

catchment management plan



TAME action plan September 1996



ENVIRONMENT
AGENCY

The Environment Agency's Vision for the Tame Catchment

The River Tame is the major tributary of the River Trent and with the River Anker, drains an area of 1,470 sq km (568 sq miles). The catchment contains a population of 1.7 million people and includes most of Birmingham and the Black Country and the towns of Tamworth, Hinckley and Nuneaton. The West Midlands conurbation dominates the upper reaches of the river while the lower reaches are more rural in character. The river system is overlain by an extensive canal network which makes a significant contribution to the water environment. At Lea Marston the River Tame flows through purification lakes below which quality significantly improves.

The Environment Agency's vision for the future of the Tame catchment is:-

"A diverse and sustainable water environment which is valued by local communities and one that will contribute to the social and economic well-being of the Midlands".

To achieve this vision, the key objectives of the plan are to:-

- Minimise the impact of urban run-off and its effect on rivers, streams and canals, including their fish populations.
- Continue the improvement in water quality.
- Ensure the proper redevelopment of contaminated land.
- Seek to protect and improve the environmental quality of canals and support where appropriate the restoration of the network.
- Improve stream and river corridors for people and wildlife.

- Protect and enhance existing wildlife habitats and the biodiversity of the catchment.
- Support measures to increase water based recreation.
- Promote improvement to the water environment through public involvement and education.
- Resolve the problem of over abstraction in the Lichfield aquifer and work with others to reduce nitrate levels in groundwater.
- Maintain existing flood defences and enhance where necessary to meet current standards.

We cannot achieve these objectives on our own and we depend on the commitment and enthusiasm of others. Some objectives are common goals, whilst others may require a degree of compromise between differing interests. To achieve a shared vision the Agency needs to work in partnership with local authorities, business groups, other agencies, environment groups, individuals and all those who are interested in improving this large and important catchment.



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vision

Map of the Catchment

Key Details

General

Catchment plan area	1,090	sq km
Population 1991	1.7	million
Population 2001 (projected)	1.7	million

Topography

Highest point above sea level	291m	Beacon Hill (Lickey Hills)
Lowest point above sea level	50m	Chetwynd Bridge

Conservation

Total number of Sites of Special Scientific Interest (SSSIs)	28
SSSIs with wetland interest	16
National Nature Reserves	1
Sites of Importance to Nature Conservation (SINCs)	344
SINCs with wetland interest	128
Local Nature Reserves	9

Water Resources

Long term (1961-1990) average annual rainfall	680	mm
Total licensed abstraction	136	million litres per day (ML/d)
Mean flow of the River Tame at Hopwas Bridge	2,007	ML/d

Water Quality in Rivers and Canals by Length

CHEMISTRY COMPONENT				
Grade (GQA)	River		Canal	
	Km	%	Km	%
A) good	0	0	0	0
B)	22	7	0	0
C) fair	94	31	18	9
D)	40	13	60	30
E poor	126	41	108	54
F bad	26	8	14	7

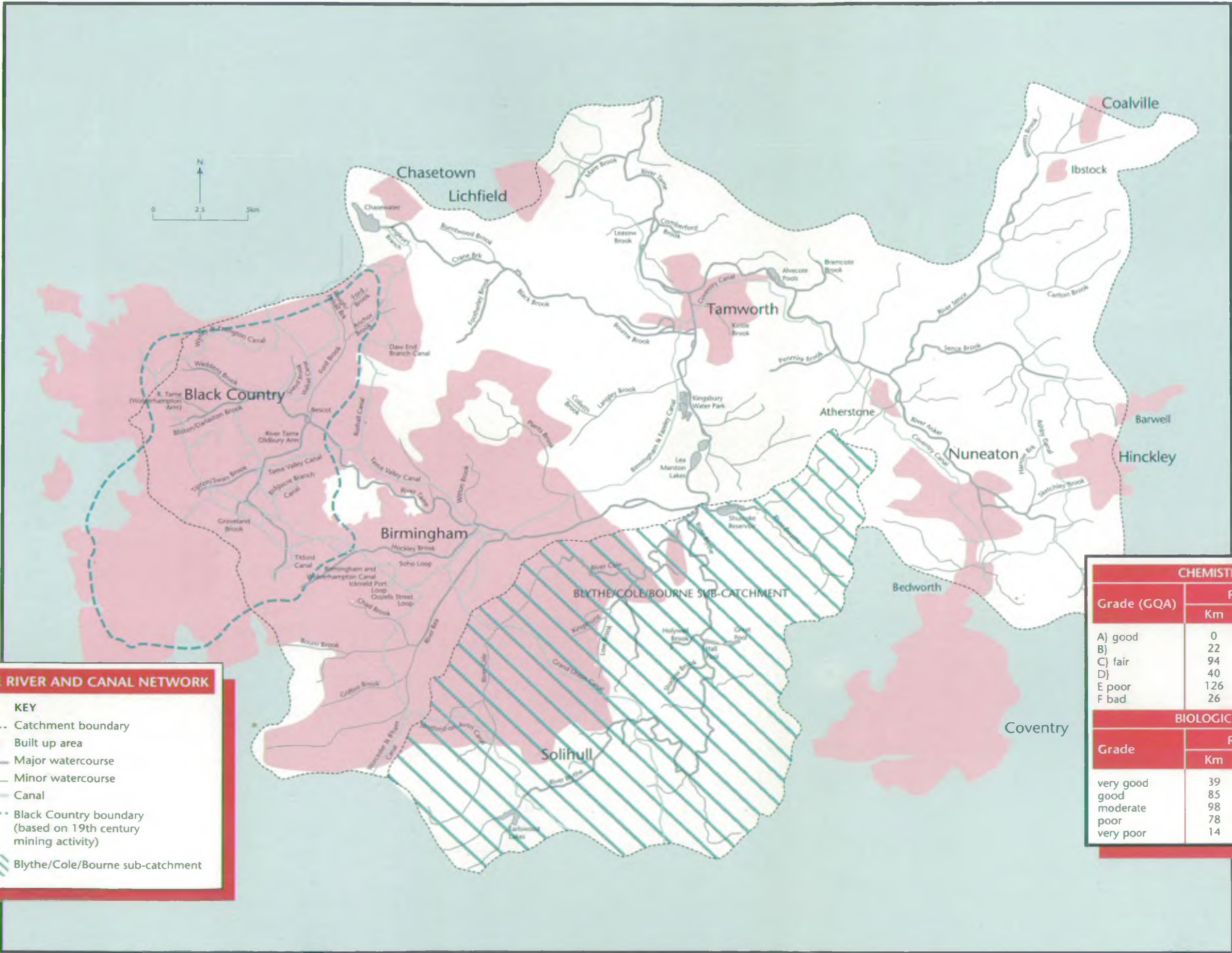
BIOLOGICAL COMPONENT				
Grade	River		Canal	
	Km	%	Km	%
very good	39	12	49	20
good	85	27	22	9
moderate	98	31	69	29
poor	78	25	62	26
very poor	14	5	40	16

Note:- Lengths of rivers and canals are routinely sampled to determine water quality by looking at the chemistry of the water and the variety of life living in the water. Key chemical and biological indicators are used to grade water. There is a variation in the lengths of river and canal monitored for chemical and biological quality.

Flood Defence

Length of main river = 285 km

Note:- main river = lengths of river where the Agency has powers to maintain and improve for flood defence purposes.



THE RIVER AND CANAL NETWORK

KEY

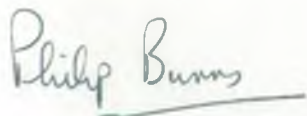
- Catchment boundary
- Built up area
- Major watercourse
- Minor watercourse
- Canal
- Black Country boundary (based on 19th century mining activity)
- /// Blythe/Cole/Bourne sub-catchment

Foreword

When the Environment Agency was formed on 1 April 1996 it inherited from the National Rivers Authority the results of the public consultation on the River Tame Catchment Management Plan. Since then staff have been considering the very good response to the consultation and have produced this comprehensive Action Plan for the improvement of this unique and complex river catchment.

Some forewords to these Action Plans are headed with poetic quotations about the catchment involved but despite extensive searching, the conclusion was reached that the River Tame was never a river to inspire poetry. This supports the need to produce a plan to look at ways of improving the quality of the water environment associated with the rivers and canals within this area.

In proposing the actions in this document we recognise that this plan only covers improvements which are achievable in five years and that consequently some organisations longer term aspirations will not be met. However this plan does establish a vision of an improved water environment and emphasises that this can only be achieved by co-operation between all the parties involved. This echoes the Agency's aim of making a lasting improvement to the whole environment through establishing partnerships with others.



PHILIP BURNS
Area Manager, Upper Trent Area

"Grey willows whispered by the Rea,
where lovers dreamt and children play in clean fields on a summers day"

Harry Reeves - Walking the River Rea 1989
(FROM A PICTORIAL MAP OF BIRMINGHAM 1730)

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Management Plan (CMP) should be
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River Tame at Bescot, Walsall

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Introduction

1

This catchment plan is about the River Tame, its tributaries and the land which drains to it. It includes most of the West Midlands conurbation (Birmingham, Sandwell, Walsall and parts of Wolverhampton, Solihull and Dudley) and areas of Staffordshire, Warwickshire and Leicestershire. The map on the fold-out cover shows the main features of the catchment.

Tributaries on the upper reaches of the River Tame include the River Rea and the Hockley, Plants, Darlaston, Ford and Tipton Brooks. On the lower reaches, the tributaries include the Black/Bourne Brook, the River Anker and the River Sence. The catchment also includes the Birmingham Canal Navigation and the Birmingham and Fazeley, Coventry and Ashby Canals. A catchment plan for the Rivers Blythe, Cole and Bourne was produced in 1994.

The Action Plan for the Tame catchment is the second stage in the Tame catchment management plan process, which is shown in Diagram 1.

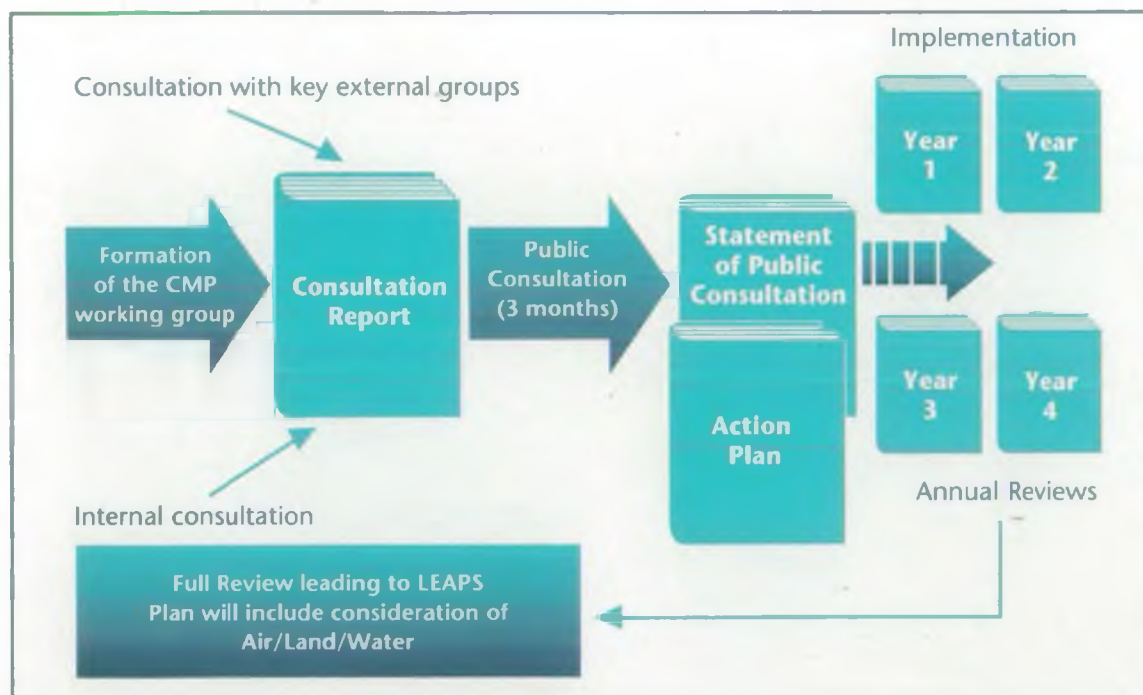
The Consultation Report was published in January and was widely distributed across the catchment. We received 170 responses which have been carefully considered. The comments and our response are detailed in a separate "Statement of Public Consultation" published to accompany the plan.

There is general support for the aims and objectives of the plan and for the issues raised. Some respondents however considered the "vision" weak and water quality objectives in the upper part of the catchment not high enough. Urban run-off was ranked the most important issue and we received many suggestions for reducing pollution.

No additional issues have been added but many have been modified, with new proposals in response to the comments received and the negotiations which followed the end of the consultation period. The vision and key objectives have also been changed.

The implementation of this Action Plan will be closely monitored. The first Annual Review will be published in 14 months time, which will detail the progress that has been made.

Diagram 1 – The CMP process



(Note:-This five year implementation period may change.)

1.1 The Environment Agency and Local Environment Agency Plans

On 1 April 1996, the National Rivers Authority (NRA) merged with Her Majesty's Inspectorate of Pollution (HMIP), Waste Regulation Authorities and several smaller units from the Department of the Environment, to form the Environment Agency. This merger provides a more comprehensive approach to the protection and management of the environment by combining the regulation of land, air and water.

As guardians of the environment the Agency's vision is:-

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

The Tame CMP Consultation Report was produced by the National Rivers Authority and this Action Plan is the first to be published by the Upper Trent Area of the Environment Agency. The Agency is committed to the development of a integrated management plan for the water environment in the Tame catchment.

The Environment Agency has wider responsibilities than the NRA. CMPs will continue to address the water environment, but when the plan is reviewed the opportunity will be taken to address wider environmental concerns relating to air, land and water.

These new plans will be called Local Environment Agency Plans (LEAPs) and they will reflect the aims, objectives and responsibilities of the Agency. These LEAPs, like CMPs, will be local area based plans that address issues and problems through the actions of the Agency, the actions of the Agency in partnership with others or by the agreed action of others. LEAPs will play a key role in the delivery of our services through integrated activity and priority business planning and will promote openness and accountability.

In its statutory guidance to the Agency, on sustainable development, the Department of the Environment promotes integrated environmental management in partnership with other organisations, working to shared objectives. LEAPs will be one of our main tools to achieve this objective. LEAPs are not statutory documents.

1.1.1 Routine work of the Agency

The strategic nature of the CMP as a planning tool means that the plan is not designed to reflect fully our routine activities within the catchment. Our everyday work commits substantial resources to managing the environment. This work is detailed in the Consultation Report (pages 5-9).



The River Tame downstream of Lady Bridge, Tamworth

1.2 Environment Agency Responsibilities and Activities

The Agency has head offices in Bristol and London and is split into eight regions and 26 areas. The Tame catchment lies within the Upper Trent Area, Midlands Region. Upper Trent is one of four areas in the Region.

The Agency has responsibility for:-

- The maintenance, improvement and regulation of water quality and water resources.
- Flood defence and navigation.
- Fisheries.
- Water pollution control.
- The regulation of the most potentially polluting industrial processes (Part A processes).
- The regulation of premises that use, store or dispose of radioactive materials.
- Licensing and regulation of waste management sites.
- Licensing and regulation of waste carriers and brokers.

It has general duties with regard to conservation and recreation and shares many of its responsibilities with local authorities, in particular waste management and the regulation of emissions to air.

1.2.1 Statutory committees

The Midlands Region is served by three committees:-

- Regional Environmental Protection Advisory Committee (REPAC).
- Regional Flood Defence Committee (RFDC).
- Regional Fisheries Advisory Committee (RFAC).

RFAC has an extended remit for recreation, navigation and conservation where it relates to fisheries, recreation and navigation.

Membership of the committees consists of local people drawn from the community including industry, agriculture, local authorities and environment groups. The Agency is required by law to consult the committees on all aspects of its work. The RFDC has executive powers with regard to the discharge of the Agency's flood defence duties.

1.2.2 Area Environment Groups

The Upper Trent Area is served by its own Area Environment Group. Membership consists of local people who live and work in the area and who represent a wide spectrum of interests. These include local authorities, industry, agriculture, conservation, amenity and recreational interests and riparian owners. The Group will advise the Agency on LEAPs, the delivery of local services and act as a link between the local community, the Agency and its statutory committees.

1.3 Sustainable Development & Biodiversity

1.3.1 Sustainable development

The Agency's overall aim of protecting and enhancing the environment contributes to the Government's and the world wide environmental goal of sustainable development which is defined as:-

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs". (Brundtland Definition - Earth Summit, Rio 1992).

This is carried through in the Agency's vision Statement and requires economic and social activities in England and Wales to be undertaken within the carrying capacity of the environment.

The economy, society and the environment are linked and all form part of a dynamic system that is in constant change. Action, regulation, education and enforcement all have a part to play in working towards sustainable development by the Agency and by others.

Integrated environment management is a means by which the Agency can promote sustainable development and CMPs are an important part of this process.

1.3.2 Biodiversity

Biodiversity is simply a new term meaning the "variety of life".

The Biodiversity Convention signed by the UK government at the Earth Summit in Rio (1992), seeks to ensure that the full range of animal and plant species are conserved. A national action plan for biodiversity was published in January 1994. Work since then has identified 116 key species and 14 key habitats, many of them aquatic or wetland related and thus of particular interest to the Agency.

The Agency has a duty to further the aim of biodiversity conservation. In Upper Trent Area the following species are of particular significance:-

- water vole.
- great crested newt.
- white clawed crayfish.
- floating water plantain.

In the Tame catchment the water vole is of particular relevance and is addressed in Issue 20.



Derelict land close to the River Tame, Walsall

Review of the Consultation Process

2.1 Summary of Public Consultation

The Environment Agency undertook an extensive consultation with interested parties and the general public and this section reviews the consultation process and briefly summarises the comments and our actions in response. A more detailed review of the comments including individual responses is given in a separate document entitled "Statement of Public Consultation".

The launches began a consultation period of ten weeks, which ended on 31 March 1996. During the consultation period the Report was promoted by:-

- Distributing 1100 copies of the Consultation Report to people at the launches, by post to those on our mailing list, to people who requested them and through libraries.



The Council House, Birmingham

2.1.1 Informal consultation

In the summer of 1995 we wrote to 50 key groups, local authorities, national organisations and other representative bodies asking for comments on a list of initial issues and problems affecting the water environment in the catchment. All comments from this informal consultation were considered and where appropriate incorporated into the Consultation Report.

2.1.2 Formal consultation

The CMP consultation process was launched with public meetings on the 16th January 1996 at Birmingham Council House and on the evening of 17th January at the Rawlett School, Tamworth. We invited 350 organisations and individuals to the meetings by letter and issued press releases. A total of 120 people came to the launch meetings. They represented a wide spectrum of interests from within the catchment and national organisations.

- Television, radio and newspaper articles.
- Two sets of display boards which toured the catchment to nine libraries and Kingsbury Water Park.
- An A3 sized colour poster, which was distributed with the document. Recipients were asked to display them in prominent locations such as notice boards in libraries, council offices and other venues.
- A summary booklet which included a questionnaire. 2,500 were distributed widely through libraries, direct mail and from displays at council offices and other venues.

2.2 Summary of Comments

We received 170 responses to the consultation – 61 letters and 109 questionnaires. The people and organisations are listed in Appendix 1. All letters and questionnaires were acknowledged and follow ups were sent where appropriate.

In general the comments were supportive of the concept of catchment planning, the Tame CMP in general, and our specific proposals; but we did receive some negative comments. We also received many helpful suggestions and were asked specific questions about the catchment. Errors and omissions were also highlighted and these are summarised in Appendix 2.

2.2.2 Issue 1: Urban run-off and the de-oxygenation of surface water

This was ranked as the most important issue to be addressed. We received support for the issue and several suggested techniques to reduce pollution both using preventative methods and the removal of pollutants from rivers. In particular, techniques exploiting natural processes, such as reed beds were identified. The importance of co-operation between the Agency and local authorities was highlighted.



The Tame CMP Consultation Report launch, Birmingham

2.2.1 Vision and key objectives

Whilst people generally supported our key objectives they were critical of our vision statement. In particular, we were criticised for saying that “the River Tame can never again be the clear trout stream it was in 1730” and for using the vague expression “but it can be much more than it is”. In response to these comments the vision statement has been amended. Several people offered amended wordings and new objectives to the key objectives list. The most common suggestion was that increasing public participation and education should be a key objective and this has been included.

2.2.3 River Quality Objectives

People were concerned about the Agency’s River Quality Objectives (RQOs) for the catchment, in particular:-

- Many stretches do not have higher objectives than the present quality.
- On some stretches the objective is lower than the current quality.
- Some stretches were set the Agency’s lowest objective (RE5).

When objectives were first set for the region's rivers in the late 1970s, nearly 10% of total length had a quality class equivalent to RE5 and it was intended that more than half of that would be improved to at least RE4. It was expected that objectives would be met by the end of the 1980s when they would be reviewed.

Although all the original objectives have not yet been achieved, there has been good progress in the last 5 years and there will be further reductions in the lengths of RE5 rivers by 2000 as a result of major capital expenditure by Severn Trent Water Ltd in the Tame catchment.

In setting objectives, the Agency must be satisfied that short term objectives will be achieved within a notional period of 5 years. Long term objectives must be based on a realistic view of the actual and potential uses of the water and there must be a technically feasible method of reaching the target. Work to bring about improvement may need to be planned in the medium to long term (5 to 10 years) depending on factors such as availability of funding or government restrictions on public expenditure.

Where an objective of RE5 has been set for the above reasons but improvements in quality caused by such things as change in land use or closure of sewage or industrial effluent treatment works mean that a better objective could be sustained, the objective may be reviewed. The Environment Agency shares the aspiration of the wider public to pursue water environment improvements within the constraints of what is technically feasible and consistent with the nation's economic policy. This would be normally be done as part of the CMP process.

2.2.4 Issue 8: Litter, unauthorised tipping and the aesthetic pollution of rivers and canals

This issue is the second most important for those who answered the questionnaires. People supported the Agency for raising it and for the measures proposed to tackle it.

We are developing a system for measuring the aesthetic quality of a watercourse to supplement our chemical and biological measurements. This will help us to address this aspect of pollution and we are also investigating ways to ensure that public complaints about water quality to local authorities are forwarded to the Agency.

2.2.5 River corridors

The plan included two issues on river corridors (19 & 20) which seek to improve corridors for public access, wildlife and amenity. They attracted the largest number of comments and were given high priority on the questionnaires.

There is overwhelming support for the principles of the issues, but potential conflict between public access, nature conservation, landowners interests and user groups was acknowledged. The importance of partnership was repeatedly referred to and the contribution that others already make was identified. Comments included specific suggestions for stretches of riverside walkway or corridor enhancement. The perception of water quality was seen as important if improved access to the river bank is to be achieved.

2.3 Further Action

Many changes to the issues, options and proposals have been made as a consequence of public consultation. The vision and key objectives have been modified and new actions and partnerships developed following meetings with key groups and interested individuals.

Changes to existing issues have been identified in the activity tables in Section 5. The Action Plan reflects a balance between the opinions expressed and the need to ensure a feasible and workable plan.

Overview of the Catchment

3.1 Brief Description of the Catchment

The Tame catchment is dominated by the West Midlands conurbation which is located on the headwaters of the River Tame. It affects most of the river system and has a serious impact on water quality. The only major tributary not affected is the River Anker which rises in north Warwickshire and west Leicestershire.

The population in the catchment in 1991 was 1.7m, of which over 80% live in the West Midlands conurbation. Over recent decades the population of the conurbation has declined but there has been a growth in the areas around Lichfield, Tamworth and Hinckley. Over 40% of the catchment is urban.

The West Midlands is an important manufacturing, engineering and metal finishing region. Birmingham is a major administrative and financial centre and England's second city. Since the early 1980s, a lot of effort has gone into revitalising older industrial areas.

The River Tame was predominantly a rural river until the 19th century, when the Industrial Revolution had a serious impact on the river. The growth of Birmingham and the Black Country towns led to pollution and the need to modify the river for flood defence purposes. Major pollutions in the 1860s and 1870s destroyed fisheries on the Tame and adversely affected the River Trent. By 1945 the River Tame was so polluted that it was dead, devoid of all life. Survey work in 1946 showed that gas liquors were so toxic that sewage works could not function. The sewerage system was

overloaded and untreated effluent flowed into the river continuously. Since the 1950s, drainage and river authorities have worked to improve the quality of the River Tame and its tributaries. Major investment in the sewerage system started in the late 1960s and this, combined with the introduction of natural gas, the reduction in heavy industry, better pollution control and sewage treatment has led to improved water quality.

The River Tame is unique in the UK in that the whole river is treated by passing through river purification lakes at Lea Marston. The lakes are owned by the Agency. The river passes through shallow lakes which slow its flow, allowing polluting material to settle out. This is removed and sent to Coleshill sewage treatment plant for treatment. Water quality improves downstream of the lakes and allows a viable fish population to live in the main river.



Lea Marston purification lakes

3.2 Catchment Uses and Resources

A detailed assessment of the catchment and the uses, activities and resources was given in the Consultation Report. The following provides a summary of key points.

3.2.1 Development and infrastructure

In recent years investment in the West Midlands has been directed in part towards the older industrial areas. This has provided opportunities to reduce the impact of historical pollution through the remediation of contaminated land,



The Black Country 1948 (taken from 'Conurbation' – The West Midland Group 1948)



Minworth STP outfall, Water Orton

and to reduce the problem of urban run-off through redevelopment and the use of source control and other modern drainage techniques. Renewal also allows for the re-creation of river corridors and improved access. The emphasis in the upper reaches of the catchment is to improve the urban environment.

Most development is concentrated in or around the West Midlands conurbation and larger towns to the east. Local plans and structure plans have allocated 550 ha of land for an additional 15,000 new houses to be built by the year 2001. The Birmingham Northern Relief Road is the main transport infrastructure project planned for the next few years. New rail freight links to the continent, utilising the Hams Hall Channel Tunnel Freight Terminal, are also under consideration.

About 1,000ha of industrial land has been allocated for business purposes. The West Midlands Regional Planning Guidance was published in 1995 and indicates a shift in emphasis with a desire to address sustainable development through the planning system. A key part of the process is an acknowledgement that environmental capacity should act as a limiting factor on economic development.

3.2.2 Water quality

The quality of water in the rivers of Birmingham and the Black Country is generally poor. Downstream of Lea Marston, the River Tame is of fair to good quality. The Rivers Anker and Sence are generally good quality.

The River Tame contains a high proportion of waste water from sewage works and factories. At Lea Marston, sewage effluent and industrial waste account for 55% of the average flow and 90% in dry weather. Most of the West Midlands

sewage is treated at Minworth STP and Coleshill STP, although smaller works are located close to the headwaters of the river.

Below Lea Marston the river is joined by the Black/Bourne Brook and the River Anker. Both these watercourses are used for the disposal of treated sewage effluent but their overall effect is to improve the quality of water in the River Tame.

Most liquid trade effluent is treated at sewage works. Direct discharges to rivers are mainly cooling water or contaminated surface water. The river continues to suffer pollution from urban run-off and contaminated land.

Urban run-off

Rivers in urban areas receive rainwater draining from the surrounding roads, buildings and factory yards and in some areas they also receive overflows from combined sewers. This is called urban run-off. It is contaminated by dilute sewage and the dust, dirt, oil, rubber and other debris that has collected since it last rained.

This pollutes the river in several ways, but most importantly it consumes the water's oxygen. If the oxygen levels fall low enough, fish and other aquatic life will be killed. Urban run-off is a problem in the catchment, particularly in summer, and it is highlighted in Issue 1.

Contaminated land

In parts of the catchment, particularly Birmingham and the Black Country, the land and the groundwater are contaminated by chemicals left by previous uses; such as old tips, industrial sites and mine workings. Water from these sites continues to cause pollution of watercourses and limits the abstraction of groundwater in some areas of catchment (Issues 10 & 11).

3.2.3 Mineral working and waste disposal

In the past, numerous minerals have been extracted from the catchment. Coal mining was a major activity in the catchment and a legacy of pollution remains with problems of spoil heap run-off (Issue 9) and acidic discharges. There are large sand and gravel workings in the Tame valley below Lea Marston. Much of the sand and gravel restoration has been to open water providing major recreational and conservation opportunities (Issues 19, 20, 21 & 22).

There are many waste disposal facilities in the catchment which include incinerators, transfer stations, waste treatment sites, storage sites and scrapyards as well as landfill. These facilities are generally operated in a satisfactory manner with respect to the water environment.

3.2.4 Water resources and abstraction

The people, industry, agriculture and canals of the catchment use a large amount of water. The underground water resources in the catchment are the most important source for public water supply and industry, whilst the rivers in the lower parts of the catchment provide water for agriculture. Birmingham also receives large amounts of water for public supply from the Elan Valley reservoirs in mid-Wales and from the River Severn.

The Agency controls the use of water resources and protects them from pollution. Generally, the west of the catchment has sufficient water resources to allow new licences to be granted, while in the east and north, water resources are more restricted.

Underground water is held in rocks which contain tiny spaces and cracks. These rocks are called aquifers and the most important in the catchment is the Triassic Sherwood Sandstone which occurs in a band from Longbridge to Lichfield and underlies much of Birmingham. Aquifers around Lichfield are used to provide public drinking water to areas of Staffordshire and the Black Country. Rates of abstraction have

increased to the point that, in some parts of the aquifer, the amount of water being abstracted is greater than the amount being replaced by rainfall. This has led to some watercourses drying up in summer. The Agency is working closely with South Staffordshire Water Plc to develop alternative supplies (Issue 12).

In parts of Birmingham and Wolverhampton, groundwater levels are rising due to a drop in demand for water by industry. Groundwater in Birmingham has been contaminated by past industrial activity and in some places is not considered suitable for drinking water purposes. In parts of the city, basements are being flooded. Severn Trent Water Ltd is currently looking to use some of this resource with boreholes at Small Heath and Edgbaston.

3.2.5 Flood Defence

Flood defences have been constructed in many parts of the catchment, especially in urban areas. They include the extensive flood banks on the River Tame at Tamworth, Whitacre Heath, Water Orton and in the conurbation at Witton, Hamstead, Bescot and Oldbury.

On the middle reaches of the River Tame and on its Oldbury arm, flood balancing areas have been constructed at Ocker Hill, Sheepwash, Bescot, Sandwell and Perry Hall playing fields.

Flood defences do not entirely prevent flooding but do reduce the risks to people and property. The Agency is to review existing flood defences along the upper and middle reaches of the River Tame (Issues 15 & 16). A flooding problem at Brookvale Road, Witton is proposed to be tackled through a joint approach by the Agency, Severn Trent Water Ltd and Birmingham City Council (Issue 18).

3.2.6 Agriculture & forestry

Agriculture

Agriculture is the major land use in the catchment and is concentrated in the central and eastern areas. There is a mix of arable and livestock farming but generally over the past 10-15 years the land in agricultural production has declined due to new housing, roads, golf courses and for other uses such as grazing horses.



The River Anker near Atherstone

The Agency is involved in two schemes in the catchment operated by MAFF designed to combat the problem of rising nitrate levels in groundwater where these are caused by agricultural practices.

These are:-

- The Lichfield Nitrate Vulnerable Zone (NVZ)
- The Hopwas Nitrate Sensitive Area (NSA)

The number of pollution incidents caused by agricultural practices has generally declined in recent years.

Forestry

Woodland accounts for only 2.9% of land area in the Tame catchment. However three major forestry initiatives will have an effect over the next few years.

The National Forest

The Forest boundary cuts across the north of the catchment and included within its boundary is the National Memorial Arboretum project to be developed near the confluence of the River Tame with the River Trent.

The Forest of Mercia

This is part of the Countryside Commission's community forest initiative and covers land to the west of Lichfield and parts of Walsall and

Cannock. Its purpose is to improve degraded landscapes and to promote recreation.

The Black Country Urban Forest

The aim of the Urban Forest is to increase green space in the Black Country and to reduce the impact of major transport routes.

Outside these initiatives woodland grant schemes and other proposals should result in a gradual increase in woodland coverage.

3.2.7 Fisheries and angling

The Agency is responsible for monitoring, improving and developing fisheries in rivers and canals.

In the upper reaches of the River Tame above Lea Marston there are very few fish. There are no permanent stocks of major coarse fish species, although there are temporary migrations from the River Blythe.

Below Lea Marston the river holds permanent coarse fish stocks. Good mixed populations of chub, dace and roach provide some excellent sport, particularly in the vicinity of Tamworth. The fish population is however at risk from occasional severe pollution from Birmingham and the Black Country (Issue 3). In 1995 a plug of de-oxygenated water created from summer storms after a long dry period killed over 90% of fish in

the River Tame. A similar pollution event, although less severe took place in early August 1996. Its impact was further reduced by the actions of the Agency in implementing new oxygenation techniques at Lea Marston.

The River Anker supports a high quality mixed coarse fishery, although weed growth is causing problems for anglers (Issue 28). The River Sence also has a good stock of chub and dace in the lower reaches and in its upper reaches it is managed as a trout fishery.



Oxygenation of the River Tame during a pollution event, Lea Marston

There is a lot of fishing on ponds, lakes and canals. These waters provide a variety of angling opportunities for coarse fishermen. However, zander are now present in some canal stretches, and the Agency is concerned about the effects that these fish may have on the stocks of other coarse fish species (Issue 29).

3.2.8 Conservation and recreation

The rivers, ponds, lakes and canals in the catchment are an important part of the natural environment and are valued for nature conservation and recreation.

Of the 28 nationally important SSSIs, 16 have a wetland interest. There are also 128 locally designated SINC's with wetland interest.

Within Birmingham and the Black Country a lot of the wildlife value of the rivers and their corridors has been destroyed by past pollution, urban development and flood defence works. There are however some areas of value and because they are in an urban area, they can be valuable assets. Public access to the riverbank is generally poor, but the extensive canal network provides a system of tow paths, some of which can also be used by cyclists. The Agency aims to promote and improve river corridors for wildlife and public amenity, including the creation of public riverside footpaths such as the Tame Walkway, which will extend from Willenhall to the River Trent (Issues 19 & 20).

The Tame catchment provides relatively few water based recreational facilities for such a large population. Pollution restricts the use of the rivers for angling, canoeing and other active water sports. There are many ponds, lakes and canals however which are used for recreation.

In the middle and lower reaches of the River Tame, flooded sand and gravel workings, such as those at Kingsbury Water Park, have become important for their birdlife, and are popular for water based recreation. The Agency is part of a group which is developing a plan for the middle Tame valley, to maximise the opportunities for conservation and recreation and to avoid conflict between competing interests (Issue 21).

The rivers Anker and Sence provide generally good wildlife habitats. The River Anker flows through Alvecote Pools, which are designated as a SSSI (Issue 24).

3.2.9 Navigation and canals

There are no navigable rivers in the catchment but there are over 200km of canals. Canals are the responsibility of British Waterways but the Agency monitors their water quality, licence's water abstractions, controls discharges to them and has duties in relation to fisheries. Generally, the Birmingham Canal Navigation suffers from poor water quality and a legacy of historic pollution (Issue 7). The Ashby canal and parts of the Wyrley and Essington canal are better quality and support good fish and insect populations. The Ashby canal is a SSSI.

Canals are being used as a focus for regeneration and Gas Street Basin in Birmingham is a good example of what can be achieved. Extensions to the network are being pursued by local canal restoration groups, with proposals to recreate the Lichfield canal and extend the Ashby canal as far as Moira.

3.2.10 Hydropower and renewable energy

There are no hydropower schemes in the catchment and none are proposed for the foreseeable future. Being generally low lying and in the centre of England wind power schemes are also unlikely. Although not the subject of this plan the area has the potential to produce more of its energy requirements from renewable resources. There are many opportunities for waste to energy plants for example, incinerators using non-recyclable domestic and industrial waste, methane production from landfill sites and sewage works. This area of activity is expected to increase over the next few years and is likely to be included in future LEAPs.



Gas Street Basin, Birmingham

Protection through Partnership

4.1 Introduction

The Agency is well placed to influence many of the activities affecting the water environment through the Water Resources Act 1991 and other legislation. The Agency has flood defence duties relating to the maintenance and improvement of "main rivers" where the Agency has the power to undertake works and this allows some control over activities close to the river bank. In the West Midlands conurbation however, nearly all the tributaries of the River Tame are not designated "main river" and responsibilities for maintenance and improvement lie with local authorities and riparian owners.

Local Authorities are responsible for controlling land use and it is primarily land use change in the long term and the opportunities presented by redevelopment that will tackle the issues of urban run-off, contaminated land and the renewal of river corridors. In addition the support of community groups, individuals, landowners and business will be needed to tackle issues such as litter, pollution, private sector investment and river corridor enhancement.

The Agency must work in partnership with others to ensure that the actions are implemented and that the key objectives and the long term vision can be realised. The Agency is working closely with Local Authorities in particular. Education also has an important role in changing attitudes and work practices.

The following organisations are included in the five year action programme (Section 5):-

- British Coal.
- Birmingham City Council.
- Birmingham Groundwork.
- British Waterways.
- Countryside Commission.
- English Nature.
- Highways Agency.
- Lichfield District Council.
- North Warwickshire District Council.
- Sandwell Metropolitan Borough Council.
- Severn Trent Water Ltd.
- South Staffordshire Water Plc.
- Staffordshire County Council.
- Tamworth Borough Council.
- Tidy Britain Group.
- Urban Forestry Unit.
- Urban Wildlife Trust.
- Walsall Metropolitan Borough Council.

4.2 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".

In 1994 the Government produced a national sustainable development strategy and action plan for the UK. At the local level, most local authorities are working with local communities to produce their own Local Agenda 21 programmes, to promote sustainable development and to improve quality of life. It is the idea of thinking globally, acting locally.

The water environment is an important part of any sustainable development strategy. The Agency has been working with Staffordshire County Council and Sandwell MBC through Local Agenda 21 (LA21) to protect and improve the water environment. In Sandwell many of the Tame CMP issues and actions have been incorporated into their LA21 Strategy.

4.3 Land Use Planning and Catchment Management Planning

4.3.1 Introduction

Land use is the single most important influence on the water environment. It follows therefore, that land use change has important implications for the water environment which can be both positive and negative. Government planning guidance highlights the importance of communication between Local Planning Authorities (LPAs) and the Agency and the relationship between land use and water matters.

4.3.2 Planning liaison

The control of land use change is primarily the responsibility of LPAs, through implementation of the town and country planning acts. Local development plans provide a framework for land use change and are the key consideration in the determination of planning applications.

The Agency is a statutory consultee on development plans and certain categories of planning application. This allows the Agency's views to be considered by the Council 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.

The NRA produced a set of statements in its document "Guidance Notes for Local Planning Authorities on the Methods of Protecting the Water Environment through Development Plans". These statements provide a general guide to LPAs on what policies should be included and why they are important. This guidance will be updated soon by the Agency.

4.3.3 Local planning guidance

In the Consultation Report the NRA set out draft policy guidance highlighting where planning can improve the local water environment. This guidance was considered and ten comments were received, mainly from LPAs. Support was given to the Agency's continued involvement in land use planning and the guidance issued in the plan.

The planning system generally and the use of planning conditions in particular, must not duplicate the controls imposed by pollution control bodies. These include the Environment Agency and local authorities in their non planning functions. Clarification is provided in Planning Policy Guidance Note 23.

The five guidance statements are set out below. We would like these to be adopted by LPAs when development plans are reviewed. Attention will be drawn to these statements through our planning liaison work.

Following the publication of the Consultation Report it became clear that one of the ways to tackle the problem of urban run-off, "source control", should be explicitly referred to in the planning guidance statements. Source control is about dealing with surface water run-off where it is produced, using a variety of means such as grass swales, wetland, permeable pavements and soakaways. It is referred to in planning guidance statement number 1.

Planning Guidance Statements

1 Urban run-off and the pollution of the water environment

- i) Developments should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, pose an unacceptable risk of pollution of surface waters, either directly or via the surface water sewerage system.

The LPA should ensure that all new industrial and commercial developments have an adequate means of foul and surface water drainage. Hardstandings, roadways and storage areas must be properly drained with oil interceptors or other pollution prevention measures as required. All above ground oil tanks, chemical stores and sources of polluting material must be bunded or otherwise contained and the containment properly maintained for the life of the facility.

- ii) Surface water run-off should (as far as is practicable) be treated at source on all new developments through the use of swales, wetlands, soakaways, permeable pavements and roadways etc.

This is to ensure aquifer recharge, improved water quality and the maintenance of the natural regime of flows in watercourses. This approach may not be suitable in areas suffering from the problem of rising groundwater.

2 Industrial development outside urban areas

Developments should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, pose an unacceptable risk of pollution of surface waters, either directly or via the surface water sewerage system.

The LPA should ensure that all new industrial and commercial developments have an adequate means of foul and surface water drainage.

Activities which include wet industrial processes or the storage and use of chemicals with a significant pollution potential will not be supported without a connection to the public foul sewer and the installation of adequate pollution prevention measures. Hardstandings, roadways and storage areas must be properly drained with oil interceptors or other pollution prevention measures as required. All above ground oil tanks, chemical stores and sources of polluting material must be bunded or otherwise contained and the containment properly maintained for the life of the facility.

3 Development of contaminated land

Developments should not normally be permitted which, in the opinion of the LPA, after consultation with the Agency, pose an unacceptable risk to the quality of ground or surface waters.

When development is permitted the LPA should ensure that, before development commences, the site has been thoroughly investigated and an appropriate remediation strategy developed. Where the site is known or strongly suspected to be contaminated to a significant degree, the LPA should ensure that site investigations are undertaken before the determination of any planning application. Where the site is known or suspected of being slightly contaminated the LPA should use planning conditions to ensure that the site investigation is carried out before development commences.

To achieve satisfactory development, which does not cause pollution of the water environment, the LPA should consult the Agency. They should ensure that the applicant provides the appropriate information to allow the Agency to determine the need for a site investigation, the extent and nature of contamination, and the effectiveness of any remediation measures.

4 Protection of groundwater resources

Development should not normally be permitted unless there are adequate water resources available to serve the development, or where they can be made available without adversely affecting existing abstractions, river flows, water

quality, agriculture, fisheries, amenity or nature conservation.

In the Lichfield and Shenstone aquifer areas development should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, will lead to a significant reduction in recharge to the aquifer. Surface water run-off (as far as is practicable) should be treated at source on all new developments through the use of swales, wetlands, soakaways, permeable pavements and roadways etc.

Development should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, poses an unacceptable risk of pollution of groundwater resources. Where development is permitted in areas where the groundwater is vulnerable, the LPA should ensure that appropriate pollution control measures are included to prevent an unacceptable risk of pollution of the water resource.

5 The development of river corridors in urban areas

Development should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, will adversely affect the ability of the Agency and other bodies to carry out flood control works. Wherever possible the LPA should seek to ensure that the protection of this access also leads to an enhancement of the river corridor more generally. Where possible, development should be set back away from the river bank.

Development should not normally be permitted which in the opinion of the LPA, after consultation with the Agency, will lead to a significant reduction in the recreational, amenity or nature conservation value or potential of the river corridor. Wherever possible the LPA should seek to ensure that development in or adjoining the river corridor leads to an enhancement of the recreational, amenity and nature conservation value of the river corridor.

Actions

5.1 Implementation

Implementation of the plan is based on the 29 key issues set out below. These were discussed in detail in the Consultation Report and have been modified where appropriate in the light of the consultation responses. Their resolution is considered necessary in order that the plan can be successful in achieving real improvements within the catchment.

Following the end of the consultation period the Agency has undertaken extensive negotiations with key groups and individuals. The vision and key objectives have been modified in the light of the consultation response.

Four of the issues, 14, 17, 22 and 24 do not carry specific actions for a variety of reasons. All actions should be Specific, Measurable, Agreed, Realistic and Time based (SMART). The plan represents the non routine investment of the Agency and others in the catchment. Issues 14 and 17 should be resolved through the existing routine or programmed work of the Agency. Issue 22 will be led by other organisations and the Agency is unable to specify timetables or actions at this time. The impact of Alvecote Pools on downstream water quality (Issue 24) is primarily aesthetic and given the sensitive nature of the site, remediation cannot be justified.

The consultation process generally supported the issues raised by the Agency. Many of the options have been carried through into the activity tables but many new actions have been added, and new approaches taken. Actions which have resulted from the consultation process are highlighted (+).

5.2 Issues

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

Key

- > Greater than.
- Action in the year indicated (cost figures given if known).
- R Recurring – no additional costs to annual budgetary provision.
- U Unknown costs at this time.
- U(i) Individual costs will be identified and agreed during negotiations.
- U(ii) Marginal increase in costs on all promoting bodies.
- U(iii) Capital costs will be identified during investigations or surveys.
- * Only Agency costs identified here. Costs to other organisations unknown.
- + Activity added as a result of consultation.
- K £1,000.

A number of the actions will require feasibility studies and an appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies, further action may not be required. The timescales for actions may vary depending on future political change and changes within the economy. All changes will be highlighted in the Annual Review.

Notes on Abbreviations

BC	British Coal	LEAs	Local Education Authorities
BCC	Birmingham City Council	MAFF	Ministry of Agriculture Fisheries and Foods
BW	British Waterways	Ofwat	Office of Water Services
CoCo	Countryside Commission	SMBC	Sandwell Metropolitan Borough Council
EA	Environment Agency	SSW	South Staffordshire Water Plc
EN	English Nature	STW Ltd	Severn Trent Water Ltd
FoM	Forest of Mercia	TBG	Tidy Britain Group
GW	Birmingham Groundwork	UFU	Urban Forestry Unit
HA	Highways Agency	UWT	Urban Wildlife Trust
LAs	Local Authorities	WMBC	Walsall Metropolitan Borough Council

Issue: 1 Urban run-off and the de-oxygenation of surface water

Urban run-off, particularly following summer storms, can pollute rivers. This causes a reduction in the water's oxygen levels that can lead to fish dying (additional details are given on page 9). In July 1995 there was a serious pollution of the River Tame, which killed over 90% of the fish downstream of Lea Marston and also severely affected the River Trent. A further event occurred this year, on 6 August.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
1.1 General									
Assess the pollution load from urban run-off.	EA		25	25					
1.2 Target catchments identified by the above study and formulate remediation schemes.	EA		U						
i) Road run-off									
Monitor road run-off quality within target catchments identified by the above study and seek remediation measures where appropriate.	EA	HA	U(i)		•	•	•		
ii) Industrial sites.									
a) Site visits and surveys within target catchments identified by the above study to seek remediation measures where appropriate.	EA	STW Ltd Site Owners	U(i)		•	•	•		
b) Develop and produce good practice guidance (+).	EA STW Ltd		U		•	•			
iii) Sewerage systems.									
Identify and rectify wrong connections and unsatisfactory discharges within target catchments identified by the above study.	EA STW Ltd		U(i)		•	•	•		
1.3 Promote surface water source control by:-									
i) Visits to 10 Local Authorities in the catchment (+).	EA		R	•	•				
ii) Recommendations to consultants and developers (+).	EA		R	•	•				
iii) Develop a joint working statement regarding the maintenance responsibilities for source control systems (+).	EA	STW Ltd	R		•				
1.4 Develop a system to deal with low dissolved oxygen situations.	EA		15	15					

1.3 A "good practice in stormwater control" manual is currently under preparation and is expected to be published in the summer of 1997.

Source control means dealing with surface water run-off where it is produced by using grass swales, wetlands, permeable pavements, and soakaways. It limits the spread of contaminated material. The central process of infiltration and percolation contribute naturally to aquifer recharge and the approach leads to improvements in water quality, reduces the problems associated with urban run-off and maintains natural flow regimes.

- 1.4 Provision currently exists, as a temporary measure, to add hydrogen peroxide at Lea Marston lakes as part of an emergency remediation strategy. Lea Marston lakes generally protect the lower reaches of the River Tame from the impact of urban run-off. The lakes are also a collection point for litter (Issue 8).

Issue: 2 The future operation of Lea Marston purification lakes

Prior to the construction of Lea Marston lakes the River Tame was fishless throughout its length and its polluted nature, particularly in wet weather, had a severe adverse impact on the River Trent. In April 1996 the ownership and management of the lakes was transferred to the Agency from the former NRA. They improve water quality, and have allowed a viable fish population (Issue 3) to establish downstream. Their operation has also led to improvements in the quality of the River Trent and contributed to the UK's commitment to reduce toxic metal inputs into the North Sea.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
2.1 Complete a comprehensive review of current operations and practice.	EA	STW Ltd	20	•					
2.2 Implement the agreed strategy	EA	-	R	•	•	•	•		

It is anticipated that planned upstream improvements (Issue 7) and expected developments (Issue 10) will lead to a significant improvement in upstream water quality.

Issue: 3 The sustainability of the fish population in the River Tame

The Agency and its predecessors have worked with other organisations to establish a healthy fish population in the River Tame. Above Lea Marston the river presents a very hostile environment not suitable for a sustainable fish population. Below Lea Marston we have been successful but recognise that the fish continue to be at risk from major pollution events linked to urban run-off (Issues 1 and 2).

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/2001	FUTURE
	LEAD	OTHER							
3.1 Continue restocking programme.	EA		30	10	10	10			
3.2 Encourage creation of off line refuges by local authorities, developers and riparian owners (+).	EA	LAs Owners/Developers	40		10	10	10	10	

- 3.2 The Agency is seeking to work in partnership with local authorities. This action links to Action 20.4 and will be developed as opportunities arise.

Issue: 4 River & canal lengths that fail their River Quality Objectives

The Agency has set River Quality Objectives (RQOs) for larger watercourses and canals. Some stretches of rivers and canals do not currently meet their short term or long term RQOs.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
4.1 Investigate further those river and canal stretches that fail their RQOs where the cause cannot be clearly identified.	EA		5	•	•				
• Tipton Brook, Alexandra Road to River Tame.				•					
• Groveland Brook, John's Lane, Tipton.				•					
• River Rea, Gravelly Hill Industrial Estate.				•					
• Griffins Brook, Bourneville.				•					
• Griffins Brook, Stirchley.				•					
• Sketchley Brook, u/s of Hinckley STP.				•					
• Black/Bourne Brook u/s of Burntwood STP.				•					
• Walsall Canal, Bull Lane, Moxley.		BW		•					
• Walsall Canal, Ryders Green Road.		BW			•				
• Ridgacre Branch Canal.		BW			•				
• Anglesey Branch Canal.		BW			•				
• Birmingham Wolverhampton Canal, James Mill.		BW			•				
• Icknield Port Loop, Icknield Port Road.		BW			•				
4.2 Identify those stretches that could be improved under AMP3.	EA	STW Ltd BW	R*		•	•	•		
4.3 Identify other river stretches that could be improved under AMP3.	EA	STW Ltd LAs	R*		•	•	•		

4.3 The Agency welcomes the comments of local authorities and others to help identify river stretches. Links to Action 6.2.



Dead fish, following pollution

Issue: 5 River stretches that can be upgraded to protect water quality

In a number of rivers the water quality is better than the long term River Quality Objective (RQO) and we believe that this quality is sustainable in the long term. We have consulted widely and received no objections to the proposed up-gradings. The stretches identified in the table below will be upgraded.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
5.1 Upgrade the long term objective for the stretches identified below:- <ul style="list-style-type: none">River Tame upstream of Waddens Brook (5.5km). RE5-RE4.River Tame downstream of Waddens Brook (0.3km). RE5-RE4.River Rea, Cannon Hill Park (8km). RE4-RE3.Plants Brook, Castle Bromwich (2km). RE5-RE4.River Sence, upstream Kelham Bridge (2.4km). RE4-RE3.River Sence, Pisca Lane (2km). RE4-RE3.	EA		R*	*					

The full list of RQOs for the catchment can be found in the Consultation Report (pages 139 – 145).

In the Consultation Report one proposal is to upgrade the Burntwood Brook upstream of Burntwood STP to RE3 following the re-routing of drainage from Manor Vinegar but the current improved quality has been shown to be variable. Before the Agency commits itself to upgrading the stretch, further investigations are required.

The River Sence upstream of Kelham Bridge is to be upgraded to RE3 following the closure of Kelham Bridge STP and the restoration of Coalfield West opencast site.



The River Rea at Cannon Hill Park

Issue: 6 Investment by STW Ltd to improve water quality

Severn Trent Water Ltd (STW Ltd) are responsible for the sewerage system and sewage treatment in the catchment. They have a programme of investment that is monitored by the Office of Water Services (Ofwat). This is the Asset Management Plan 2 (AMP2). The Plan will result in major investment in the Tame catchment over the next five years. The Agency has a major role in monitoring the delivery of AMP2 and is working to ensure that the investment is directed to areas where it will best improve the water environment.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
6.1 Finalise details and monitor implementation of schemes in AMP 2.	EA	STW Ltd Ofwat	R						
Total investment in the catchment under AMP2.	STW Ltd		>120000						
Combined sewer overflow improvement schemes:									
To rivers									
• Spring Road, Walsall.	STW Ltd	EA	U(iii)			4/98		03/00	
• Green Lane, Walsall.	"	"	"		12/97				
• Goscote Lane (d/s of canal).	"	"	"						
• Mackay Road, Walsall.	"	"	"	3/97					
• Pelsall Lane, Little Bloxwich.	"	"	"	3/97					
• Wolverhampton Road, Pelsall.	"	"	"	3/97					
• Clockmill Road, Pelsall.	"	"	"		12/97				
• Hildicks Crescent.	"	"	"		12/97				
• Alumwell, Walsall.	"	"	"			12/98			
• Londonderry Lane.	"	"	"	12/96					
To canals									
• Primrose Hill Lane.	STW Ltd	EA/BW	U(iii)	12/96					
• Brasshouse Lane.	"	"	"			6/98			
• High Street/Brasshouse Lane.	"	"	"			6/98			
• Stony Lane.	"	"	"			6/98			
• Stony Lane/High Street.	"	"	"			6/98			
• Bradbury Road Pumping Station.	"	"	"					03/00	
Black Country Trunk Sewer improvement scheme:									
A major improvement scheme which should improve the operation of a number of sewer overflows (not included above). Details yet to be agreed.	STW Ltd	EA	U(iii)		•	•	•	03/00	
Sewage treatment works improvement schemes:									
• Minworth STP.	STW Ltd	EA	90000	•	•	•	•	03/00	
• Coleshill STP.	"	EA	U(iii)	•	•	•	9/99		
6.2 Assess water quality benefits of completed schemes and identify future schemes for AMP 3.	EA	STW Ltd & BW	U(i)	•	•	•	•		

Issue: 7 Poor water quality in canals

Some canals, especially those of the Birmingham Canal Navigation, are recorded by the existing classification system, as having poor water quality. The static nature of water in canals acts to concentrate substances discharged to them. The laying down of contaminated sediment over many earlier decades and its potential for disturbance by boat traffic together with current intermittent polluting discharges adversely affects water quality. In some instances the classification system maybe inappropriate as some stretches whilst exhibiting poor water quality maintain healthy fish populations and a good biota.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
7.1 Investigate canal lengths that fail their river quality objective not highlighted under Issue 4.	EA		R	•	•				
7.2 Reconsider water quality objectives for these stretches as appropriate.	EA	BW	R			•	•		

The Joint Working Group made up of EA, BW and STW Ltd representatives is not expected, within the plan period to develop a separate methodology for the design of combined sewer overflow discharges to canals. The Agency has no plans at the present time to develop a separate classification system for canals. The Agency does not propose within the plan period to declassify the Gower and Anson Branch Canals.

Issue: 8 Litter, unauthorised tipping and aesthetic pollution of rivers and canals

As part of the Agency's General Quality Assessment (GQA) programme we are testing a scheme which measures aesthetic pollution in terms of the presence of litter, gross items, sewage debris, dog faeces, iron deposits, surface scums, oil, colour and odour. Riparian owners are generally responsible for removing litter although local authorities and the Agency have responsibilities in some circumstances.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
8.1 i) Develop and trial a GQA aesthetics monitoring system.	EA		20	•					
ii) Implement programme.	EA		U		•	•	•	•	
8.2 Promote clean up initiatives through:-									
i) The encouragement of stewardship by voluntary groups and others (+).	EA	LAs/ Others	U(i)		•	•	•	•	
ii) Promote with others measures to reduce sewage derived debris by reduction at source.	STW Ltd	EA/ TGB	U(i)		•	•	•	•	
iii) Provide information through schools, libraries and other means to the general public.	EA	LEAs LAs Others	U(i)		•	•	•	•	
8.3 Record levels of gross items and debris removed at Lea Marston and investigate the sources of tipped material (+).	EA		U(ii)	•	•	•	•	•	

The Agency is both finalising its education policy and discussing with the Tidy Britain Group and others the potential for establishing partnerships to further progress this issue.

Issue: 9 Contaminated run-off from spoil heaps at abandoned coal mines

Metals being washed out from spoil heaps by rain water are causing pollution problems at three former collieries in north Warwickshire; Birch Coppice, Baddersley Ensor and Pooley Hall.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
9.1 Chemically treat acidic run-off.	BC Property Division	New site owners	U	•					
9.2 Restore and cap spoil heaps.	BC Property Division	New site owners	U(iii)	•	•	•			
9.3 Re-profile and compact spoil heaps.	BC Property Division	New site owners	U(iii)	•	•	•			

Chemical treatment at Birch Coppice will continue until the new site owners have agreed a long term solution.

Issue: 10 The effect of contaminated land on water quality

On some sites, such as old tips, industrial sites and mine workings, the land and groundwater are contaminated. Where possible the Agency aims to ensure that the polluter pays for the removal of the pollution, but it is not always possible to achieve this. Many improvements have been achieved through redevelopment, but some sites remain contaminated and are causing pollution of the water environment. The remediation of Bentley Mill and Slack Lane sites should result in a significant improvement in water quality.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
10.1 Investigate and quantify the extent of pollution at:- • Bentley Mill. • Slack Lane.	EA	LA	13*	•					
	EA	LA	17*	•					
10.2 Pursue site remediation, where appropriate, in line with Government guidelines.	EA/LA	Polluter Land-owner	U		•	•	•	•	
10.3 Refurbishment and renewal of James Bridge gauging station.	EA		20*			•			

10.3 The gauging station will be used to monitor water quality and flow in the River Tame, downstream of contaminated land sites. Refurbishment will depend on European funding.

Contamination from liquid waste deposited in lagoons at Villa Farm has affected the underlying groundwater. The tipping stopped however many years ago and the lagoons have recently been filled thereby removing the source of the contamination. The Environment Agency will continue to monitor groundwater in the vicinity. The groundwater is not abstracted for public water supply purposes.

Issue: 11 The impact of rising groundwater beneath Birmingham

Groundwater beneath part of Birmingham is rising back to its old levels in areas from Harborne to Sutton Coldfield because of a reduction in abstraction by industry. In some places this water is polluted or is becoming polluted as it rises through contaminated land.

The Agency has no specific duties relating to rising water levels. We monitor water levels at 13 boreholes in the city as part of our water resources management duties. The potential impact of the water rising into contaminated land and subsequently discharging to surface waters is however of concern to the Agency. Rising groundwater may have benefits for wildlife in some areas, particularly Sutton Park.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
11.1 Investigate further the potential impact of rising groundwater.									
• Produce yearly summary.	EA		R*	•	•	•	•	•	Ongoing

Every assistance is being given to potential abstractors in the area. The available water resources are being investigated by STW Ltd and other potential abstractors. If water is abstracted for public supply locally or for transfer to other regions/areas then there will be an associated reduction in groundwater levels. It has been assessed that 50 MI/d of resources are available in the Triassic Sherwood Sandstones aquifer in Birmingham so potentially several abstractors could take advantage of the available groundwater resource. Care will be taken to ensure that this does not prejudice the conservation of wetlands or archaeological sites.

Issue: 12 The over abstraction of groundwater from the Lichfield aquifer

The Lichfield and Shenstone units of the aquifer are used to supply the northern part of the catchment with drinking water. The rate of abstraction in some areas now exceeds the rate of recharge from rainfall. The level of water in the aquifer has fallen and this has led to some watercourses drying up in summer. South Staffordshire Water Plc (SSW) is working with the Agency to solve this problem by developing alternative supplies.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
12.1 Complete and assess findings of a hydrogeological model of the Lichfield aquifer.	SSW	EA	13	•					
12.2 Commission alternative supplies and reduce existing SSW licences in the Lichfield aquifer.	SSW EA		U	•					

Issue: 13 Rising nitrate levels in the Lichfield aquifer

Nitrate levels in groundwater in the Lichfield aquifer are rising and at some boreholes SSW have installed treatment plants to keep the levels within European standards. The increase is mainly due to changes in agricultural practice. The Lichfield Aquifer has been designated as a Nitrate Vulnerable Zone (NVZ) by MAFF and farmers must operate within the "Code of Good Agricultural Practice for the Protection of Water". No other NVZs are proposed within the catchment. The NVZ designation will be reviewed in 1997/98.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
13.1 Review the designation of Lichfield NVZ.	MAFF	EA	40*	•	•				
13.2 Continue operations to remove nitrates at water treatment works.	SSW		U		•	•	•	•	

13.2 Costs are not available on the grounds of commercial confidentiality.

Issue: 14 The impact of canal restoration schemes on water resources and conservation

There are two canal restoration schemes within the catchment being developed by canal Trusts. Restoration and obtaining the water supply are the Trusts' responsibilities. Both organisations have been informed of the Agency's requirements. For the Ashby Canal, these include an investigation of the ecological impact of additional boat traffic along the canal and obtaining an appropriate licensed water supply. In the case of the Lichfield Canal they will be required to complete an impact assessment of the canal, and again to obtain a sustainable water supply.

As the work schedule and financial input is the obligation of the two Trusts involved, it is not considered appropriate for the timescale and costs to appear in this document. Any subsequent licence applications will be dealt with within the legislative framework of the Agency.



The Ashley Canal at Shackerstone

Issue: 15 Review of flood defences on the River Tame in Birmingham and the Black Country

Residential and commercial land in the floodplain of the River Tame is protected from flooding by a scheme that started in 1971. The Agency's current target standards of protection are higher than the standard set for the scheme.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
15.1 Undertake a river mathematical modelling exercise to assess the standard of protection of the existing flood defences.	EA		50	30	20				
15.2 Use the model to appraise the need for uprating the existing flood defences.	EA		0.6		0.6				
15.3 Use the model to review maintenance regime required to satisfy the design conditions and take opportunities for environmental enhancements as appropriate.	EA		0.5		0.5				
15.4 Undertake asset survey to check the structural integrity of existing flood defences.	EA		482	50	155	277			
15.5 As a result of 15.4 carry out remedial works as required.	EA	U(iii)					•	•	

The Upper Trent West Midlands Asset Survey Stage I will be undertaken in 1996/97 and will produce a preliminary report for investigative and remedial works. A Stage II report produced between 1997 and 1999 will refine the initial estimates prior to works commencing in the year 2000.

Issue: 16 Review of flood defences on the River Tame downstream of Water Orton

A recent mathematical model of the River Tame from Water Orton to the River Trent has revealed that some reaches may require new or improved flood defence works. Existing flood defences at Minworth, Water Orton, Whitacre Heath, Fazeley and Tamworth need to be checked in the light of these results and uprated where appropriate subject to cost/benefit appraisal.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
16.1 Use the recently completed mathematical model to check that existing defences are meeting acceptable standards.	EA		0.5	0.5					
16.2 Identify new flood defence works for inclusion in capital programme as required.	EA		U(iv)	•					
16.3 Undertake improvements if feasible and necessary.	EA		U		•	•			

Issue: 17 The provision of a flood warning system in the West Midlands

The setting up of a flood warning system for the West Midlands is part of legislative changes that apply to the whole country. It is part of the Agency's current workload and not appropriate for inclusion in the Tame CMP Action Plan.

Issue: 18 Flooding at Brookvale Road, Witton

Flood defence works were completed in the late 1980s but serious surface water flooding has occurred behind the defences since then. The most notable event was in September 1994 when flood water seriously affected commercial premises and led to the closure of the A4040. Flooding is caused by surface water sewers and highway drains backing up. A flood alleviation scheme is being promoted by Severn Trent Water Ltd with equal funding from the Agency and Birmingham City Council.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
18.1 Carry out surface water flood alleviation scheme.	STW Ltd	EA BCC	273	273					

Issue: 19 Lack of public access to rivers

Public access to rivers in urban areas is often poor. River and canal corridors can offer an excellent opportunity to meet the ever growing demand for attractive, safe footpaths, bridleways and cyclepaths. The Agency supports the creation of such routes, particularly the River Tame Walkway.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
19.1 Develop the Tame Walkway.									
i) Survey whole route to identify remaining obstacles and the cost of removal.	EA		5	5					
ii) Draw up design guidelines for the Tame Walkway (ie signs, stiles, gates etc).	EA	LAs	5	5					
iii) Convene meeting with all LAs and landowners to decide responsibility for overcoming all obstacles.	EA	LAs/ Land owners	R	•					
iv) Create new sections of Tame walkway as agreed.	EA	LAs	55*	5	20	20	10		
19.2 Work with LAs to develop a policy that will promote public access to urban watercourses (+).	EA LAs	Developers/ Land owners	R*	•	•				

Issue: 20 Development of river corridors in urban areas for wildlife and amenity

Watercourses and their remaining floodplains often provide important wildlife corridors and open space in urban areas. However, the wildlife value of most urban rivers has been severely damaged by land drainage works, the encroachment of development and past pollution. As pollution has been reduced, wildlife has started to move back, but is often limited by the hostile physical environment, poor channel structure and the lack of upstream sources of colonisation.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
20.1 Undertake survey work and develop programme for re-creation of river corridors.	EA	LAs	10*						
i) Identify culverts for re-opening.	EA	LAs			5				
ii) Survey main river corridor.	EA	LAs UWT			5				
20.2 Develop joint approach with LAs and other groups.									
i) Develop guidelines with LAs and developers.	EA	LAs	5	5					
ii) Formation of Urban Tame Valley Joint Working Group (+).	EA	BCC SMBC WMBC	R*	•	•				
iii) Develop joint action programme (+).	EA	BCC SMBC WMBC	R*		•	•			
20.3 Re-evaluate existing river bank maintenance on main rivers.	EA		R*	•					
20.4 Development of river corridors.									
i) Carry out pilot work in specific areas.	EA	LAs BW, GW	45*	5	10	10	10	10	
ii) Carry out tree and shrub planting.	EA	LA UFU CoCo FoM	20*			10	10		
iii) Create bankside reed areas and longer grass for water voles.	EA	LAs Land owners	10*		5	5			

The Urban Tame Valley Joint Working Group is a joint initiative with Birmingham City Council, Walsall MBC, Sandwell MBC and others (to be agreed). The intention is to look at the Tame river corridor and possibly other major tributaries and produce an agreed management plan, leading to co-ordinated action and policies for development. The group will also look at Park Hall Farm (Issue 26).

Issue: 21 Land use in middle and lower Tame valley

The Tame valley contains important sand and gravel deposits and the old flooded quarries offer excellent opportunities for recreational facilities and wildlife habitats, some of which have become nationally important. The Agency is part of a working group which aims to provide a long term strategy to direct future development and restoration to maximise the benefits for conservation and recreation, and avoid conflict between competing uses. The Tame Valley Working Group is made up of county and district councils, landowners and government agencies. It covers an area of the Tame valley from Hams Hall to Tamworth.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
21.1 Produce a non statutory land use plan to promote an integrated approach to the development of the valley.	Tame Valley Working Group	LPAs	U	•	•				

The Agency will continue to work with the Group. It is organised through North Warwickshire Borough Council.

Issue: 22 Provision of water based recreation sites

There is a large, unmet demand for water based recreation in the catchment and there is the potential for new water based recreation sites. Recreation should be developed at the most appropriate locations and conflict with nature conservation and amenity avoided.

This work will be led by other organisations and the Agency is unable to specify a timetable or actions until negotiations have taken place.

Issue: 23 The production of water level management plans for SSSIs

The Agency, district councils and British Waterways are required to produce water level management plans for water dependent SSSIs. These plans take into account the aims of all flood defence, agriculture and water resource interests and seek to further the conservation of the sites. The Agency is responsible for three sites in the catchment.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
23.1 Prepare water level management plans for Alvecote Pools, Birches Barn Meadows, Whitacre Heath SSSIs.	EA	EN	3		3				

For Alvecote Pools see also Issue 24.

Issue: 24 The adverse effect of Alvecote Pools on downstream water quality

Alvecote Pools SSSI is a series of shallow pools and marshland east of Tamworth. The River Anker flows through the pools and historically, deposited suspended solids causing siltation. The river is now scouring the deposited silt out of the pools affecting the appearance of the river as far downstream as its confluence with the River Tame at Tamworth.



Alvecote Pools, near Tamworth

Because of the sensitivity of this site and the practical difficulties associated with any remedial action to resolve what is essentially a natural phenomenon, the Agency will continue to monitor the river before deciding if any action is both practical and necessary.

Issue: 25 Protection of the water environment in Sutton Park

Several species of plants which are sensitive to high nutrient levels have become extinct in the pools of Sutton Park SSSI. Nutrients have in part come from sewer overflows and wrong connections and are now bound-up in the silt at the bottom of the pools. Recent improvements to the sewers have resulted in the closure of two overflows and reduced the input of nutrients but there are still two overflows which can discharge into the pools and blockages in sewers on the south side of the park have led recently to manhole covers lifting and sewage discharging to streams. In addition, fish and livestock may be stirring up the silt, releasing nutrients back into the water so continuing the problem.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
25.1 Institute and carry out a programme of chemical and biological monitoring on the park pools and watercourses upstream of Longmoor and Bracebridge Pools.	EA		R	•	•				
25.2 Review options for sewerage infrastructure along west and south side of park to reduce overflows. (Possible inclusion in AMP3).	STW Ltd.	BCC EA	U	•	•				
25.3 Investigate fisheries status of the pools.	EA		5	2.5	2.5				
25.4 Carry out feasibility study on construction of silt traps/settling pools on all surface water inflows to the park.	BCC		U		•				
25.5 Investigate methods for nutrient removal from pools.	EA BCC	EN	U			•			
25.6 Write water level management plan.	BCC	EN	U		•				

Issue: 26 The future management of Park Hall Farm

The Agency owns 200 hectares of land at Park Hall Farm between Castle Vale and Castle Bromwich, alongside the River Tame. It is mainly wet floodplain meadow with ponds and wetlands. It was brought for a flood defence scheme but is no longer required for that purpose. Surveys have shown that the site is important for birds and invertebrates. It is also an important potential recreational resource.

It is proposed that the land remains in the ownership of the Agency for the time being.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
26.1 Assess Tame flood model for implications for the future management of the site.	EA		R		•				
26.2 Undertake detailed habitat and wildlife survey.	EA		10			10			
26.3 Develop a management strategy to include development of the Tame walkway (+).	EA	BCC & Others	U			•	•		
26.4 Implement strategy.	EA	Others	U				•	•	

26.1 See Issue 15.

26.3 Part of the work of the Urban Tame Valley Joint Working Group (see 20.2(ii)).

Issue: 27 Control of invasive plants in the catchment

Three very invasive weed species grow in the catchment; Giant Hogweed, Japanese Knotweed and Himalayan Balsam. All three species suppress other vegetation and can thus cause erosion in winter when these plants die back. Giant Hogweed also causes intense skin rashes if touched.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/97	1997/98	1998/99	1999/2000	2000/01	FUTURE
	LEAD	OTHER							
27.1 River inspectors to map areas colonised by Japanese knotweed and Giant Hogweed.	EA		R	•	•				
27.2 Discuss control with LAs when size of problem is known.	EA	LAs	R		•				
27.3 Co-ordinate and undertake spraying programme.	EA LAs Land owners		U		•	•			

Issue: 28 Weed growth in the River Anker

The River Anker is affected by heavy weed growth during the summer. This covers the surface of the water and makes fishing difficult. The excessive weed growth may be exacerbated by nutrient input from Hartshill and Polesworth sewage treatment plants and the lack of tree cover allowing more sunlight to reach the surface of the river.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
28.1 Provide shade by planting trees where possible on south side of river from Atherstone to Alvecote Pools.	EA		30		10	10	10		

The River Anker is not a source of public water supply so the environmental quality standards for nitrates under the EC Nitrates Directive does not apply. Nutrient stripping at the sewage plants could not be imposed by the Agency.

Weed growth on the river does not adversely affect its flood defence characteristics and therefore removal of weed by the Agency cannot be justified.

Issue: 29 Spread of Zander

Zander are large predatory fish introduced from Europe. They are now present in the Coventry, Ashby and the Birmingham and Fazeley Canals, and have been reported in the River Anker. They are considered to be an unwelcome predator and there are concerns about their effect on coarse fish numbers. British Waterways are studying them to help design a control programme.

ACTIONS	RESPONSIBILITY		TOTAL COST (£K)	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	FUTURE
	LEAD	OTHER							
29.1 Participate in a study initiated by British Waterways.	EA	BW	2.4*	1.2	1.2				

tame
catchment

Future Review and Monitoring



The River Tame upstream of Bentley Mill, Walsall

The Agency will be jointly responsible, with other identified organisations and individuals, for implementing this Action Plan. Progress will be monitored and reported annually by the Agency to all the key partners and other interested parties. The first Annual Review is due at the end of November 1997. The area will be re-visited as a LEAP within the next five years.

The Annual Review will take the form of a short progress report and will:-

- Examine the need to update the Catchment Management Plan in the light of changes in the catchment.
- Compare actual progress with planned progress, and explain the reason for any changes to the content or timing of individual actions.
- Report on other matters, including any legislative and classification scheme changes, affecting the Catchment Management Plan.
- Roll forward the detailed activity plans.

future
review

Appendix 1

List of Organisations and Individuals Who Made Written Responses to the Consultation Report

Ms A Agarwal
Mr M A Arnold
Mr R Biggs
Mrs J Blackham
Councillor J Bltyh
Ms A Bottrill
Ms E Brewan
Mr A F Cook
Mr A Cross
Ms B Cumbling
Mr A Elferink
Mr S Fletcher
Mr T Glasgow MBE
Councillor J Haden
Mr V Hadley
Councillor P A S Hall
Mrs A Hand
Mr C Harper
Mr G W Hart OBE JP
Mr W S Hickie
Mr J D Holder
Mr F S Hopkins
Mr M Howell-Jones
Mr J Humphries
Mr A N Huskins
Mr R Ilsley
Mrs R Jackson
Ms V Jones
Mr J T Jordan
Mr W A Lane
Mr R Leah
Mr J Leonard
Mr P Lewis
Mr W J Matthews
Mr A F Meighan
Mr D E Moreton
Mr D J Morris
Mr A Morton
Mr G Owen
Mr A D Payne
Ms E Reed
Mr H Reeves
Mr P Stanley
Mr P Swallow
Mrs S Thomson
Mr N S Tulloch
Mrs C Upton
Mr C Webb
Mrs E E Williams
Mr J E Wood
Mr J Wragg
ARC Central
Ashby Canal Restoration Project
Association of Birmingham Conservation Groups
Atherstone Town Council
Birmingham City Council
Borough of Tamworth
Bourn Brook Valley Conservation Group
British Canoe Union
British Coal Corporation
British Water Ski Federation
British Waterways
Carlton Parish Council
Castle Vale School
Countryside Commission
Council for the Protection of Rural England
English Heritage
English Nature
Forestry Authority
Friends of the Earth, Birmingham
Friends of the Earth, Wolverhampton
Groundwork Birmingham
Highways Agency
Hinckley & Bosworth Borough Council
Lapal Canal Trust
Leicestershire County Council
Lichfield District Council
Mancetter Parish Council
Market Bosworth Parish Council
Ministry of Agriculture, Fisheries and Food
National Association of Boat Owners
National Farmers Union- Lichfield, Rugeley & Tamworth Groups
National Farmers Union, West Midlands Region
New Hall Mill Trust
North Warwickshire Borough Council
Nuneaton and Bedworth Borough Council
Redland Aggregates
Royal Sutton Coldfield Canoe Club
Saltwells Local Nature Reserve
Sandwell Metropolitan Borough Council
Save Handsworth Park
Severn Trent Water Ltd
South Staffordshire Water Plc
Sports Council
Staffordshire County Council
Stoke Golding Parish Council
Suffield Lodge Angling Club
Tamworth Borough Council
The Confederation of United Kingdom Coal Producers
The Inland Waterways Association
The National Forest
The National Trust
Urban Wildlife Trust
Walsall Metropolitan Borough Council
Warwickshire and West Midlands Metropolitan County Association of Parish Councils
Warwickshire Wildlife Trust
West Midlands Bird Club
West Midlands Joint Data Team (Archaeology)
Wolverhampton Metropolitan Borough Council

In addition there were a number of anonymous responses through questionnaires.

Appendix 2


Amendments to the Consultation Report

Section	Issue or sub-section	Error or omission	Raised by
3	5	The River Quality Objectives quoted in Issue 5 and in Table 6 are different. Those in the issue are the correct ones.	Staffordshire County Council
3	6	Oldbury STP was closed in December 1995.	Severn Trent Water
3	7	The Gower Branch Canal as a whole is not derelict and connects the old and new main lines of the Birmingham Canal. The proposed action has been deleted.	The Inland Waterways Association
4	4.2	References to planning guidance on nature conservation was omitted, specifically PPG9. Black Country Nature Conservation Strategies were also omitted.	Urban Wildlife Trust
5	5.1	The Highways Agency only monitors the use of de-icers on trunk roads.	Highways Agency
5	5.1	Sandwell UDP was adopted in January 1995.	Sandwell MBC
5	5.15	The comments on the establishment of the National Forest and the breadth of its objectives were misleading. The National Forest's evolution began in 1987, before the Rio Summit. Its objectives are wider than carbon dioxide reduction and landscape improvement, and include sport, tourism, recreation, access, nature conservation, economic regeneration, agriculture and community involvement.	The National Forest
5	5.4	The first paragraph relates to the potential effects of coal mining operations rather than mineral extraction as referred to in the text.	Redland Aggregates
5	5.5	Text states that "landfill sites cause water pollution". The Agency and Waste Planning Authorities aim to ensure that this does not occur and more appropriate text would be "landfill sites can cause water pollution".	Leicestershire County Council
5	Map 16	Swan Pool and the Swag SSSI and Rough Wood Edge SSSI are incorrectly labelled.	English Nature
5	Map 17	Bosworth Water Park was omitted.	Leicestershire County Council
5	Map 19	Three mineral extraction sites were omitted from the plan. Coalfield North, Ibstock; Butterfly Bricks, Heather and clay extraction at Ellistown.	Leicestershire County Council

Appendix 3 – Glossary

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.
Aesthetic	Beauty and taste.
AMP2/AMP3	Asset Management Plan 2 produced by the Water Companies for the Office of Water Services (Ofwat). It sets out the water industry investment programme for the period 1995 to 2000. AMP3 will set out the water industry investment following the completion of AMP2.
Aquifer	A porous water-bearing underground layer of rock, sand or gravel capable of holding significant quantities of water.
Biodiversity	The diversity of life.
Borehole	A well sunk into a water bearing rock from which water will be pumped.
Catchment	The total area from which a single river collects surface run-off.
Coarse Fish	Freshwater fish other than salmon and trout.
Confluence	The point at which two rivers meet.
Conurbation	A large urban area made up of a number of towns or cities.
CSO	Combined Sewer Overflow.
Culvert	Channel carrying water.
De-oxygenation	Removal of oxygen.
Discharge Consent	A licence granted by the Environment Agency to discharge effluent of specified quality and volume. Statutory; Schedule 10 Water Resources Act 1991.
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.
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.
Floodplain	Land adjacent to a watercourse that is subject to flooding.
GQA	General Quality Assessment. A national water quality assessment scheme.
Groundwater	Water which flows or is stored below the surface of the land.
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.





Invertebrates	Animal life that does not have a backbone.
Landfill	Site used for waste disposal into/onto land.
Leachate	Liquid formed when water reacts with, or leaches from, waste material.
m³/d	Cubic metres per day
mg/l	Milligrammes per litre.
MI/d	Megalitres per day. One megalitre is equal to 1 million litres or approximately 220,000 gallons.
Nutrient	A chemical essential for life.
Ofwat	Office of Water Services.
Ordinary Watercourse	A watercourse that does not form part of a Main River.
Potable Water	Water of a quality suitable for drinking.
RE	River Ecosystem. Classification used to measure water quality.
Recharge	Water which percolates downward from the surface into groundwater.
Remediation	Clean up a site or contain pollutants (associated with redevelopment).
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.
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.
Soakaway	System for allowing water or effluent to soak into ground.
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.
STP	Sewage Treatment Plant.
Surface Water	Water which flows or is stored on the ground surface.
Swale	System for allowing surface water to soak into the ground.
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.
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 wet habitats.

MANAGEMENT AND CONTACTS:

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

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

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

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