nature in 1997.

Each plan has a list of actions which will either maintain or enhance the interest on the site as well as gather more information to allow decisions on future management to be made. On sites where the Agency does not act as a drainage authority ie sites associated with ordinary watercourses, the production of Water Level Management Plans by District Councils has been less successful. The deadline for plan production is 1999 and it is important that all relevant authorities are made aware of their role in this process.

ISSUE 15 : Water Level Management Plans							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
15.1 Update list of SSSI's requiring Water Level Management Plans	EN	EA	+ ensure appropriate sites are incorporated into a plan	U	U	1999	V Brown
15.2 Assign any outstanding Water Level Management Plans to the relevant drainage authority	EN	EA	+ ensure appropriate sites are incorporated into a plan + action plans produced	U	U	1999	V Brown
15.3 On completion of Agency plans begin work on action lists and monitoring	EA	EN	+ maintenance and enhancement of SSSI's	U	U	2000/2005	V Brown
15.4 Full plan review to be undertaken in 2002	EN	EA, Local Authorities	+ continued maintenance and enhancement of SSSI's	U	U	2002	V Brown

Photograph 14 – Alvecote Pools SSSI



These proposals will work towards achieving the following Agency objectives on enhancing biodiversity and delivering integrated river-basin management:



Improve the management of wetlands for conservation purposes.
Play a full part in implementing the EC Habitats Directive.



Manage river-basins in an integrated way, via LEAPs.
Work with local authorities to maximise the conservation value of our river-basins.

Issue 16 The Birmingham Northern Relief Road

Objective –To reduce the impact on the environment from the construction of the BNRR, associated public road alterations and new development associated with the new road.

What is the problem?

The main aims of the proposed BNRR are:

- to provide relief to the existing M6 between junctions 4 and 11
- to provide a distributor to the north of the West Midlands
- to have regard to the National Road Traffic forecasts 1989
- to provide the infrastructure to relieve traffic congestion

The proposed construction of the BNRR represents a major challenge to all organisations involved in environmental protection. Whilst a full environmental assessment has been prepared for the project the Environment Agency is particularly concerned to ensure that a number of key aspects of the proposal are addressed:

- culverting of water courses is restricted to only essential work
- receiving watercourses for highway discharge are not overloaded
- high pollution risks
- release of greenbelt land to meet development pressures
- motorway service areas located on the Lichfield aquifer
- waste arising during the construction is dealt with in accordance with the appropriate regulations

Who is involved?

Midland Expressway Ltd, Department of Transport, Environment Agency, Local Authorities

What is happening already?

Midland Expressway Ltd. have the concession to design, build, finance and operate the BNRR. The company has prepared engineering proposals for details of junction and motorway service areas. Construction will involve:

- balancing ponds to attenuate discharges to receiving watercourses
- stream diversions
- culverting of watercourses eg the River Tame at junction 9 of the M42
- planting within the River Tame flood plain between the A446 and M42

Planning applications have already been submitted to the local authorities for development around the proposed junctions.

The Environment Agency has been advising Midland Expressway on the design of water course crossings and outfalls, consents and capacity problems especially in the Gains Brook. Consents required from the agency include:

- Land Drainage Consents under the Land Drainage Act 1991 and Water Resources Act 1991.
- Discharge Consents for all controlled outfalls under the Water Resources Act 1991.

In addition to the above, the Countryside Agency has been leading a project to look at landscape, recreation and ecological enhancement around the north-east of Birmingham. The aim of the project is to look at an area including, but not entirely defined by, the visual corridor of the BNRR route, within which urban fringe and regeneration issues generally would be covered. The Environment Agency and other key partners are contributing to this project.

ISSUE 16 : The Birmingham Northern Relief Road							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
16.1 Set up a BNRR working group	EA	ME, LAs	+ Holistic and co-ordinated approach to protection of the environment	U	U	Ongoing	V Brown
16.2 Meetings with LPAs to discuss potential impacts of release of land	EA	LPAs, Developers	+ Protection of water courses as part of development process	U	U	Ongoing	P Swain S Holland
16.3 Progress Corridor – wide Strategic Environmental Initiative	CA	EA, HA LAs	+ Landscape, recreation and ecological enhancement	U	U	Ongoing	A Crawford R Coyne

The above proposals will work towards achieving the following Agency objectives on conserving the land



By influencing the town and country planning system and by promoting and encouraging best practices to minimise pollution.

Issue 17 Fly-tipping, Litter and the Aesthetic Pollution of Rivers and Canals

Objectives –To reduce incidences of fly-tipping and improve the overall appearance of rivers and canals.

What is the problem?

Litter, unauthorised tipping and other forms of aesthetic pollution often detract from the enjoyment that can be gained from undertaking recreational activities alongside watercourses. The problem can be particularly extensive in urban areas.

Fly-tipping is the illegal disposal of waste on public and private land that is not licensed to receive it. The cost for clearing up fly-tipped material is the responsibility of the landowner, but if the deposit has occurred on public land then the Local Authority has a duty to remove the waste.

In the Burton, Nuneaton and Tamworth LEAP area fly-tipping is not a significant problem but does occur across the catchment and involves a variety of wastes.

Who is involved?

Environment Agency, Local Authorities, Tidy Britain Group, Groundwork, Wildlife Trusts, Police.

What is happening already?

The Environment Agency has developed and is trialling an assessment scheme which measures aesthetic pollution in terms of the presence of litter, gross items (eg. shopping trolleys), sewage debris, dog faeces, iron deposits, surface scums, oil, colour and odour. In this context aesthetic pollution does not include the wider visual appearance of the surroundings of the watercourse.

The Environment Agency uses a classification system to determine the severity of an environmental pollution incident and this is then used as part of the Agency's Enforcement and Prosecution Policy to determine the level of enforcement action which may be taken against an identified polluter. Enforcement action can vary from a written warning, to prosecution in the Crown Court with a potential penalty of up to 5 years imprisonment and/or an unlimited fine.

We will also seek to encourage local agreements to combat fly-tipping, based on the protocol detailed within the existing Memorandum of Understanding between the Environment Agency and the Local Government Association and the 'Fly Tipping Stakeholders Forum'.

The Agency will seek to reduce litter and unauthorised tipping by working with local groups to tackle specific problem areas and increase the awareness of the public to such matters through the development of an environmental education strategy.

ISSUE 17 : Fly Tipping, Litter and the Aesthetic Pollution of Rivers and Canals							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
17.1 Continue development of GQA aesthetic monitoring programme	EA		+ Quantitive measure of problems at individual sites	R		To be determined	J Gilhooly M Haslam
17.2 Implement GQA aesthetics monitoring programme as required	EA		+ National measurement providing quantitive evidence on the aesthetic appearance of watercourses	R		To be determined	J Gilhooly
17.3 Promote clean up initiatives through: - The encouragement of stewardship by voluntary groups and others - The disposal of unauthorised tipped material and reduction of its future re-appearance through site management - Promote measures to reduce sewage derived debris by reduction at source	EA, LAs, TBC, BW, STW Ltd, CA	Riparian owners, product manufactur ers	+ less polluting material leads to improved environment	R*		2001-2	A Crawford J Gilhooly J Gilhooly
17.4 Develop a local campaign and establish partnerships to deliver it	EA	EA,LAs, WTs, community groups, others	+ improved environment	R*		2001-2	M Haslam
17.5 Liaise with local authorities and others to implement the Agency and local authorities' protocol on fly-tipping	EA, LAs, Police		+ Better use of resources to combat a shared problem	R		2001-2	J Gilhooly

The above proposals will work towards achieving the following Agency objectives on delivering integrated river basin management:



Manage river-basins in an integrated way, via Local Environment Agency Plans.

Enhance and conserve inland navigations, as national assets of environmental, economic, social and recreational value.

Work with local authorities to maximise the conservation and recreational use and value of our river basins.

Issue 18 Enclosure of Waste Transfer Stations

Objective – To reduce the nuisance associated with the operation of large commercial transfer stations

What is the problem?

Household, commercial and industrial wastes are often collected in skips and taken to transfer stations where they are stored, mixed and loaded into large bulk vehicles for transportation to landfill sites, often outside the area. Although transfer stations can have significant environmental benefits such as the recovery of reclaimable materials and the efficient use of fuel in transporting waste, they can also cause problems. Sites where the activities are undertaken in the open and that are close to houses or commercial and industrial premises can generate nuisances such as dust, litter, odours and pests such as rodents and flies. Such sites may also have a particularly unattractive visual impact.

Who is involved?

Environment Agency, Site operators, Local Authority

What is happening already?

All such sites require a waste management licence, but experience has shown that imposing suitable operating conditions on the licence does not always prevent the nuisance problem. In recent years the licences issued for new larger sites have required that the waste handling activities are undertaken inside the building where the problems can be contained and controlled by suitable treatment. The Agency will review the licences of all other existing large commercial transfer stations in urban areas with the aim of enclosing waste handling activities to reduce the impact of such sites on the environment.

ISSUE 18 : Enclosure of Waste Transfer Stations							
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer
	Lead	Others		EA	Others		
18.1 Review licences of existing large commercial transfer stations with a view to improving the enclosure of waste handling activities	EA, Operators	LAs	+ Reduced nuisance levels from sites	R*		2000	D Lowe
18.2 Promote the enclosure of waste transfer activities	EA, LAs	Operators	+ Fewer sites causing environmental pollution	U		ongoing	D Lowe
18.3 Modify waste management licences when necessary	EA		+ Operators will be required by law to maintain site to a satisfactory condition	U		2000	I Brindley

The above proposals will work towards achieving the following Agency objectives on managing waste:



Provide a high quality waste regulation service.

Encourage and inspire industry to develop new and improved techniques for the management of special wastes.

Research into the technical needs of successful waste management, including best practise and best practicable environmental options.

Photograph 15 - A Waste Transfer Station



Issue 19 Campaigning on Waste Minimisation

Objective – To reduce the amount of waste produced in the LEAP area, to increase the proportion of waste managed through re-use, recycling and waste recovery, and to minimise the risks of immediate and future environmental pollution and harm to human health.

What is the problem?

For every tonne of useful produce made in the UK, we consume about 10 tonnes of other resources – raw materials and energy. Every year the UK produces at least 120 million tonnes of household, commercial and industrial waste, around 70 percent of this is currently disposed of to landfill.

Waste represents an inefficient use of resources in the production and use of goods. Once produced its disposal, whether through re-use, recycling, recovery or landfill, has an impact on the environment that should be minimised (Less Waste More Value).

The most effective environmental solution is to prevent waste production or to minimise it at source. Failing that reuse and recycling should be considered, as both will reduce the demand for primary resources. However, other factors must be considered, such as treatments to enable the reuse of waste or the distance to recycling facilities. These factors could mean that recovery (waste-to-energy or composting) produces the least environmental impacts. Only once all these options have been explored, should waste be landfilled.

Who is involved?

Environment Agency, Local Authorities, Local Green Clubs, Industry, Householders

What is happening already?

The consultative paper Less Waste More Value sets out the Governments key commitments, which include:

- Substantial increases in recycling and energy recovery
- Engagement of the public in increased reuse and recycling of household waste
- A strong emphasis on waste minimisation
- Use of economic instruments such as the landfill tax

ISSUE 19: Campaigning on Waste Minimisation								
Options for action	Responsibility		Impacts (+ or -)	Estimated Cost		Timescale	EA Officer	
	Lead	Others		EA	Others			
19.1 Encourage reduction in waste production, both in terms of quantity and hazard	E A L As, Green Business Clubs	Waste Producers, Local industry	Reduction in environmental impacts of waste disposal and reduced resource utilisation	U	U	2000/2005	M Haslam	
19.2 Encourage the reuse, recycling and recovery of all wastes	E A, L As, Waste industry	Local industry, Householders, Green clubs	Reduced environmental impact, more efficient resource management	U	U	2000/2005	M Haslam	
19.3 Promote the utilisation of methane produced in landfills wherever possible	E A, Waste Industry		Reduction in the quantity of landfill gas release to the atmosphere	U		2000/2005	J Gilhooly	

The above proposals will work towards achieving the following Agency objectives on addressing climate change and managing waste:



Help to ensure that the Government's greenhouse gas emission reduction targets are met.



Ensure achievement of national waste strategy targets for the reduction of waste disposed of to landfill.
Ensure achievement of national targets for the recovery, recycling and composting of municipal waste.

Introduction

Our natural environment is a complex system and must be managed in many different ways by the broad community both in the short and long term. Where we do have a good understanding of a particular element of the environment the implications of change often remain difficult to predict and understand. The linkages between our society, economy and environment vary over time and the effect of what may at first be a local issue, can have wider regional and even global effects. Work is under way in the UK and across the world to define sustainable development indicators, which can be used to assess environmental change. It is this kind of understanding that resulted in the Earth Summit in Rio in 1992 and the adoption of sustainable development principles with commitment to manage the environment in an integrated way through partnership.

4.1 Sustainable Development

4.1.1 Signposts to Sustainability

The Agency is committed through its principal aim to the principles of sustainable development. The most commonly used working definition was provided in the Brundtland Report "Our Common Future" (1987):

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

Rather than predicting ever increasing environmental decay and hardship in a world of ever decreasing resources, the report saw the *"possibility of a new era of economic growth, based on policies that sustain and expand the natural environmental resource base"*.

Sustainable development does not necessarily mean less economic development. One of the challenges is to promote ways of encouraging economic activity that does not harm the environment, and of discouraging or controlling environmentally damaging activity.

Sustainable development requires a full consideration of environmental, social and economic issues during the decision making process. Where the full effects of a particular proposal or policy are not known, then the *"precautionary principle"* should be adopted whereby no action is undertaken until such a time as the potential impacts can be more clearly defined. The UK Government is firmly behind the principles of sustainable development and has published "Sustainable Development - The UK Strategy" (1994).

The total of human wealth cannot be measured only by man-made capital but must allow for natural environmental capital and other contributions to our quality of life. Natural capital consists of renewable and non-renewable resources. The challenge of sustainable development is to find ways of enhancing total wealth while using common natural resources prudently, so that renewable resources can be conserved and non-renewable resources used at a rate which considers the needs of future generations. In this it is particularly important to consider whether there is a risk of irreversible environmental change and, if so, how significant this may be.

Making judgements about the weight to be put on these factors when considering development will vary. However, we should make a proper allowance for the interests of future generations and for the pressures that society places on the global environment.

A lot of environmental pollution and resource depletion occurs because the people responsible do not bear the cost. It is important that policy is guided by the "polluter pays" principle, which requires that when production processes threaten or cause damage to the environment, the costs of environmental measures be borne by the producer and not society at large. However, there is an element of choice by the consumer where they are aware that damage to the environment is being caused by the producer. This also provides an incentive to reduce pollution. In the case of historical pollution, where a responsible party cannot be identified, the cost inevitably has to be met by the public.

For sustainable development to be achieved, all stakeholders should contribute to decision making and implementation. It is important that dilemmas and problems are resolved in ways that take account of the views of those concerned, for without widespread support, little will be achieved.

4.1.2 Government Guidance to the Agency on Sustainable Development

In November 1996, guidance was given to the Agency by the Government on its contribution to sustainable development. The following summarises the guidance given:

- Because the environment is shared, collective action is necessary;
- Decisions should be based on the best possible scientific information and analysis of risks;
- Ecological impacts must be considered, particularly where resources are non-renewable or effects may be irreversible;
- Cost implications should be brought home directly to the people responsible - the "polluter pays" principle;
- A holistic approach should be taken to environmental objectives, the Agency should make use of integrated catchment planning or other geographical planning tools;
- A long term perspective should be taken;
- Biodiversity should be conserved and enhanced and natural heritage protected;
- A contribution should be made to protecting the global atmosphere;
- The scope for reconciling the needs of the environment and those of development with regard to regulated organisation should be investigated;
- Close and responsive relationships with the public, local authorities, and other representatives of local communities should be developed; and
- High quality information and advice should be used by the Agency and provided to others.

In November 1998 the Government launched 13 'Quality of Life Indicators' intended to reflect everyday concerns. It will allow the Government's performance to be judged by the effect of policies on the environment and social welfare. The indicators are:

- Economic Growth – Total output of the economy (GDP)
- Social Investment – Investment in 'public assets'
- Employment
- Health – Average Life Expectancy
- Education and Training – Based on qualification at age 19
- Housing Quality – Number of homes unfit to live in
- Climate Change – Greenhouse gas emissions
- Air Pollution – In urban areas
- Transport
- Water Quality – Number of rivers of fair or good quality
- Wildlife – population of wild birds
- Land Use – Number of new homes built on previously developed land (brownfield sites)
- Waste – Reduction of waste ie re-use, recycling

LEAPs play an important part in the Agency's contribution and will help it to meet many of the objectives set by Ministers. The Agency's Environmental Strategy has taken on board the above guidance and our nine themes reflect the principles of sustainable development.

4.1.3 Climate Change

The Environment Agency must work in a wider context than simply the carrying out of the functions of its predecessor bodies, because it is now generally accepted that environmental changes are occurring on a global scale. Individual countries contribute to these changes, and respond to them in different ways. The Agency's long-term strategy therefore has to reflect these global issues.

Perhaps the major international issue is that of climate change. Modelling climate change is difficult, and predictions of its effects vary. However, it is now increasingly accepted that temperatures appear to be rising globally, and that this warming may be linked to man's activities. The UK is a contributor to the emission of gases such as carbon dioxide into the atmosphere which are believed to contribute to long-term climate changes.

The UK will also be affected in a complex way as and when the climate does change. The UK is therefore a signatory to the Framework Convention on Climate Change, as agreed at the Rio Summit in 1992, and, following

the 1997 Kyoto summit, is taking an active part in international negotiations to obtain commitments for credible and achievable reductions of greenhouse gas emissions. The European Union's legally binding target as a result of the Kyoto summit is an 8% reduction of greenhouse gases across the EU by 2008-2012. Any commitment to aim for a more ambitious target, or agreement of the relative contributions by each member state has not been reached at the time of writing this report.

For the Agency's part, we can help the Government to meet the greenhouse gas emission targets through regulation of emissions from major industrial processes, by developing methods to improve our estimates of the emission of methane into the atmosphere from landfill sites, by promoting and encouraging the reduction of energy production from burning fossil fuels, by research into measuring the effects of climate change and how to manage them, and of course by setting an example by reducing our own energy and fossil fuel consumption within the Agency. We can also help to mitigate the impacts of climate change through the development of plans to meet the country's water resource needs. Effective demand management of both energy and water resources is becoming increasingly important.

4.2 Protection through Partnerships

Partnership essentially means a number of different interests willingly coming together, formally or informally, to achieve a common purpose in the spirit of trust and commitment. In this plan it is partnerships that will enable the vision and the key objectives to be realised. Such partnerships provide accountability, as well as a means of attracting inward investment, to improve the environment, from such bodies as the European Union (EU) and the National Lottery. This helps to reduce duplication between agencies and allows the pooling of scarce resources.

The Agency is well placed to influence many activities affecting the environment through its own legislative powers, but these are limited in extent and do not necessarily confirm ownership or acceptance of the issues involved. The 1990 Government White Paper, *"This Common Inheritance"* recognised the need for co-operation and joint working when discussing overlapping responsibilities of Local Authorities and other environmental enforcement agencies. Subsequent international agreements and government guidance have further established this principle. Education is also important in changing attitudes and work practices to promote sustainable development.

The Burton, Nuneaton and Tamworth LEAP raises a number of issues that will require a joint approach if they are to be solved. Partnerships will be developed in the short term to address many of the issues through the Action Plan (due August 2000). Environmental management often requires a long term approach which can only be effective through the policies and practices of other interested groups.

4.2.1 Local Agenda 21

Agenda 21 was one of four main agreements signed at the Earth conference at Rio by representatives of 150 countries including the UK government. It is intended to be a *"Comprehensive programme of action needed throughout the world to achieve a sustainable pattern of development for the next century"*. Agenda 21 is an environmental action plan for the next century, which recognises the central role of Local Authorities and the value of partnerships and the local community in achieving sustainable development.

One of the most exciting aspects of Agenda 21 is that it recognises that action by national governments alone is not enough and that all groups - civic, community, business and industrial have to be involved to bring about change. It promotes the idea of thinking globally and acting locally, and all the Local Authorities in the Burton, Nuneaton and Tamworth area have, or are undertaking a consultative process with local people to produce a Local Agenda 21 for their community. Anybody interested in Local Agenda 21 should contact their Local Authority, relevant contacts and the current stage of LA21 in each Local Authority is given in Table 5.

It is the aim of the Agency to integrate LEAP and Local Agenda 21 programmes where appropriate, and it is hoped that this consultation document will assist in developing a working relationship between ourselves and others.

Table 5 - Local Agenda 21 in the Burton, Nuneaton and Tamworth area

Local Authority	Contact	Progress on LA21
Derbyshire County Council	Maggie Bishop: 01629 580000	'Local Agenda 21 - The Challenge' - Autumn 1997
South Derbyshire District Council	Steve Simmons: 01283 228028	LA21 being linked to Community Plan process
Leicestershire County Council	Mike Thomson: 01543 404886	'Ways Forward for a Better Leicestershire' May 1998 and Forum for a Better Leicestershire.
Hinckley and Bosworth Borough Council	Ian Heaven: 01455 238141	Council formally committed to process-Dec 1998 LA21 to be combined with Community Plan process
North West Leicestershire District Council	Karl Letten: 01530 454571	Eco management and audit scheme (emas) in place. Strategy being developed. LA21 combined with Community Plan process
Nuneaton and Bedworth Borough Council	Trish Ingram: 01203 376448	LA21 combined with Community Plan process Community forum and carnival - Sept 1999 2 day conference - Dec 1999
Staffordshire County Council	Andrew Christelow: 01785 277252	Action Programme and First Report published March '96. Process under review. Targetted Action Programme due early 2000
Cannock Chase District Council	Hans Schlappa: 01543 462621	Sustainability Statement by end of 1999. Linking to Best Value.
East Staffordshire Borough Council	Chris Gillie: 01283 508685	'Let's look forward to the 21 st Century' - the LA21 action plan, published 1997
Lichfield District Council	Chris Stanley: 01543 414000	LA21 Strategy emerging from Council's 'Charter for Sustainability' and existing environmental initiatives
Tamworth Borough Council	Tim Birch: 01827 709570	LA21 Strategy - Consultation, November 1999 Linked to Community Development Strategy
Warwickshire County Council	Louise Boffey: 01926 418005	LA21 Strategy will link a series of existing initiatives including: Travelwise, Waste-line Initiative, Local Transport Plan, Green Transport Plan, Countryside Strategy etc
North Warwickshire Borough Council	Andrew Wright: 01827 715341	Internal process of establishing sustainability into culture of the Council.
Rugby Borough Council	Rob Saunders: 01788 533533 Karen Stone: 01788 533850	LA21 Launch Event 1996. 6 topic groups formed following community consultation. Formation of sustainability indicators.
Birmingham City Council	Jane Foreshaw: 0121 303 5444	'Living Today with Tomorrow in Mind' and 'Sustainability Indicators for Birmingham - How do we measure up?' published April 1998. 16 working groups in place
Walsall Metropolitan Borough Council	Steve Lewis: 01922 653365	LA21 Strategy 'Footprint on the Future' 1996. Action Plan 1997 reviewed every 2 years. Annual Environment Assembly. Neighbourhood LA21 groups.

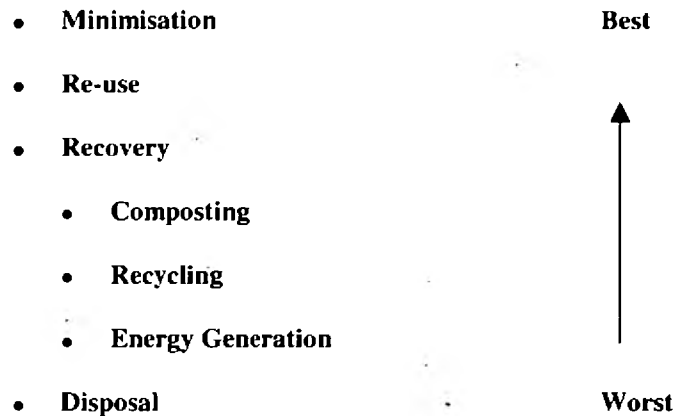
4.2.2 Waste Minimisation Clubs/Business Environment Clubs

The Government's objectives for waste management given in the 1995 White Paper 'Making Waste Work - A Strategy for Sustainable Waste Management in England and Wales' are:

- To reduce the amount of waste that society produces,
- To make best use of the waste that is produced and,
- To choose waste management practices which minimise the risks of immediate and future environmental pollution and harm to human health.

The Government has defined a hierarchy of waste management options which are ranked to give a broad indication of their relative environmental impact.

Figure 4 – Waste Hierarchy



The best option is not to produce waste in the first place. Milk deliveries and milk bottles are a good example of re-use. Recycling includes bottles banks, newspaper banks etc. These require additional energy and the production of further wastes to make useful products. Energy generation covers incineration using waste as a fuel. The last resort is disposal to landfill which is by far the main form of waste disposal in the UK.

The Agency's objective is to move waste management further up the waste hierarchy while retaining the best practical environmental option. Clearly we all have a part to play in reducing the amount of waste produced and making the best use of the waste that is produced. Household waste can be reduced by individuals taking responsibility by re-using, recycling and composting and also by buying long life, reusable and environmentally friendly products with minimal packaging. According to the Department of the Environment, Transport and the Regions 50% of household waste is potentially recyclable. Local Authorities have been set targets by the Government to recover up to 40% of household wastes in England and Wales by 2005.

Individuals and businesses should:-

- Support local waste minimisation and recycling initiatives,
- Support the extension of minimisation and recycling initiatives in their area (such as the provision of home composting bins).
- Reduce the amount of material thrown away.
- Respond to consumer demand to reduce unnecessary packaging and other forms of waste production.

Waste Minimisation/Business Clubs generally offer information, advice and support on systematic approaches to waste minimisation. They disseminate relevant information relating to all aspects of environmental best practice. The club may be a first point of contact for industry and companies will be signposted to appropriate organisations and groups for specific advice.

The objectives of waste minimisation clubs vary according to the partners involved, but are generally:-

- To promote waste minimisation and sustainable waste management in industry and commerce.
- To build links between industries, the Agency, business groups and other interested parties.
- To share and expand existing and new waste minimisation initiatives, ideas and projects.
- To attract, encourage and interest companies that have not previously been involved in waste minimisation rather than concentrating on "preaching to the converted" companies.

Currently several waste minimisation clubs in the area of this plan are being developed, however none are presently running. There are several Business Environment Clubs operational providing a network of environmental support.

4.2.3 Conservation and Recreation Collaborative Projects

By their very nature, conservation initiatives tend to involve several interested parties such as landowners, local and national conservation groups, and Local Authorities or other statutory bodies. The UK Biodiversity Strategy has already caused new partnerships to be set up, and this is a trend that is only likely to continue.

4.2.4 Biodiversity

"Biodiversity" is simply a new term meaning variety of life, and biodiversity conservation is what has long been known as nature conservation. The importance of biodiversity conservation has been recognised internationally by the drawing up of a Biodiversity Convention intended to ensure the conservation of the full range of existing plant and animal species, their genetic variation and the ecosystems in which they live.

Biodiversity Convention

The Convention on Biological Diversity was one of the major initiatives stemming from the 'Earth Summit' in Rio de Janeiro in 1992. The United Kingdom was one of 150 signatories to the convention. Signatories recognised that action must be taken to halt this global loss of animal and plant species and genetic resources and that each country has the primary responsibility to conserve and enhance biodiversity within its own jurisdiction. The Convention agreed to 'develop national strategies, plans and programmes for the conservation and sustainable use of biological diversity', and to share resources to help implement such programmes.

UK Biodiversity Action Plan

The Government's response to the Biodiversity Convention, 'Biodiversity: The UK Action Plan', published in 1994, set out a broad strategy for conserving and enhancing wild species and habitats in the United Kingdom for the next 20 years.

One of the main outcomes of the UK Action Plan was the setting up of the UK Biodiversity Steering Group. The UK Steering Group Report published in December 1995 and endorsed by the Government in May 1996, contains the following key components:

- Developing costed targets for our most threatened and declining species and habitats;
- Establishing an effective system for handling the necessary biological data at both local and national level;
- Promoting increased public awareness of the importance of biodiversity, and broadening public involvement and
- Promoting Local Biodiversity Action Plans as a means of implementing the national plan.

Biodiversity Action Plans

Local Biodiversity Action Plans are seen as a means by which the UK Action Plan can be implemented. They focus resources to conserve and enhance biodiversity by means of local partnerships, taking account of both national and local priorities.

Biodiversity Action Plans and Developing Partnerships

The successful implementation of the Local Biodiversity Action Plans' objectives and targets requires involvement from various sectors. The following organisations all have a role to play: central government and its agencies, land managers, voluntary bodies, academic institutions, local authorities, wildlife trusts and commercial bodies. These partners, together with the local community need to be involved at a local level to ensure the effective development and delivery of these plans.

Having a partnership approach means that the workload can be shared and a wide range of resources and skills used. It also ensures that there is a shared commitment to and ownership of the plan process. This should provide a commitment to the implementation of the plan.

The Staffordshire BAP was published in November 1998; it includes action plans for certain species and habitats of particular concern to the Agency, such as otter, water vole, salmon, white-clawed crayfish, black poplar, wet woodland and rivers and streams.

The Countryside Stewardship Scheme

The Countryside Stewardship Scheme is a MAFF scheme which makes payments to farmers and land managers to improve the natural beauty and diversity of the countryside. Its objectives are to:

- Sustain the beauty and diversity of the landscape;
- Improve and extend wildlife habitats;
- Conserve archaeological sites and historic features;
- Improve opportunities for countryside enjoyment;
- Restore neglected land or features;
- Create new habitats and landscapes;

Each county also has its own priorities and local scheme objectives. In the LEAP area target areas are currently set for The Forest of Mercia and the Trent Valley and tributaries and the National Forest. For more information on this scheme contact your nearest MAFF Regional Service Centre.

4.2.5 The Fire Service

The Agency works closely with the Fire Services (comprising the Fire and Rescue Services for Staffordshire, Leicestershire, Warwickshire and Derbyshire in this LEAP area) in providing a first line pollution prevention service.

The Fire Services are normally first on the scene at road traffic accidents and other major industrial accidents including chemical spillages. This gives them a unique opportunity to deal with any potentially polluting spillages before they reach a watercourse. The Fire Services have agreed to undertake this role where practicable and the Agency has provided training and pollution prevention equipment such as oil absorbent materials and sealants.

The Fire Service immediately notifies the Agency of any potentially polluting spillages or significant fires so that Agency Environment Protection staff can be on site to give advice when required and to deal with any necessary follow up actions.

4.3 Education

Education is a key objective for the Agency and plays a major role in its strategy for environmental protection and improvement. It is essential to the delivery of cleaner more sustainable environment in the long term. In many cases a lack of information and awareness is one of the factors which leads to environmental damage or neglect whether it be by accident or deliberate. There is a need for a greater level of educational involvement by the Agency and a need to raise awareness of environmental issues. The Agency has published an education strategy "Green Shoots" which considers environmental education into the next century.

Our educational goals are to:-

- Build positive partnerships through consultation, joint ventures and sponsorship;
- Help educate young people through teaching aids and other initiatives;
- Improve understanding of environmental issues, through links with education, work placements and an awards scheme;
- Work with industry and produce marketing campaigns to promote prevention of pollution rather than its remediation;
- Foster public awareness of environmental issues to encourage responsibility for the environment and its challenges; and
- Build on established and create new, international relationships to further global sustainable development.

The Agency has produced a range of educational material and leaflets, some of these are listed in Appendix 4. Please contact: Jo Elsy, Team Leader - Customer Contact Tel: 01543 404914 if you would like any of these leaflets.

4.3.1 Educational initiatives

The Agency undertakes a variety of pollution prevention, waste minimisation and education initiatives with local communities, business, local authorities and others. Specific initiatives include:-

Water pollution prevention

- in excess of 100 pollution prevention site inspections a year in the catchment to business and agriculture.
- Distribution of leaflets to local authorities, schools, libraries etc.

Local authority liaison

- Planning roadshows to improve relationships between local planning authorities and the Agency.
- Promotion of sustainable surface water drainage techniques.

Waste Management

- The draft Producer Responsibilities (Packaging Waste) Regulations place an obligation on certain businesses to recover and recycle specific amounts of packaging waste. The Upper Trent Area office has a nominated "Customer Advisor" who has detailed knowledge of the developing framework and regulations. Area offices are capable of responding to queries from local businesses and provide advice and information.
- We are promoting waste minimisation through Waste Minimisation Clubs, our own activities and by partnership with local groups. In addition there will be promotion of best practice in waste management and special waste regulations.

Water demand management

- Education and information programmes (eg road-shows, high street displays, schools guides, gardening tips, help lines)
- Promotion of water efficient appliances (eg low flush or dual flush WC's, water efficient washing machines and dishwashers, trigger-gun sprinklers, water butts)
- Promotion of low cost retrofit water saving devices (eg Hippo bags, low flow shower heads, sprinkler exchange schemes)
- Promotion of water re-cycling and reuse (eg grey water recycling systems, recirculation systems, water butts)

These, and other areas of activity (water audits, waste minimisation schemes and leakage reduction programmes) are co-ordinated by the Agency's Demand Management Centre at Worthing in conjunction with regional co-ordinators.

4.3.2 Schools Education

The Agency is committed to improving its educational work with schools. The Agency is one of a number of organisations working with schools and there are opportunities for joint approaches. Information to schools will dovetail into the national curriculum.

Attention is being focused at key stages 2 and 3 and there is a commitment to provide information for 'A' level and university students. The Agency is developing its own national education strategy and work in the LEAP area will accord with that framework.

Staffordshire Education Partnership

Staffordshire Partnerships is an organisation supported by Staffordshire County Council, the City of Stoke on Trent Council and the Staffordshire Training and Enterprise Council. It actively promotes education and business working in partnership for mutual benefit.

4.4 Land Use Planning

Land use is the single most important influence on the environment. Human activity can have both positive and negative impacts on the environment. Redevelopment and renewal can do a lot to repair the damage of the past, while controls on new development can protect sensitive habitats and biodiversity and can prevent increased emissions of pollution to air, land and water.

4.4.1 Planning Liaison

The control of land use change is primarily the responsibility of Local Planning Authorities (LPAs) through the implementation of the Town and Country Planning Acts. Local development plans provide a framework for land use change and are key considerations in the determination of planning applications. Government planning guidance supports co-operation between LPAs and the Agency in relation to land use and the environment.

The Agency is a statutory consultee in respect of development plans and certain categories of planning applications. This allows the Agency's views to be considered by the LPA prior to a planning application being decided or policies in a development plan being approved. Planning liaison is the link between the Agency's functions and Local Authority planners. Guidance on the types of planning applications we would wish to see is contained in the Agency's document "Liaison with Local Planning Authorities".

4.4.2 Development Control Guidance

The following is draft guidance to LPAs from the Agency on a number of areas of mutual interest. Town and Country Planning can support sustainable development and work towards meeting the country's commitments to biodiversity and global warming. Some of these policy approaches should be at the regional level, while others should be considered in a more local context.

Transport and Infrastructure

Road traffic accounts for some 25% of the UK's contribution to global warming. Vehicle use also contributes towards acid rain through the production of sulphur dioxide and oxides of nitrogen.

Regional policies should be in place to minimise the need for travel by locating as far as possible, homes, places of work and other facilities in reasonable proximity to each other. Such broad policies offer the basis for more detailed land-use policies. For example, a preference for new employment sites and retail developments to be sited close to good public transport networks and away from locations that cannot readily be served. Such an approach should also influence the Structure Plans and Part I Unitary Development Plans with respect to the distribution of new housing.

Commitments outlined in the Local Agenda 21 action programmes of Local Authorities encourage:-

- Extending the provision for cyclists and for the safe movements of pedestrians;
- Promotion of public transport as an attractive substitution for car use;
- The reduction of energy consumption and pollution by unnecessary journeys to work, shops and leisure facilities.

Energy

The Agency is responsible for the regulation of emissions to the environment and we are in a position to help influence planning policy and its impact on energy use. In addition the new IPPC regime introduced by the Pollution Prevention Act 1999 ensures that energy efficiency needs to be taken into consideration as part of the objectives for industry covered by the Act. Energy conservation is important to combat global warming and the long term sustainable use of non-renewable resources.

Planning Policy Guidance Note 12 (PPG12) states that structure plans should include policies for energy generation, including renewable energy. Structure plans and UDP Part I's should include policies and proposals for providing renewable energy in their area. Plans need to address the potential conflict within development areas for such installations and the protection of landscape and wildlife. They should propose the criteria to be applied to planning applications for renewable energy installations in National Parks and Areas of Outstanding Natural Beauty (AONB).

In addition to providing for renewable energy installations, development plans can affect energy conservation through development patterns. PPG 12 offers guidance to Local Authorities in this respect. The Council for the Protection of Rural England (CPRE) has produced a document, "Energy conscious planning", highlighting the integration of energy issues in land-use planning.

Within Local Plans, energy related policies may be expected to provide a more specific framework for development control decisions which would apply not only to greenfield developments, but also to redevelopment and infilling within existing settlements.

Given this context, it is appropriate for Local Planning Authorities to pursue policies which:-

- Discourage low density development.
- Promote some degree of concentration of principal employment activities and community facilities.
- Ensure that new development is well related to established or convenient public transport routes.
- Encourage energy-sensitive siting, orientation and layout of new development, particularly in order to allow future energy saving technologies to be accommodated.

In addition to planning, the building regulations section of Local Authorities are also influential, for example in terms of energy efficient buildings.

Natural Habitats and Biodiversity

Ecological issues have traditionally been reflected as restraint policies in development plans. As a result of the growing strength of wildlife groups and the more widespread use of Environmental Assessments, a wider range of ecological matters can now be addressed in plans. Policies should be in place to promote ecological diversity.

As advised in PPG 12, although the principal use of a site may be for housing or other development, schemes should be designed to retain natural features on site and where none exist, to create new habitats or features to encourage wildlife. Local Plans offer the opportunity to incorporate policies to replace wildlife resources lost through development using Section 106 Agreements.

Policies should be offered along the lines of:

"All new development should preserve and enhance existing elements of nature conservation importance. New and existing development should offer the opportunity to create new areas of semi-natural habitat by the use of appropriate design and species in landscaping schemes and to incorporate features to attract wildlife".

Land recycled through derelict land reclamation offers the potential to create new areas of value. As indicated, reclaimed open space offers greater potential for both increased habitat diversity, through large scale tree planting, wetland habitat promotion and the promotion of wildlife corridors.

Waste Management

The management of waste impacts on land use. The location of landfill sites and the operation of waste transfer stations affects the proposed use of land and the amenity of surrounding areas.

Planning permission should not be granted for the deposit of biodegradable waste within 250m of any development unless measures can be taken to monitor and control landfill gas. In any event permission should not be given for the deposit of biodegradable waste within 50m of development. Without correct management, the migration of landfill gas can give rise to the risk of explosion in buildings, underground services or voids. It also presents a risk of asphyxiation.

Where a proposed development might be at risk from migrating landfill gas, the Agency can advise on the work required to protect property. Any residential development within 50m of a known gassing landfill should be refused unless the developer can clearly show how it will be protected.

Methane generated in a landfill site must be controlled in order to minimise its impact on the environment. Collecting it and using it as a fuel has two benefits, by avoiding pollution and generating energy. There should be a presumption against the passive venting of landfill gas unless it can be shown that methane oxidation is reducing methane emissions to a low level. Planning applications to utilise landfill gas for the generation of energy should generally be encouraged.

Waste transfer stations can have an adverse impact on the amenity of nearby properties through dust, noise and smell and can cause considerable pollution to rivers and streams from run-off. Planning permission for waste transfer stations accepting over 100 tonnes of biodegradable waste a day should only be permitted if the sites are operated under cover except where waste is deposited into closed containers for prompt disposal elsewhere.

Flood defence and the control of surface water run-off

Importance of floodplain

River channels have a limited capacity and when this is exceeded, flooding of the adjoining land known as the floodplain occurs.

The need to protect floodplain's has not always been recognised and they have sometimes been subjected to inappropriate development. Rivers and their floodplain's are finite resources, which need to be managed in accordance with the principles of sustainable development.

If flood risks to land and property are not to be increased and the ecological value of rivers and floodplains is to be safeguarded, then rivers and their floodplain need to be protected from activities, such as development, which may adversely affect them.

The impact of urban development and the control of surface water runoff

The urban development of a catchment can have the following major effects on the hydrological regime:-

- Increased volumes of storm water runoff.
- Higher peak flow rates and flood water levels.
- Lower base flows in rivers and streams.
- Inundation of available storage in (and conveyance capacity of) river corridors.
- Reduction in soil moisture recharge leading to a reduction of groundwater resources.
- Increase in pollutant loads carried into sewers or surface waters.

Urban runoff should be considered as a resource. The management of urban runoff to mitigate its adverse impact on the water environment is the concept of "source control" which aims to identify local and more sustainable solutions for surface water management, without giving rise to detriment in groundwater quality.

Key Points:-

- Wherever appropriate surface water should be disposed of as near to the point of incidence as possible. Site owners and occupiers will have to assume a greater responsibility for surface water management.
- Clean and contaminated surface water should be kept separate.
- The use of "softer" engineering structures such as swales, detention ponds, infiltration basins and porous surfaces should be encouraged as alternatives to conventional drainage where appropriate and practical. Ideally these techniques should be considered in preference to conventional drainage systems providing there are no adverse impacts on groundwater resources.
- When planning a development, surface water management should be considered as a fundamental part of the design and operation of the project. The retention of water on site for low grade usage such as landscape management and vehicle washing can also reduce the demand on the potable supply system giving further environmental benefits.

- The active promotion of surface water runoff disposal to infiltration basins may have an additional benefit as a means of artificial recharge to aquifers. The potential quality problems for groundwater where very polluted runoff could be involved may limit this option to surface waters draining non-industrial locations, but in any case full assessments will be needed.
- Infiltration drainage should be considered for developments proposed in areas where the existing combined sewer capacity is a limiting factor.
- Source control should apply to roads as well as buildings.

Adoption

If a source control system is to be incorporated into a road drainage system, for example by means of a soakaway system or reed bed, then such a system can become the responsibility of the highway authority. If the system is to be incorporated into an area of public open space, through a Section 106 agreement or a unilateral understanding with the developer, then the Local Authority can adopt it. It is currently the policy of the Statutory Sewerage Undertakers in England and Wales not to adopt infiltration systems. We are working with Local Authorities and sewerage undertakers to change attitudes to make adoption more acceptable.

4.5 Development and infrastructure

New building works, changes in land use, development of communications and the construction of new roads, sewers and other services can have a major impact on an area and uses of the environment. The Agency has a responsibility to protect the environment and to achieve this aim it must work closely with Local Planning Authorities (LPAs).

The Agency is a statutory consultee under planning legislation and advises Local Authorities on development proposals that can have an impact on matters relevant to the Agency.

The Agency operates at all levels of the planning system. At the national level there is direct liaison with the DETR (Department of the Environment, Transport and the Regions) and Local Authority associations, seeking to influence Planning Policy Guidance Notes (PPG), Circulars and new legislation. At the regional level there is liaison with government offices and regional steering groups with the aim of influencing regional planning guidance. At the local level we are consulted on structure and local plans, mineral local plans and waste plans to ensure our interests are protected and that development proposals have positive (sustainable) impacts on the environment.

The Agency also seeks to pursue its aims and policies regarding development through the planning consultation process for individual proposals. Although the final decision on the planning matters rests with the LPA, government guidelines advise on the need to consider the Agency's concerns when determining proposals.

There are four structure plans within the Burton, Nuneaton and Tamworth plan area, which are prepared by the County Councils of Derbyshire, Leicestershire, Staffordshire and Warwickshire together with unitary authorities where appropriate. These plans provide a broad strategic framework for planning and development control. The Derby and Derbyshire Joint Structure Plan has been prepared by Derby City Council and Derbyshire County Council and similarly the Staffordshire and Stoke-on-Trent Structure Plan has been prepared by Staffordshire County Council and Stoke-on-Trent City Council. Birmingham City Council and Walsall Metropolitan Borough Council are Unitary Authorities and both have Unitary Development Plans.

The existing statutory local plans and those currently in preparation are shown in Table 6.

Table 6 - The status of Development Plans within the plan area

LOCAL PLANNING AUTHORITY	DEVELOPMENT PLAN TITLE	STATUS AND CONSULTATION DATE
DERBYSHIRE COUNTY COUNCIL	Derby & Derbyshire Joint Structure Plan	Deposit Draft April 1998
South Derbyshire District Council	South Derbyshire Local Plan	Adopted March 1998
LEICESTERSHIRE COUNTY COUNCIL	Leicestershire, Leicester and Rutland Structure Plan	Consultation Draft September 1998
Hinckley and Bosworth Borough Council	Hinckley and Bosworth Local Plan	Adoption planned for June 1999 if no objections received
North West Leicestershire District Council	North West Leicestershire Local Plan	Deposit Draft February 1995 Inspectors Report November 1998 Modifications on Deposit Spring 1999
Nuneaton and Bedworth Borough Council	Nuneaton and Bedworth Borough Local Plan	Adopted 1993
STAFFORDSHIRE COUNTY COUNCIL	Staffordshire and Stoke-on-Trent Structure Plan Staffordshire and Stoke-on-Trent Minerals Local Plan Staffordshire and Stoke-on-Trent Waste Local Plan	Replacement Staffordshire Structure Plan 1986-2001 operative April 1991. Revised Structure Plan produced jointly by Staffordshire County Council and Stoke-on-Trent City Council: objections to Deposit Draft currently being considered. Post inquiry proposed modifications expected for consultation Summer 1999. Staffordshire Aggregates Local Plan adopted 1996 will be subsumed into Minerals Local Plan when adopted. Deposit draft expected end of 1999.
Cannock Chase District Council	Cannock Chase Local Plan	Adopted 1997
East Staffordshire Borough Council	Borough of East Staffordshire Local Plan	Public Inquiry complete. Proposed Modifications published June 1996
Lichfield District Council	Lichfield District Local Plan	Adopted 1998
Tamworth Borough Council	Tamworth Local Plan	Adopted 1995
WARWICKSHIRE COUNTY COUNCIL	Warwickshire Structure Plan	Replacement Warwickshire Structure Plan 1989-2001 operative September 1991. Revised Structure Plan produced 1996-2001. Objections to draft currently being considered. EIP was held April 1999.
North Warwickshire Borough Council	North Warwickshire Local Plan	Adopted May 1995
Rugby Borough Council	Rugby Borough Local Plan	Adopted June 1997

LOCAL PLANNING AUTHORITY	DEVELOPMENT PLAN TITLE	STATUS AND CONSULTATION DATE
BIRMINGHAM CITY COUNCIL	The Birmingham Plan	Adopted 1993. Review currently in progress with Consultation Plan due Autumn 1999.
WALSALL METROPOLITAN BOROUGH COUNCIL	Walsall Unitary Development Plan	Adopted 1995. Review currently in progress with Consultation Plan due Autumn 1999.

Notes:-

The stages in the preparation of local plans prior to their adoption is as follows: consultees and member of the public may initially comment on a consultation draft of the local plan. A deposit draft is then available for a statutory six week period, after which all representations are considered. A public inquiry is then held at which objections to the plan are considered at which objectors can be represented in person and evidence cross examined. An inspector considers all objections raised and produces a report on recommended changes to the plan. The planning authority may then accept the recommendations and adopt the plan or propose modifications, in which case there is a further period of public consultation. This process may be repeated with further modifications and a second public inquiry in exceptional circumstances. Once it is satisfied that all objections have been accommodated, as far as possible, the planning authority will give notice of its intention to adopt the plan.

Abstraction	The removal of water from any source, either permanently or temporarily.
Abstraction Licence	An authorisation granted by the Agency to allow the removal of water from a source of supply. Statutory; section 38 Water Resources Act 1991.
Agenda 21	A comprehensive programme of worldwide action to achieve a more sustainable pattern of development for the next century. UK Government adopted the declaration at the UN Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro in 1992.
Algae	Microscopic (sometimes larger) plants, which may be floating or attached. Algae occur in still and flowing water.
Algal blooms	Rapid growth of phytoplankton in marine and freshwater 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.
Ameliorate	Cause something to become better.
Ammonia	A chemical compound found in water often as a result of pollution by sewage and farm effluents. It is widely used to determine water quality. Ammonia can be toxic to fish.
AMP3	Asset Management Plan 3 is the water company's means of prioritising expenditure on improvements.
AOD	Above Ordnance Datum. Land levels are measured relative to the average sea level at Newlyn in Cornwall. This average level is referred to as "Ordnance Datum". Contours on Ordnance Survey maps of the UK show heights in metres above Ordnance Datum.
AONB	Area of Outstanding Natural Beauty.
Aquatic	Pertaining to the water environment.
Aquifer	A water bearing-stratum situated below ground level. The water contained in aquifers is known as groundwater.
Asset Management Plan	Water Companies Strategic Business Plans - initiated (eg AMP3) by OFWAT as part of the periodic review of water company charges. These are drawn up through consultations with the Agency and other bodies to cover a five year period.
Attenuation	Dilute or slow the spread of contamination or the speed of flow.
Augmentation	The addition of water to a watercourse under artificial control. Usually to "top up" low flows in summer by either groundwater pumping or via reservoir release.
Base Flow	The flow of a river derived from groundwater sources.
Benthic	Living on the bed of a river.
Benzene	Air pollutant from fossil fuels released by vehicular traffic and by industry, carcinogenic. A target pollutant in the UK National Air Quality Strategy.

BOD	Biochemical Oxygen Demand. A measure of the amount of oxygen consumed in water (over 5 days), usually by organic pollution. Oxygen is vital for life so the measurement of the BOD tests whether pollution could affect aquatic animals.
BOD (ATU)	Biochemical Oxygen Demand measured in the presence of allylthiourea. The allylthiourea suppresses the oxidation of ammonia so the oxygen demand reflects the level of carbon based oxidation.
Biodiversity	Diversity of animal and plant life.
Biomass	Total quantity or weight of organisms in a given area or volume.
Borehole	A well sunk into a water bearing rock from which water will be pumped.
Brownfield	A designation used by planning authorities to describe land that has previously been used for development. It does not necessarily imply that the land is contaminated.
Buffer Zone	Strip of land 10-100m wide, alongside rivers which is removed from agricultural use, managed to provide appropriate habitat types and to reduce levels of nitrates and pesticides in water.
1,3 Butadiene	A gas derived mainly from the combustion of petrol and other materials. A carcinogen and a target pollutant in the UK National Air Quality Strategy.
Cadmium	A very toxic heavy metal with a wide variety of uses.
Carbon dioxide (CO₂)	Gas present in the atmosphere and formed during respiration, the decomposition and combustion of organic compounds (eg fossil fuels, wood etc). A greenhouse gas.
Carbon monoxide (CO)	A gas formed by the incomplete combustion of carbon fuels. At very high exposures prolonged exposure to CO can be life threatening. A target pollutant in the UK National Air Quality Strategy.
Catchment	The total area from which a single river collects surface run-off.
CFCs	Chloroflourocarbons. Volatile but inert (without active chemical or other properties) compounds of carbon and (mainly) chlorine and fluorine. Important greenhouse gases and ozone layer depleters.
Coarse Fish	Freshwater fish other than salmon and trout.
Confluence	The point at which two rivers meet.
Controlled Waters	All rivers, canals, lakes, groundwaters, estuaries and coastal waters to 3 nautical miles from the shore, including bed and channel which may for the time being be dry.
CSO	Combined Sewer Overflow.
Culvert	Channel carrying water across or under a road, canal etc.
Cyprinid Fish	Coarse fish belonging to the carp family, like roach, dace and bream.
Dangerous Substances	Substances defined by the European Commission as in need of special control because of their toxicity, bio-accumulation and persistence. The substances are classified as List I or List II according to the Dangerous Substances Directive.

Demand Management	The management of the total quantity of water abstracted from a source of supply using measures to control waste and consumption.
Derogate	To depreciate or diminish - used in abstraction licensing where a proposed new licence would reduce resources to an existing authorised abstraction.
DETR	Department of the Environment, Transport and the Regions (Formerly DoE and DoT).
Diatom	Microscopic, unicellular algae characterised by an often ornate siliceous covering.
Diffuse Pollution	Pollution from widespread activities with no one discrete source.
Discharge Consent	A licence granted by the Agency to discharge effluent of specified quality and volume. Statutory; Schedule 10 Water Resources Act 1991.
DO	Dissolved Oxygen. The amount of oxygen dissolved in water. Oxygen is vital for life so this measurement is an important test of the health of a river.
DoE	Department of the Environment (Predecessor to DETR)
DoT	Department of Transport (Predecessor to DETR)
Dry Weather Flow	For sewage works, this is calculated by adding estimates of the domestic sewage discharge (which is the population multiplied by the per capita consumption) plus any industrial discharges plus infiltration into the sewer. For rivers, this is calculated as the average of flows during the driest seven consecutive days in each year for the period of record.
EC/EU Directive	A type of legislation issued by the European Union which is binding on Member States in terms of the results to be achieved but which leaves to Member States the choice of methods.
Ecosystem	A functioning, interacting system composed of one or more living organisms and their effective environment, in a biological, chemical and physical sense.
Effluent	Liquid waste from industrial, agricultural or sewage plants.
EH	English Heritage
EN	English Nature
EQS	Environmental Quality Standard. That concentration of a substance which must not be exceeded if a specific use of the aquatic environment is to be maintained.
ESA	Environmentally Sensitive Area . An area defined by MAFF for which grant aid is available for appropriate agricultural and water/land management.
Eutrophication	The biological effects of an increase in plant nutrients - nitrates and phosphates - on aquatic ecosystems.
Evapotranspiration	Water lost by evaporation and water taken up and lost by plants.
Fauna	Animal life
Floodplain	Land adjacent to a watercourse that is subject to flooding.

Flora	Plant life.
Fluvial	Land pertaining to the river itself.
Flytipping	The unregulated and, hence illegal, dumping of waste.
FRCA	Farming and Rural Conservation Agency
Gauging Station	A site where the flow of a river is measured.
Greenbelt	A designation used by planning authorities on land adjacent to towns or cities, defined for the purpose of restricting the outward expansion of the urban area and to protect the countryside.
Greenhouse Gas	Natural and man-made gases which influence the greenhouse effect. Including carbon-dioxide, methane, ozone and chlorofluorocarbons (CFCs).
GQA	General Quality Assessment. A national water quality assessment scheme.
Groundwater	Water which saturates a porous soil or rock substratum (or aquifer). Water held in storage below ground level.
Groundwater Units	Administrative sub-divisions of aquifers, defined on geological and hydrological criteria, which form the basis for groundwater resource management and licensing policy decisions.
Habitat	The locality or environment in which a plant or animal species lives.
HA	Highways Agency
Hard Engineering	River bank re-profiling for flood defence purposes using concrete, stone, metal and other hard materials.
HE	House Equivalent. Allocated a value in terms of numbers of houses.
HSE	Health and Safety Executive
HMIP	Formerly Her Majesty's Inspectorate of Pollution (now part of the Environment Agency).
Hydraulic Continuity	The degree of interconnection between two potential sources of water eg. a river and an aquifer or two clearly defined aquifers.
Hydrology	The study of water on or below the earth's surface.
Hydrometry	The measurement of water.
Hydrogeology	Branch of geology concerned with water within the earth's crust.
Insecticide	Substances used to destroy or repel insects.
IDB	Internal Drainage Board. Autonomous public bodies under the control of board members (including those elected by agricultural ratepayers and those nominated by local authorities), with responsibilities and powers for flood defence on ordinary watercourses (non-Main Rivers) under the Land Drainage Acts)
Invertebrate fauna	Animals which lack a back bone - used for biological classification. Especially macro-invertebrates (animals of sufficient size to be retained in a net with a specified mesh size).

IPC	Integrated Pollution Control. An approach to pollution control in the UK which recognises the need to look at the environment as a whole, so that solutions to particular pollution problems take account of potential effects upon all environmental media. Relates to industrial and commercial processes with a significant pollution potential. Controlled by the Agency.
Landfill	Site used for waste disposal into/onto land.
Landfill Tax	A levy per tonne or cubic metre of waste sent to landfill, used to encourage the use of recycling and waste minimisation.
Leachate	Liquid formed when water reacts with, or leaches from, waste material.
Leachability Triggers	Standards set by the Agency to ensure that land from a contaminated site is remediated to an appropriate standard.
Leaching	Removal of soluble substances by action of water percolating through soil, waste or rock.
Lead	The world's most widely used non-ferrous metal. Used also as a petrol additive but its use is now in decline. It has adverse effects on human health. A target pollutant in the UK National Air Quality Strategy.
LPA	Local Planning Authority.
LWCA	Local Waste Collection Authority
MAFF	Ministry of Agriculture, Fisheries and Food.
Main River	The watercourse shown on the statutory 'Main River maps' held by Environment Agency and MAFF. The Agency has permissive powers to carry out works of maintenance and improvement on these rivers.
Natural Succession	The evolution of an environment from water to dry land that can naturally take place.
Nitrate Sensitive Areas (NSA)	An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50mg/l laid down in the 1980 EC Drinking Water Directive, and where voluntary, compensated agricultural measures were introduced in 1990 as a means of reducing those levels.
Nitrate Vulnerable Zones (NVZ)	An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50 mg/l laid down in the 1980 EC Nitrate Directive, where farmers are required to limit the application of nitrates to levels laid down in the Code of Good Agricultural Practice (MAFF).
Nitrogen dioxide (NO₂) Nitric oxide (NO) Oxides of nitrogen (NO_x)	NO ₂ and NO are both oxides of nitrogen (NO _x) produced by traffic and industry. NO ₂ can have an adverse effect on human health, increasing the symptoms associated with respiratory illness. NO ₂ is a target pollutant in the UK National Air Quality Strategy.
NNR	National Nature Reserve
Nutrient	A chemical essential for life.
NRA	National Rivers Authority (now part of the Environment Agency).
Objective 2	European funding with the aim to facilitate the redevelopment of urban areas.

OFWAT	Office of Water Industry's Regulator of Water Service Companies.
Ordinary watercourse	A watercourse that does not form part of a Main River.
Ozone	Caused by a chemical reaction in sunlight, at lower levels in the atmosphere by oxides of nitrogen and volatile organic compounds reacting to form ozone. The reactions can take days and maximum concentrations occur downwind of urban areas. Affects the respiratory system. A target pollutant in the UK National Air Quality Strategy.
Particulates and PM₁₀	Small particles of matter released from a number of sources. The Clean Air Acts led to a tenfold decrease in black smoke but new research has shown very small particles can affect the respiratory and cardiovascular systems. PM ₁₀ - particulates below 10µm (a target pollutant in the UK National Air Quality Strategy).
Percolation	The movement of water through soil pores and rock crevices.
Perennial Flow	River flow present through the entire year.
Permeability	The ease with which liquids (or gases) can pass through rocks or a layer of soil.
Permissive powers	Powers which confer on the Agency the right to do things but not the duty to do them.
Pesticides	Substances used to kill pests, weeds, insects, fungi, rodents etc which can have significant harmful environmental effects.
Porosity	The volume of water which can be held within a rock or soil, expressed as the ratio of the volume of the voids to the total volume of the material.
Potable Water	Water of a quality suitable for drinking.
RAMSAR	Wetland site of International Importance that is designated under the Ramsar* convention (*a town in Iran where the international convention originally agreed in 1975 to stem the progressive encroachment on, and loss of, wetland).
Raw Water	Water in its natural state; before treatment.
Raw Water Transfer	The transfer of water from one resource to another in order to meet or anticipate demand. It is usually part of a scheme such as a reservoir or pipeline.
RE	River Ecosystem. Classification used to measure water quality.
Reach	A length of river.
Recharge	Water which percolates downward from the surface into groundwater.
Red Data Book Species	The most threatened species in Great Britain.
Renewable Energy	Energy produced from resources which are unlimited or can be rapidly replenished eg. Wind, water, sunlight, wave power or waste.
Residual Flow	The flow remaining in a watercourse after abstractions have taken place.
Return Period	The return period of a flood. Flood events are described in terms of the frequency at which, on average, a certain severity of flood is exceeded. This is usually expressed as a return period in years, e.g 1 in 100 years.

Revetment	A retaining wall.
Riparian	Of, or on, land adjacent to the river.
River Corridor	A stretch of river, its banks, and a varying amount of adjacent land that is affected by the presence of the river.
RQO	River Quality Objective. The level of water quality that a river should achieve in order to be suitable for its agreed uses.
Salmonid Fish	Game fish of the Salmon family, for example, trout and salmon.
SAC	Special Area of Conservation. This designation will protect important species and habitats, as defined under the EC Directive on Conservation of Habitats and Species.
SAM	Scheduled Ancient Monument. The key sites nationally for archaeology, designated by the Secretary of State for national Heritage, through English Heritage and CADW. Statutory; designated under the Ancient Monuments and Archaeological Areas Act 1979.
Septic Tank	A tank used for the treatment of sewage from properties without mains drainage. The sewage is settled and some bacterial treatment occurs. Discharge of effluent is usually to a soakaway system.
Sewage	Liquid waste from homes, businesses etc which is normally collected and conveyed in sewers for treatment and/or discharge to the environment.
Sewerage	Means of conveying foul or surface water.
SINC	Site of Importance for Nature Conservation. These are non statutory nature conservation sites of county or regional importance. Designated by County Wildlife Trusts and in some cases EN and Local Authorities.
Siltation	At low velocities water will deposit the material being carried in suspension. The slower the velocity the finer the material deposited. A deposit of clays and silt is very difficult to remove naturally as it requires turbulent and high velocities.
Sludge	The accumulation of solids from treatment processes. Sludge can be incinerated or spread on farm land.
Slurry	Animal waste in liquid form.
Soakaway	System for allowing water or effluent to soak into ground, commonly used in conjunction with septic tanks.
Soft Engineering (Rivers)	River bank works using earth, grass, tree planting, reeds and other natural (soft) materials.
SoS	Standards of Service.
SPA	Special Protection Areas. Areas of importance for birds.
Spray Irrigation	The watering of crops by spraying. Can have a high impact on water resources.
SSSI	Site of Special Scientific Interest. The best examples of the national heritage of wildlife habitats, geological features and landforms, designated by English nature and the Countryside Council for Wales. Statutory; notified under the Wildlife and Countryside Act 1981.

SSW	South Staffordshire Water
STP	Sewage Treatment Plant (operated by non utility companies).
Strata	Layers of rock, including unconsolidated materials such as sands and gravels.
STW	Sewage Treatment Works (operated by utility companies).
STW Ltd	Severn Trent Water Ltd.
Sulphur dioxide (SO₂)	A gas which dissolves in water to give an acidic solution. It is an irritant when inhaled and may cause breathing difficulties. Emissions of SO ₂ can lead to acid rain, affecting ecosystems and water quality. A target pollutant in the UK National Air Quality Strategy.
Surface Water	Water which flows or is stored on the ground surface.
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
SWO	Storm Water Overflow.
SWQO	Statutory Water Quality Objectives. Water Quality Objectives set by the Secretary of State for the Environment, Transport and the Regions, in relation to controlled waters.
Telemetry	River levels, rainfall, temperatures and wind run are recorded on data loggers connected to the telephone network. Information from the recording sites can be automatically accessed from a central point.
Trade Effluent	Any effluent, except domestic sewage produced in the course of trade or industry, including agriculture, horticulture and research. Surface water run-off which is significantly contaminated by site activities constitutes trade effluent.
Transfer Station	Waste disposal facility where waste is collected prior to transport to final disposal point.
Underground Strata	A term used to signify geology under the surface soil layer. If groundwater exists, or if water is being discharged to the ground, the geology underneath the soil layer is known in the various Acts of Parliament as underground strata.
UWWTD	Urban Wastewater Treatment Directive.
Water Table	The natural level of underground water.
Wetland	An area of low lying land where the water table is at or near the surface for most of the time, leading to characteristic habitats.
Winter Storage Reservoir	Reservoirs built by farmers to store water during the winter months when it is "plentiful" for re-use during the summer.
1:10 Year Drought/Flood	A drought/flood event with a statistical probability of occurring once in a ten year period (other periods may be specified in a similar way).

UNITS	ppb		parts per billion
	$\mu\text{g}/\text{m}^3$		micro (10^{-6}) grammes per cubic metre
Length	10mm	=	1cm (equivalent to 0.394 inches)
	100cm	=	1m (equivalent to 39.37 inches)
	1,000m	=	1km (equivalent to 0.621 miles)
Area	$10,000\text{m}^2$	=	1ha (equivalent to 2.47 acres)
Flow	1,000l/s	=	$1\text{m}^3/\text{s}$
	$1,000\text{m}^3/\text{d}$	=	1MI/d

Appendix 2 Organisations consulted prior to the publication of this report

In March 1999, all unitary, county and district councils in the Burton, Nuneaton and Tamworth plan area were contacted together with other organisations with a known interest in the local environment. Some organisations, those with a number of departments or offices were contacted separately. This pre-consultation exercise was designed to focus on groups/organisations that could provide information about the area and who may be involved in some of the environmental problems the area faces. Some additional issues and options did arise from the consultation and where appropriate have been incorporated into this report.

List of Organisations Contacted:

Alrewas AC	North Warwickshire Borough Council
Alvis AC	North West Leicestershire District Council
ARC Central	Nuneaton and Bedworth Borough Council
Association of Parish and Town Councils	OFWAT
Bardon Propak	Polesworth AC
Bass Burton AC	Powergen plc
Bass plc	Prince Albert AS
Birmingham AA	Provincial AC
Birmingham City Council	Railtrack plc
British Canoe Union	Ramblers Association
British Trust for Conservation Volunteers	Redland Aggregates Ltd
British Waterways	RSPB
Bulkingran Kingfisher AC	Rugby Borough Council
Burton Mutual AA	Rural Community of Staffordshire
Burton upon Trent and District Chamber of Commerce and Industry	Salmon and Trout Association
Cannock Chase District Council	Severn Trent Water Ltd
Carlsberg Tetley Brewing Ltd	South Derbyshire District Council
Catton Fisheries	South Staffordshire Water plc
CBI East Midlands	Sports Council
CBI West Midlands	Staffordshire County Council
Coal Authority	Staffordshire Parish Councils Association
Council for the Protection of Rural England	Staffordshire Wildlife Trust Ltd
Country Landowners Association	Sutton Coldfield AS
Countryside Commission	Swadlincote AA
Coventry and District AA	Swadlincote and District AA
Department of Environment, Transport & the Regions	Tamworth Borough Council
Derbyshire County Council	Tamworth Chamber of Commerce and Industry
Derbyshire Rural Community Council	Tidy Britain Group
Derbyshire Wildlife Trust	Trent and District Anglers Consultative Association
East Midlands Development Agency	Walsall Metropolitan Borough Council
East Staffordshire Borough Council	Warrington AA
English Heritage	Warwickshire County Council
English Nature	Warwickshire Rural Community Council
English Partnerships- East and West Midlands	Warwickshire Wildlife Trust
Farming & Rural Conservation Agency	West Midlands Bird Club
Farming & Wildlife Advisory Group	West Midlands Development Agency
Federation of Small Businesses	
Forestry Authority	
Friends of the Earth	
Government Offices for East Midlands	
Government Office for West Midlands	
Highways Agency	
Hinckley and Bosworth Borough Council	
Horse and Jockey AC	
Ibstock and District AA	
Inland Waterways Association	
Leicestershire and Rutland Trust for Nature Conservation Ltd	
Leicestershire County Council	
Lichfield District Council	

Appendix 2 Organisations consulted prior to the publication of this report

Responses received from:

Birmingham City Council
Countryside Commission (Agency)
Country Landowners Association
Derbyshire Wildlife Trust
English Nature
Farming and Rural Conservation Agency
Forestry Authority
Friends of the Earth Birmingham
Highways Agency
Inland Waterways Association
National Farmers Union
National Forest
Nuneaton and Bedworth Borough Council
Royal Society for the Protection of Birds
Severn Trent Water and the Wildlife Trusts Otters
and Rivers Project
South Derbyshire District Council
Staffordshire Wildlife Trust
Tamworth Borough Council
Tidy Britain Group
Warwickshire Wildlife Trust
West Midlands Bird Club

The table below illustrates the continuity between issues in the Burton, Nuneaton and Tamworth LEAP and that part of the Tame Catchment Management Plan (CMP) falling within the LEAP area. Progress on the CMP issues and actions were reported in the First Annual Review of the CMP, covering the period September 1996 – September 1997. Some issues require further action and have therefore been carried over from the CMP into the LEAP, and some have been completed or are now considered to have become part of the day to day work of the Agency. New issues contained in the LEAP mainly relate to the Agency's new duties.

Table 7 Comparison of Issues in the Tame CMP and Burton, Nuneaton and Tamworth LEAP

CMP Issues	LEAP Issues
1 Urban run-off and the de-oxygenation of surface water	Actions completed or not applicable in LEAP area
2 The future operation of Lea Marston purification lakes	This issue is addressed in the West Midlands Tame LEAP. Downstream effects are however considered as part of issue no 10
3 The sustainability of the fish population in the River Tame	Restocking has taken place on the River Anker and the Black Brook/Bourne Brook. Fish populations are considered in issue no 5
4 River and Canal Lengths that fail their River Quality Objectives	Actions completed, not applicable in LEAP area or addressed in issue no 10 (Sketchley Brook)
5 River stretches that can be upgraded to protect water quality	Upgrades for River Sence completed. Others not applicable in LEAP area. Further upgrades under review.
6 Investment by STW Ltd to improve water quality	Actions completed or not applicable in LEAP area. AMP 3 is addressed in issue no 10
7 Poor water quality in canals	Actions completed or not applicable in LEAP area
8 Litter, unauthorised tipping and aesthetic pollution of rivers and canals	Problem taken up in issue no 17
9 Contaminated run-off from spoil heaps at abandoned coal mines	Problems at Baddesley Ensor and Pooley Hall have now been resolved. Birch Coppice is considered in issue no 6
10 The effect of contaminated land on water quality	Not applicable in LEAP area
11 The impact of rising groundwater beneath Birmingham	Not applicable in LEAP area
12 Over abstraction of groundwater from Lichfield Aquifer	Groundwater model completed and alternative supplies secured
13 Rising nitrate levels in the Lichfield Aquifer	Lichfield NVZ reviewed. Existing practices continue as part of EA day to day activities
14 The impact of canal restoration schemes on water resources and conservation	Addressed in issue no 11
15 Review of flood defences on the River Tame in Birmingham and the Black Country	Not applicable in LEAP area
16 Review of flood defences on the River Tame downstream of Water Orton	Work on model delayed. Taken up in issue no 13
17 The provision of a flood warning system in the West Midlands	Completed as part of national programme
18 Flooding at Brookvale Road, Witton	Not applicable in LEAP area
19 Lack of public access to rivers	Addressed in issue no 7
20 Development of river corridors in urban areas for wildlife and amenity	Work postponed due to lack of funds although not a key issue in much of LEAP area

CMP Issues	LEAP Issues
21 Land use in the middle and lower Tame Valley	Little progress, however Staffordshire County Council / Lichfield District Council initiative (with EA support) to develop guidance for redevelopment of sand and gravel sites in the Tame and Trent Valleys. Taken up in issue no 7
22 Provision of water based recreation sites	Addressed in issue no 7
23 The production of water level management plans for SSSIs	Actions undertaken and continued as issue no 15
24 The adverse effect of Alvecote Pools on downstream water quality	No actions required
25 Protection of the water environment in Sutton Park	Not applicable in LEAP area
26 The future management of Park Hall Farm	Not applicable in LEAP area
27 Control of Invasive Plants in Catchment	No progress. Taken up in issue no 4
28 Weed growth in the river Anker	Tree planting undertaken on south side of river from Atherstone to Alvecote Pools – good progress. Taken up in issue no 5
29 Spread of zander	Study undertaken. Little impact on biomass of roach. Reduction in numbers of gudgeon. Taken up in issue no 5

Listed below is a selection of leaflets available from the Upper Trent office of the Environment Agency. It is intended as a guide to the type of information available rather than as a complete list, as new leaflets are being produced. It does not include policy documents or technical reports.

A Better Environment for England and Wales
A Brief Summary of the Agency's 1998-99 Corporate Plan
Catch and Release – A Guide to Careful Salmon Handling
Charging for Information
Conservation Work in the Midlands Region
Our Complaint and Commendation Procedure
Defying the Disaster
Don't Ignore it, Report it
Enjoy your Garden
Environment Digest
Environmental Policy for the Agency's Own Activities
An Environmental Strategy for the Millennium and Beyond
Fees & Charges – Waste Management Licensing
Flood Defence Fact Sheet
Flood Warning Information
Green Shoots – Our vision for environmental education
Guidance for the Control of Invasive Plants
A Guide to Information Available to the Public
A Guide to Home Composting
Home Pollution and How to avoid it
Hormone Disruption in Wildlife
Identifying Freshwater Invertebrate Life
A Guide for Potential Abstractors
Integrated Pollution Control and You – Fact Sheet
Is Muck Brass?
Midlands Region – Upper Trent Area Fact Sheet and Map
Mobile Sheep dipping
A New Waste Management Licensing System – What it means, How it affects you
Oil Care – Follow the Oil Care Code
Our Midlands Environment
Partnership in Environment Protection
Recreation Sites
Riverbank Erosion
Rod Fishing Byelaws
Safeguard the Environment – A Guide for Developers
Severn Bore & Trent Aegir – 1999 Timetable
Silage Pollution and how to avoid it
Spray Irrigation
Waste – Duty of Care
Waste Regulation and You – Fact Sheet
Water Alert
Water Quality – Fact Sheet
Water Resources – Fact Sheet
What a Waste
What did you throw out this week?

ISSUE 7 Lea Marston Purification Lakes



OBJECTIVE:

- To review the future operation of Lea Marston Purification Lakes



Aerial view of the purification lakes at Lea Marston

The construction of Lea Marston purification lakes has led to improved downstream water quality and reduced the impact of wet weather induced pollution incidents which previously had adverse effects as far downstream as the River Trent.

The Agency owns the lakes and they play an important part in contributing to the UK's commitment to reduce toxic metal inputs to the

North Sea. The existence of the lakes has led to the achievement of a viable fish population in the River Tame and River Trent downstream. It is this population that the Agency seeks to protect, as any fishery upstream of the lakes is adventitious and vulnerable to intermittent pollution.

The Agency has a contingency plan for responding to incidents of oxygen depletion in the River Tame at Lea Marston and this is under continual review.

The lakes form part of a chain of wetlands that extend along the Middle Tame Valley, a chain that is of national importance for wintering wildfowl.

A management plan for conservation of the Lea Marston purification lakes will be developed by the Agency, to complement North Warwickshire Borough Council and Staffordshire County Council's Middle Tame Management Strategy.

ACTIONS	RESPONSIBILITY		Cost (£K)	99/00	00/01	01/02	02/03	03/04	Future	Agency Officer
	LEAD	OTHER								
7.1 Continue to review current operations and practice at Lea Marston with a view to achieving a sustainable operation	EA		R	●	●	●	●			D Watson
7.2 Continue to examine upstream water quality and seek to eliminate pollution sources across the catchment	EA	STW Ltd, LAs	R	●	●	●				M Haslam
7.3 Remediation of low dissolved oxygen events (see Issue 4)	EA		100	100	●	●	●	●		D Freakley D Watson
7.4 Prepare a Conservation and Recreation Management Plan for the Lea Marston Lakes site and seek partnership opportunities for the development and management of non-operational areas	EA	WCC	U	●						A Crawford

Cross reference to other issues

Issue 1 Biodiversity

Issue 4 Urban run-off and deoxygenation of the River Tame

Issue 12 Contaminated land

ISSUE 11 The Effect of the West Midlands – Tame Catchment on Downstream Water Quality



OBJECTIVE:

- To improve river water quality from the catchment so that it does not compromise downstream quality requirements

There are uses of the water environment outside the West Midlands — Tame catchment which additionally demand tight control of potentially polluting activities within the catchment. Such strategic downstream uses include the presence of a good coarse fishery in the River Trent, the abstraction for public water supply from the Trent at Shardlow, the planned transfer of water from the Trent at Torksey to the Anglian region via the Fossdyke Canal and even much further downstream at the Humber Estuary Special Protection Area (SPA) for birds which is proposed as a Special Area of Conservation.

Occurrences within the West Midlands — Tame catchment which might have a significant impact on downstream water quality include:

- The quality of motorway (M6) run-off from its elevated sections during winter de-icing with urea
- The disposal of "exotic" organic materials by waste disposal companies and other industries which are not removed by their own treatment plants or the subsequent sewage treatment process
- Urban runoff, particularly resulting from summer storms after a long dry period
- Discharges from contaminated land

ACTIONS	RESPONSIBILITY		Cost (£K)	99/00	00/01	01/02	02/03	03/04	Future	Agency Officer
	LEAD	OTHER								
11.1 Formulate and carry out investigative work resulting from the organics survey report.	EA		U	●						M Haslam S Baker
11.2 Review consents to ensure compliance with EC Directives: – Urban Waste Water Treatment – Dangerous Substances – Habitats – Groundwater – Fisheries – Surface Water Abstraction	EA	STW Ltd, Discharge Consent holders	U	●	●	●	●	●	2005	R Matthews
				●	●	●	●	●	2005	
				●	●	●	●	●	2005	
				●	●	●	●	●	2005	
				●	●	●	●	●	2005	
				●	●	●	●	●	2005	
11.3 Investigate and seek to control the impact of diffuse run-off into the catchment following the Tame initial UPM study. Consider: – Control of urea from motorways – Urban run-off – Contaminated land drainage – Waste management companies	EA	HA, STW Ltd, LAs, Industry	U	●	●	●	●	●		M Haslam S Baker
11.4 Carry out catchment surveys to detect sources in 11.3	EA		U	●	●	●	●			M Haslam S Baker
11.5 Undertake a detailed Urban Pollution Management Study of the catchment	STW Ltd	EA, Consultants	U	Timetable to be determined in 1999						M Haslam

Cross reference to other issues

- Issue 1 Biodiversity
Issue 4 Urban run-off and deoxygenation of the River Tame
Issue 6 Investment by Severn Trent Water Limited to improve water quality

- Issue 10 The current quality of rivers and canals
Issue 12 Contaminated land

MANAGEMENT AND CONTACTS:

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

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

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ANGLIAN

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Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
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Fax: 0121 711 5824

NORTH EAST

Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

NORTH WEST

Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

SOUTH WEST

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

THAMES

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

WALES

Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0LT
Tel: 01222 770 088
Fax: 01222 798 555



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**