

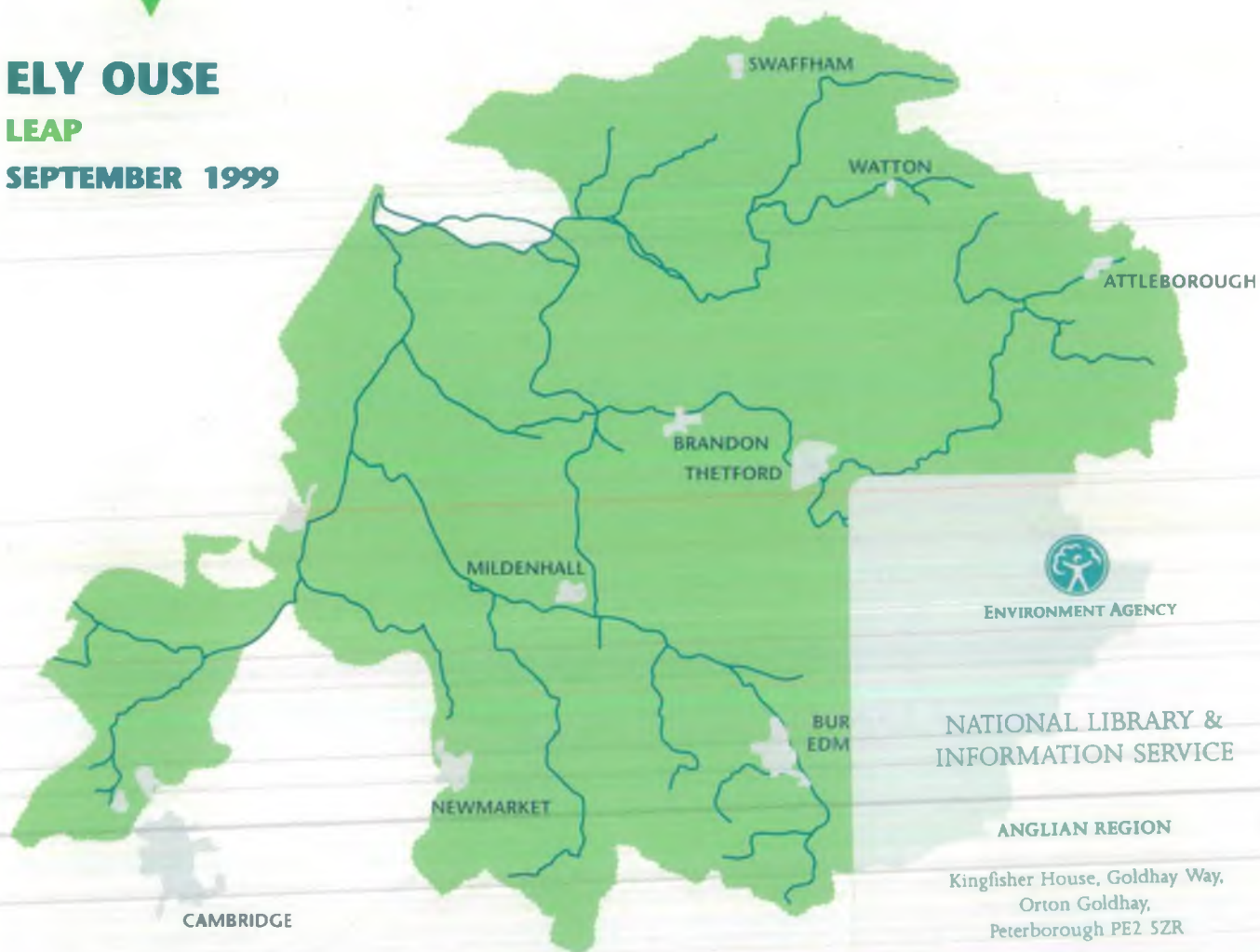
EA-Anglian LEAP, Box 6

local environment agency plan

ELY OUSE

LEAP

SEPTEMBER 1999



ENVIRONMENT AGENCY

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ENVIRONMENT
AGENCY

KEY FACTS AND STATISTICS

Total Area: 2510 km²

Environment Agency Organisation: Anglian Region (Central Area): Area office at Brampton and District Office (North) at Ely

Geology: Eastern upland: Boulder Clay on chalk; Central upland: Chalk outcrop; Fen Areas: Clays with fen deposits and some Woburn Sands outcrops

Main Towns: Bury St Edmunds, Newmarket, Ely, Swaffham, Thetford, Mildenhall, Brandon, Watton

County Councils: Cambridgeshire 17%, Norfolk 43%, Suffolk 40%

District & Borough Councils: Babergh, Breckland, East Cambs, Forest Heath, Kings Lynn and West Norfolk, Mid Suffolk, St Edmundsbury, South Cambs, South Norfolk

Water Utility Companies: Anglian Water Services Limited, Cambridge Water Company, Essex & Suffolk Water Company (In addition there are a number of areas which receive no mains supply and rely on private supply boreholes)

Internal Drainage Boards: Burnt Fen, Cawdle Fen, East Harling, Haddenham Level, Lakenheath Fen, Littleport and Downham, Mildenhall, Middle Fen and Mere, Northwold, Old West, Padnal and Waterden, Southery and District, Stoke Ferry, Stringside

Length of statutory main river: 407.3 km

Embanked main river: 161 km

Area protected by embanked channel: 495 km²

Area of natural floodplain: 71 km²

Length of navigable river: 103.3 km

Length of footpaths: 92 km

Length of bridleways: 55 km

Game (trout) fishery: 106 km

Cyprinid (coarse) fishery: 227 km

No. of operational waste sites: 58

No. of non-operational waste sites: 6

No. of waste sites with licence surrendered: 3

Sites of Special Scientific Interest (SSSIs): 78

Water dependent SSSIs: 39

Special Areas of Conservation (SAC): 4

Special Protection Areas (SPA): 2

County Wildlife Sites (CWS): 500 (approx)

Scheduled Ancient Monuments (SAM): 182

Sewage Treatment Works (STW): 99

Nitrate Vulnerable Zones (NVZ): 3

Licensed Abstractions: 1167

(For information on Licences of Right, see 'Summary of Water Resources Status' in Section 2.1.4)

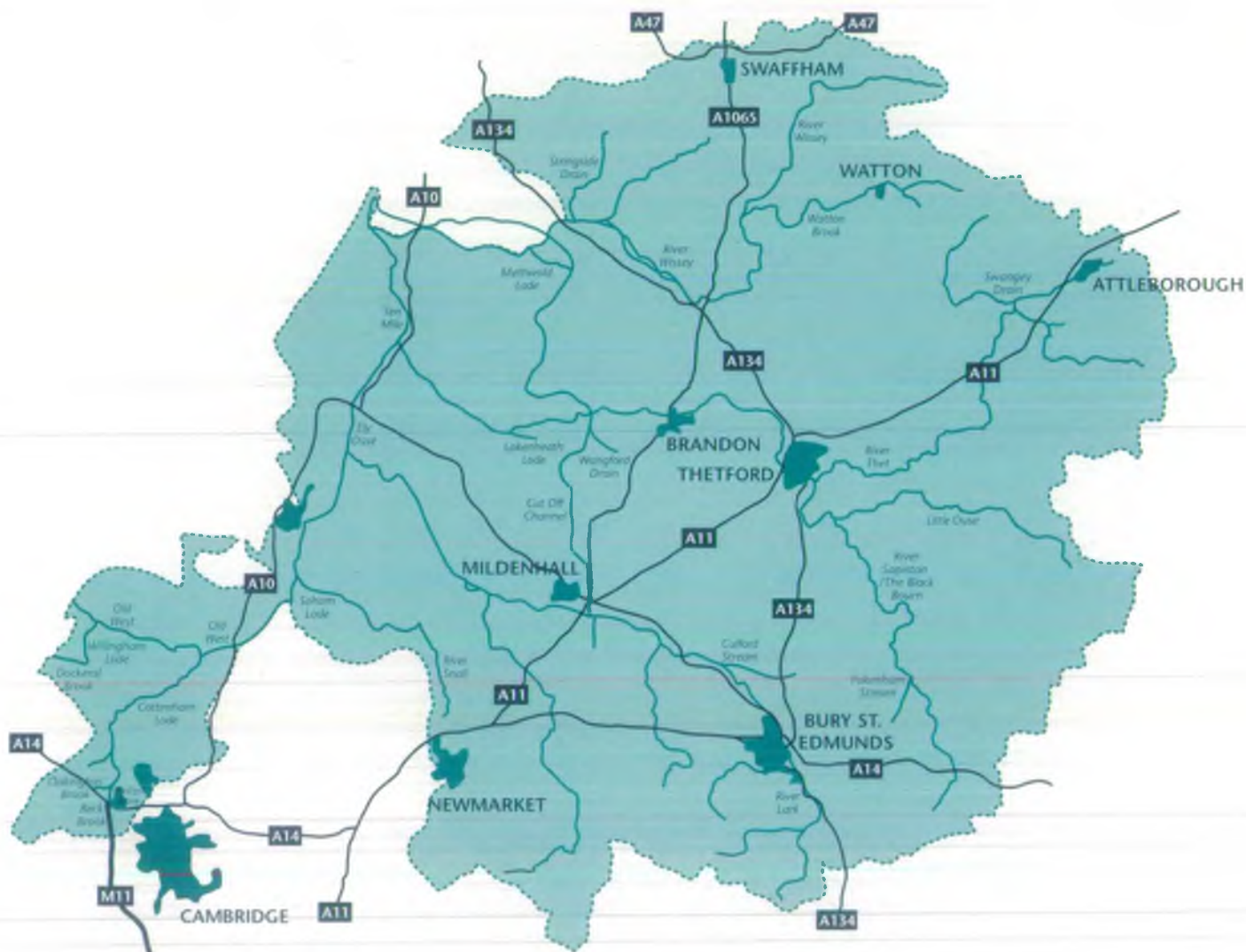
Integrated Pollution Control (IPC) Sites: 9

Radioactive Substances (RAS) Sites: 9

'Natural and Character' Area : The map 'The Character of England; Landscape Wildlife and Natural Features' produced in 1997 depicts the natural and cultural dimensions of our landscape. Drawn up by the Countryside Commission and English Nature (EN) with the help of English Heritage, this framework is intended for those organisations with an interest in wildlife and landscape whereby issues affecting our natural heritage can be strategically assessed in a single framework. Both the character and natural areas are described and tabulated 2.1.6 Aesthetic Quality.

PLAN AREA

Map 1: Plan Area



- Plan Boundary
- Main River
- Principal Road



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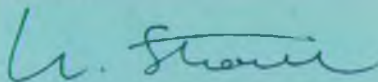
FOREWORD

The Environment Agency is one of the most powerful environmental regulators in the world. By combining the regulation of air, land and water we have a unique opportunity to look at the environment in an integrated way.

This Local Environment Agency Plan (LEAP) sets out a vision for the environmental quality of the Ely Ouse area and how this vision may be achieved through appropriate management and partnerships. LEAPs are the cornerstone to how the Agency plans its business and are therefore strategic documents that will deliver real environmental improvements at a local level.

We would like to thank all the individuals and organisations that responded during the consultation period and hope that the importance we place on partnerships is recognised by all those involved. Overall the feedback on the Draft LEAP was both encouraging and positive and has helped to develop this much-improved LEAP.

We hope you will find this document a useful and informative read and look forward to working together to make this plan a reality.

A handwritten signature in dark ink, appearing to read 'K. Stonell', written in a cursive style.

Keith Stonell
Central Area Manager

EXECUTIVE SUMMARY

This LEAP concentrates on the actions required to enhance the local environment and describes the work that the Agency and others will undertake to maintain and enhance the environment over the next five years. The issues identified were developed following a public consultation exercise.

Issues Facing This Area

The following gives a brief description of the activity plans covered in Chapter Three: Issues and Options. Other longer-term strategic environmental issues are covered in Section Four: A Better Environment Through Partnership.

MANAGING WASTE

Leachate generated by the decomposition of waste in landfill sites has the potential to contaminate ground and surface waters. Landfill gas, consisting largely of methane and carbon dioxide, is produced by the anaerobic decomposition of wastes and can migrate underground to adjacent properties. These by-products are more likely to be of concern at closed sites or older parts of current sites that were not controlled as stringently as they are today and where no containment procedures were used.

MANAGING OUR WATER RESOURCES

We seek to manage water resources in a sustainable manner to balance the needs of the environment with the need of abstractors. We monitor river flows, groundwater levels, rainfall and climate to assess the available water resource. We issue abstraction licences if there is sufficient water available, the need for water is justified, all rights of existing users are protected and the water environment (rivers and wetlands) is not unacceptably affected.

DELIVERING INTEGRATED RIVER BASIN MANAGEMENT

Integrated river basin management is the need to look at the river corridor habitats as a single entity, through an integrated approach, rather than looking at individual uses or users in isolation with the aim of balancing conflicting needs. Within the context of this LEAP it includes water quality problems, the operation and management of the Cut Off Channel and Denver Sluice and flood warning.

CONSERVING THE LAND

Land use is the single most important influence on the environment and land use change can have beneficial or detrimental implications for the environment. We have a responsibility to protect and enhance the environment, however, we have limited control over the way land is developed.

We are concerned in this area over the maintenance of privately owned flood defence structures and flood defence standards in areas that are not under our direct control.

MANAGING OUR FRESHWATER FISHERIES

We will strive to maintain and improve the quality of a river's fisheries by effective regulation and enforcement and will measure our success by a commitment to a five-year rolling programme of survey work. Failure to achieve thriving fish populations will be investigated and where possible ameliorated.

ENHANCING BIODIVERSITY

Biodiversity, the variety of life on Earth, is thought to be declining at an alarming rate. In the UK alone, more than 100 species are believed to have become extinct this century. Biodiversity will be a key indicator of the successful implementation of sustainable development in a plan area. We are not only interested in the requirement to improve habitat diversity and species richness but the water requirement of the environment to maintain and enhance them.

ENVIRONMENT AGENCY



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VISION

Most societies want to achieve economic development to secure a better quality of life, now and in the future, whilst still protecting the environment. The concept of sustainable development, allied to precautionary principles, tries to reconcile these two objectives - *meeting the needs of the present without compromising the ability of future generations to meet their own needs*. We are working towards making this concept a reality without jeopardising the economic livelihoods of local communities.

We take an holistic approach to the protection and enhancement of the environment. This is achieved through our activities with others to optimise the benefit to the environment as a whole. Where possible we always take into account the effects across and within land, air and water.

In the long-term, over the next 20 years, the Vision encompasses:

- Developing partnerships with, for example, agriculture, industry, local authorities, environmental groups and educational establishments.
- Regulating the movement, treatment, storage and disposal of controlled wastes to protect and enhance the environment by setting and enforcing consistent standards for waste management practice.
- Managing water resources in a sustainable way to balance the needs of the water environment with the requirements to abstract water for domestic supply, agriculture and industry.
- Realising opportunities to improve the biodiversity/conservation value of the plan area with particular respect to river corridors and floodplains.
- Maintaining and if necessary and viable improving flood protection along all main rivers.
- Working towards an overall improvement in the quality of air through liaison with local authorities, effective regulation and the implementation of the UK Air Quality Strategy.

In the short-term, over the next five years, the Vision encompasses:

- Realising opportunities for an improvement in water quality, particularly where targets are not presently being met, eg, Little Ouse (Botesdale to Blo Norton Ford stretch).
- Realising opportunities for recreational activities such as navigation, eg, working with the Fenland Waterway Regeneration Strategy group.
- Achieving improved fish stocks through better management, eg, the prevention of fish mortalities at Blackdyke and meeting fish biomass targets in the River Thet and River Little Ouse.
- Assessing flood risk areas and providing an effective flood warning system.
- Encouraging sustainable solutions that improve waste management, particularly with respect to landfill gases and leachate.

The successful future management of the LEAP area requires the Agency to effectively respond to changing and increasing pressures exerted on the environment of the Ely Ouse and to target resources where they are most needed.

It is through establishing strong links with local authorities and communities, working together with industry and agriculture and increasing public awareness of the need to protect our environment that this Vision will become a reality.

BACKGROUND

Local Environment Agency Planning is a process through which we are able to identify environmental problems and issues in a given area. To encourage interested parties to become involved in this process a Draft Local Environment Agency Plan (LEAP) is produced. It is prepared as a basis for open consultation and discussion both internally and externally. To facilitate feedback this document was widely circulated (approximately 300 copies were distributed externally) and promoted via items in local newspapers and local authority offices.

After the consultation period (which lasted three months) the responses were analysed and a Statement on Public Consultation and this LEAP were produced.

We value public consultation as it enables us to gain a better appreciation of different views on the environmental issues identified. A summary of the 47 responses received during the consultation period is found in the 'Statement of Consultation' (September 1999). This document identifies the main components and views of the consultees and our responses to the remarks made. The Statement of Consultation was sent to all consultees who made a formal response.

The overall numbers of responses given on a particular issue are given in Table 1 below. A list of organisations and individuals that responded to the Draft LEAP are listed in Appendix 5.

Overall it was well received with many comments congratulating us on its presentation and plain English. The key messages coming through in the responses included:

- No consideration was given to the impact of the LEAP actions on the local economy – particularly agriculture. (This has been addressed by including 2.1.7 Socio-economic Considerations.)
- Concern over water resource issues for nature, abstractors and increases in development. (These concerns were highlighted in the Draft LEAP and have remained as issues in the final LEAP.)

The Draft LEAP identified 26 issues; due to the consultation process 18 issues have been brought forward into the LEAP and one new issue has been identified. Issues have been excluded for the reasons outlined in the table below.

Table 1: LEAP and Draft LEAP Issues

LEAP No.	Draft LEAP No.	Issue Title (New Issue Title)	No. of Responses	Notes
2	1	Transfer Of Water From The Major Watercourses Into IDB Drains Via 'Slackers' Is Not Controlled By The Water Resources Act.	12	
3	2	Future Growth In Abstraction Demand Cannot Be Met From Groundwater Or Summer Service Waters.	22	
4	3	The Surface Water Resources Are Considered Fully Committed For The South Level.	8	
	4	Contamination By Nitrates.	12	Included in Issue7
	5	Historic Groundwater Contamination At RAF Mildenhall.	3	Included in Issue7
	6	Historic Groundwater Contamination At RAF Lakenheath.	3	Included in Issue7
5	7	Identification And Remediation Of Contaminated Land And Groundwater.	7	
14	8	Need To Quantify The 'In-River Needs' And Define The Minimal Acceptable Flows.	13	
15	9	Management of Water Resources to Protect Wetlands (A Better Understanding of the Water Requirements of the Environment is Needed.)	14	

BACKGROUND

LEAP No.	Draft LEAP No.	Issue Title (New Issue Title)	No. of Responses	Notes
16	10	Requirement To Improve Habitat Diversity Within Rivers And Their Floodplains.	16	
17	11	There Is A Need To Assess And, Where Appropriate, Protect The Ecological Status Of Headwaters.	8	
18	12	The Extent Of Spread Of Invasive Plants Is Unknown And Therefore Of Concern.	8	
13	13	Investigate And Where Possible, Ameliorate Failures In Fish Biomass Targets. (Fish Biomass Targets Are Not Being Met.)	6	
6	14	A Number Of River Stretches Fail To Meet Their River Ecosystem Classification Target.	9	
7	15	Operation And Management Of The Cut Off Channel. (River Little Ouse To Denver.)	4	
	16	Operation And Management Of The Cut Off Channel. (River Lark To Little Ouse.)	8	
8	17	Operation And Management Of Denver Sluice.	13	
9	18	Eutrophication Of Soham Lode, River Lark, Little Ouse And Cut Off Channel.	10	
	19	Unsewered Areas.	6	Included in A Better Environment Through Partnership
10	20	Provide An Effective Flood Warning System For Flood Risk Areas. (Flood Warning System Targets Are Not Being Met For Flood Risk Areas.)	5	
	21	Concern That Navigation Needs To Be Restored And Improved.	13	Included in A Better Environment Through Partnership
	22	Concern Over The Impact Of Recreational Activities On Wildlife.	8	Included in A Better Environment Through Partnership
11	23	Concern Over The Maintenance And Operation Of Privately Owned Flood Defence Structures.	5	
	24	Impact Of Agriculture On Nitrogen Enrichment In Nitrate Vulnerable Zones.	8	Routine Work
1	25	Potential Impacts On The Environment From Contamination Originating From Old Landfill Sites. (Potential Impacts On The Environment From Contamination Originating From Landfill Sites.)	4	
	26	Need To Improve Quality Of Information And Regulation Of The Land Spreading Of Wastes.	3	Routine Work
12		Insufficient Discharge Capacity In The River Wissey.		New Issue

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Acknowledgements

We would like to thank all those Agency staff who invested many hours of hard work to create this plan, the members of the Great Ouse Area Environment Group who made an important contribution to the process and the organisations and individuals who comment on the Draft LEAP.

1.0 THE ENVIRONMENT AGENCY

1.0 Local Environment Agency Plans

'Guardians of the Environment'

The Environment Agency came into being on 1 April 1996 to protect, monitor and improve the environment in its broadest sense - ultimately contributing to the world-wide goal of sustainable development. We have become one of the most powerful environmental regulators in the world. By exerting our influence on the regulation of air, land and water, we have a unique opportunity to look at our environment in an integrated and holistic manner.

Our Vision is

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

Our aims are:

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

We will do this by:

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

The Environment Agency was formed in April 1996. It has a wide range of duties and powers relating to different aspects of environmental management. It is required and guided by Government to use these duties and powers in order to help achieve the objectives of sustainable development. The Brundtland Commission defined sustainable development as '....development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

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

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

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

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

We also have to work in a wider international context because it is now generally accepted that environmental changes are occurring on a global scale. Individual countries contribute to these changes but respond to them in different ways. Our long-term strategy therefore has to reflect these global issues, and it has to be delivered within the

1.0 THE ENVIRONMENT AGENCY

framework of international and national commitments that has been developed to address them.

Perhaps the most important international issue is that of climatic change. The UK is - like all nations - a contributor to the global emissions into the atmosphere of gases, such as carbon dioxide, which are believed to contribute to long-term climatic changes. The UK is likely to be affected in complex ways as, when and if the climate does change. It is therefore a signatory to the Framework Convention on Climate Change (as agreed at the Rio 'Earth Summit' in 1992), and is taking an active part in international negotiations to obtain commitments beyond 2000 for credible, effective and achievable reductions of greenhouse gas emissions.

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

We are committed to a programme of LEAPs in order to produce a local agenda of integrated action for environmental improvements. These LEAPs will also allow us to deploy our resources to best effect and optimise benefit for the local environment.

1.1 Local Environment Agency Plans

We are committed to delivering environmental improvement at the local level and one of the ways to do this will be through LEAPs. These plans will reflect our close contact with industry, the public and local government and will contribute towards achieving sustainable development.

The process of drawing up the plans will involve close consultation with all interested parties. It will promote the effective, accountable and integrated delivery of environmental improvement at the local level. The plans will translate policy and strategy into delivery on the ground and will result in

actions, either for the Agency to fulfil, or for others to undertake through influence and partnership. We believe that the process will benefit local communities by influencing and advising external decision-makers and public opinion. It will build trust by being open and frank when dealing with all issues.

Nationally, we will complete all Consultation Documents by the end of 1999. All of the Final Plans will be published by the end of 2000.

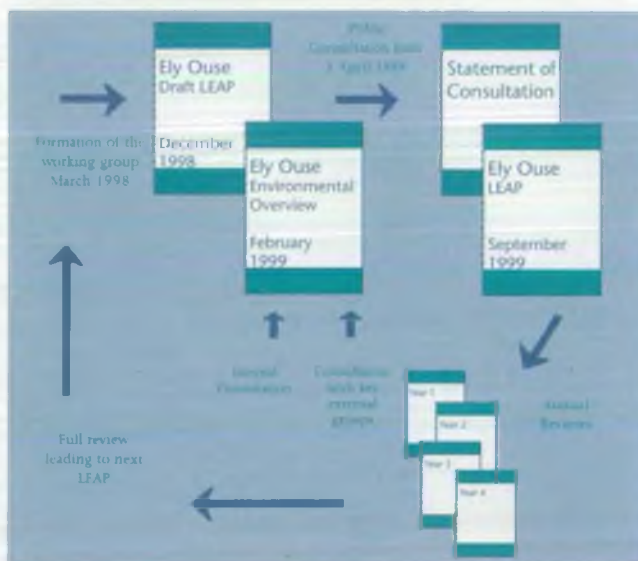
1.2 The LEAPs Process

It is the duty of the Agency to assess the allocation of all natural resources, within the land, air and water environments, which are in demand from many potential users.

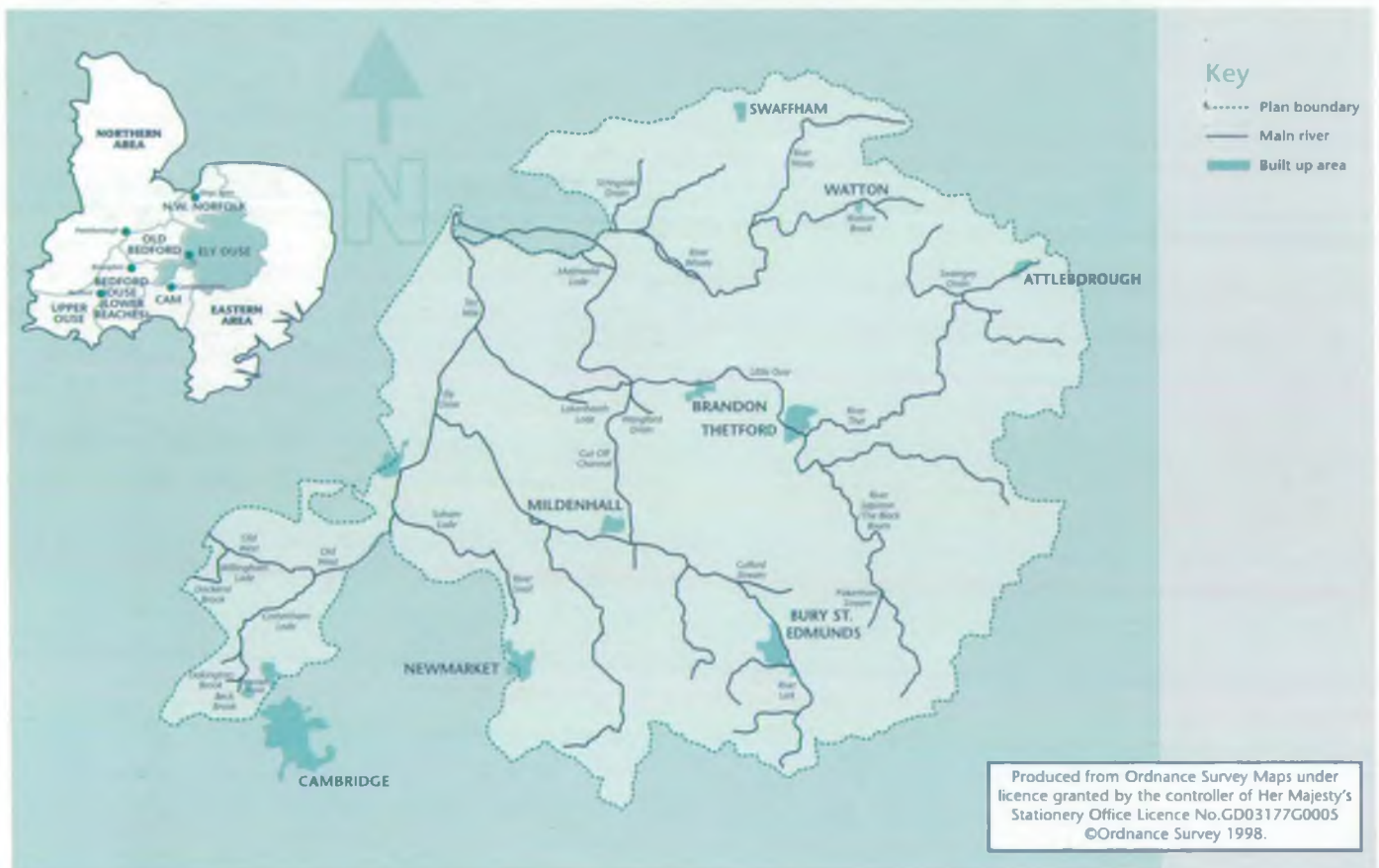
LEAPs are published by the Agency to draw together aspects of environmental management and planning as part of the ongoing dialogue between ourselves and other organisations/people involved in the protection and management of the environment. They contribute directly to our aims as described in Section 3.0. LEAPs build on the former National Rivers Authority's (NRA) Catchment Management Planning initiative - addressing the integrated management of land and air as well as the water environment. Catchment Management Plans (CMPs) will co-exist with LEAPs until such time that they are updated to address all of the Agency's responsibilities.

This is one of six LEAPs in the Central Area (refer to Map 2). In line with the National target, public consultation on five Documents has been completed and we have produced four Final Plans in this area.

Figure 1: The Ely Ouse LEAP Process



1.0 THE ENVIRONMENT AGENCY



Map 2: Local Environment Agency Plan

1.3 Environmental Education Strategy

Education has to be a priority if sustainable environmental improvements are to be achieved. With this in mind we published our own education strategy, 'Green Shoots', in January 1997. In the long-term, education on environmental issues could ease the regulatory burden and associated costs.

Our education programmes are to be aimed at those working in education, industry and the community at large. The strategy acknowledges that environmental improvement and sustainable development can only be achieved with the involvement of society as a whole. It also recognises the need to share expertise and resources with other organisations in collaborative ventures in order to develop a more responsible and environmentally-aware society. It contains six objectives, which are:

- to build positive partnerships;
- to help educate young people;
- to improve the understanding of environmental issues through such schemes as work placements;
- to work with industry to promote the prevention of pollution;

- to foster public awareness of environmental issues; and
- to build on current, and develop new, international relationships to further sustainable development.

The focus for action is on youth and partnership. The plan will not be to use such media as schools packs and talks, but rather to focus on more innovative and empowering activities. These will include, for example, the CREST Award Scheme - Environment Research Challenge (project-based research on real issues for the 11-18+ group), schools conferences to elicit potential answers for the future based on current environmental issues and 'hands-on' projects to restore and maintain environmentally damaged areas (with youth clubs). The programme for future years will build upon these initiatives to help deliver the other objectives, but the focus will change year-on-year.

This will not be an easy task, nor one achieved by the Agency alone. We do, however, have various opportunities to exploit, particularly where LEAPs provide local focus. The concept of educating by empowering people to make choices is both valuable and under-used. Our plans, Local Agenda 21 and other such avenues will be fully exploited in the future.

2.0 THE ELY OUSE AREA

2.0 The Ely Ouse Area

The Ely Ouse LEAP area is a combination of seventeen sub-catchments covering 2510 km², which reflects the diversity of topography. Extensive road and rail networks can be found throughout the LEAP area.

The upland areas (75% of the total area) are drained by natural rivers and streams. Man has modified the lowland drainage systems over centuries to provide flood protection for land up to seven metres below normal high tide level.

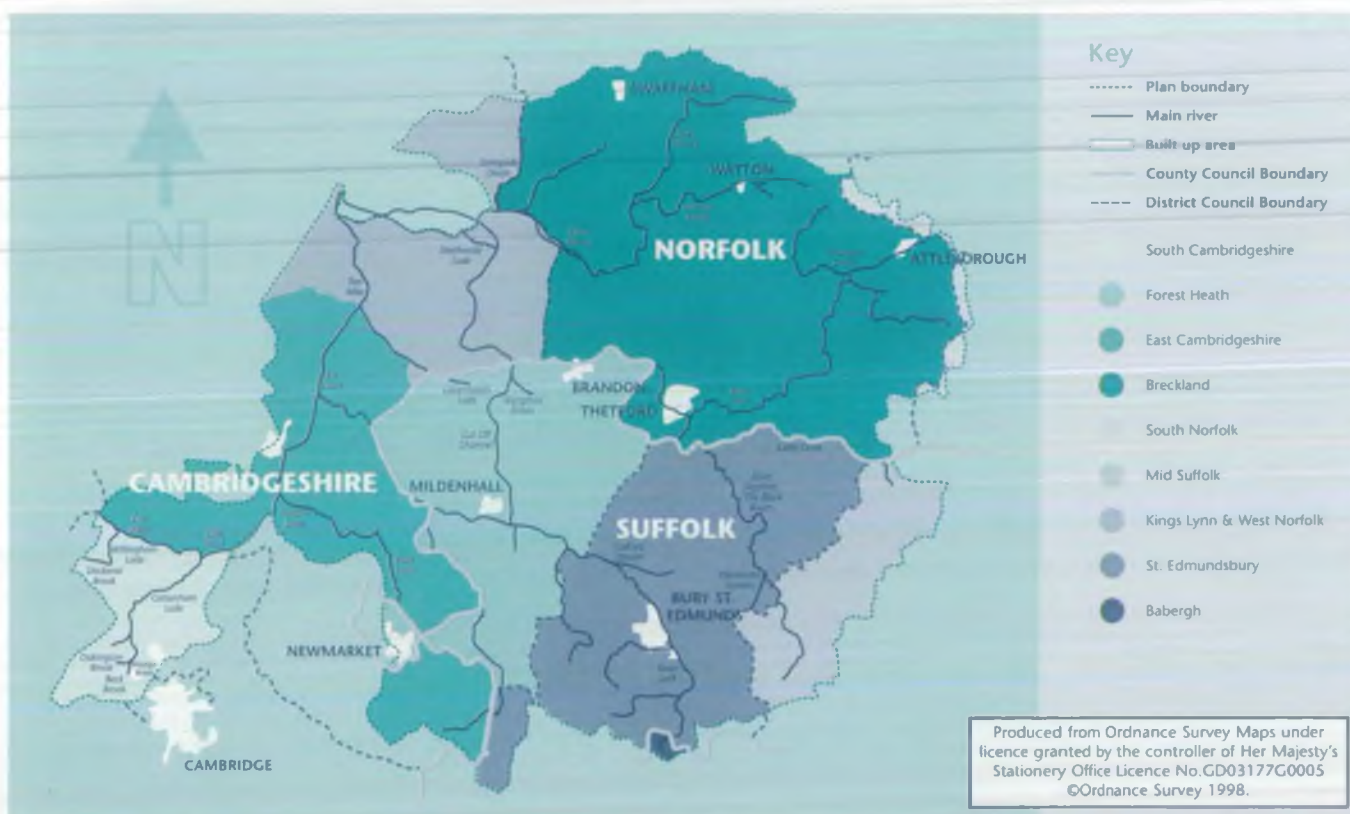
The Ely Ouse River flows south to north, with the tributaries flowing in from the south and east. The total length of designated Main River is 407 km, of which 161 km are embanked. The area protected by embanked channels is 495 km², with a further 71 km² of natural floodplain. The Ely Ouse and its tributaries are navigable for a length of 103 km.

The east boundary denotes the watershed of the upland rivers and streams. To the west it is a combination of the South Level Barrier Bank alongside the Hundred Foot River, and the hydrological boundary of the Littleport and Downham Internal Drainage Board (IDB). The Denver Complex provides the northern discharge point whilst balancing the outflow to the tidal river and transferring raw water via the Cut Off Channel to Essex. To the south, Hermitage Lock controls inflow from the Bedford Ouse system to the Old



West River, whilst the River Cam flows into the area at Stretham. Although Hermitage Lock is primarily a navigation structure it has the facility to transfer water into the Old West River through slackers, these are used to augment river levels in order to maintain navigational depth. Consequently, throughout the lowland area, river levels are controlled by the sluices at Denver giving rise to operational and environmental impacts throughout the seasons.

The Ely Ouse LEAP area includes the settlements of Bury St Edmunds, Newmarket, Thetford, Ely and Mildenhall and the catchment area of the rivers Wissey, Lark, Little Ouse and their associated tributaries. Norfolk and Suffolk make up the majority of the area, but a part of Cambridgeshire is also represented (refer to Map 3).



Map 3: Local Authorities

2.0 THE ELY OUSE AREA

Within this area, river valleys are an important feature of the landscape. This is particularly true in the fenland areas where the embanked watercourses, often with associated washlands, offer a sharp contrast between the intensive arable agriculture of the fen and the more 'wild' appearance of the grazed areas adjacent to the river.

The fen area is dominated by Ely and in particular by Ely Cathedral, which is visible from a large part of this low-lying area and is known as the 'Ship of the Fens'.



The Fenland is the largest area of uninterrupted wetland in England and has been occupied for more than 6,000 years. With its ancient buried landscapes and the dense occupation of the fen edge in prehistoric and Roman times, the area is of great archaeological significance.

On its eastern edge, much of the fen is bounded by the Brecklands (also known as the Brecks), a designated Environmentally Sensitive Area (ESA). The Brecks, characterised by their light, free-draining, sandy soils and forestry interests, also contain a significant number of important sites for nature conservation. The Brecks, also, are very rich in sites of archaeological importance.

The soil is Grade 1, 2, 3 and 4 farmland, and the predominant land use is agriculture, with arable farming dominating in the fen areas. The area of urbanisation is comparatively small with only five towns with populations over 10,000 (Ely, Newmarket, Bury St Edmunds, Thetford and Mildenhall). Thetford Forest is Britain's largest lowland pine forest, but woodland cover accounts for only 7% of the total LEAP area.

Industry type is very varied and is generally located at the major settlements in designated industrial

areas. Of note in Cambridgeshire are the business parks at Witchford, Sutton and Ely. The major military installations include Mildenhall, Lakenheath, Feltwell, Honington and the army's battle training areas northwest of Thetford and south of Swaffham.

2.1 Summary of Environment Overview

2.1.1 Environmental Resources

WATER RESOURCES

Rainfall is low throughout the LEAP area and the average varies from 600 to 650 mm per year. During the summer months, in line with other areas in the Anglian Region, evaporation and transpiration far exceed rainfall and as a result there is very little excess water in the LEAP area. The most current predictions are for annual rainfall to increase, with winters becoming wetter and stormier, and summers warmer and drier. The effects on water resources are likely to include reduced summer river flows and higher peak flows in winter.

The principal aquifers (groundwater-saturated rocks) of the region are the Chalk and the Woburn Sands; sand and gravel deposits also occur within the upland river valleys and represent locally important aquifers. Recharge of the Chalk occurs within the whole of the area and the groundwater flows are generally towards the west. Water flows out of the aquifers either at discrete springs or gradually along the length of the Rivers Wissey, Little Ouse, Lark and Soham Lode, and this flow contributes up to 70% of the total annual river flow. The Woburn Sands aquifer is also present, although recharge of water to this aquifer is limited because, apart from a minor surface outcrop in the west of the LEAP area, it underlies the impermeable Gault Clay.

GROUNDWATER (PROTECTION)

There are several areas of groundwater in the LEAP area that have been confirmed as contaminated under the Agency's existing powers or will need investigation under new powers. Mildenhall industrial estate, British Sugar at Bury St Edmunds, Oil and Pipeline Agency at Thetford, and RAF Honington are amongst the sites where investigations have already commenced. Once the Regulations are implemented under Section 57 of the Environment Act 1995, the involvement of the Agency will be determined and other sites may become apparent. These may include areas such as Mildenhall and Lakenheath industrial estates and old landfill sites such as Ingham waste disposal site. Large parts of this area are underlain by a major chalk aquifer. We will oppose the siting of further

2.0 THE ELY OUSE AREA

landfills on the aquifer, unless detailed risk assessment demonstrates that the risk of groundwater contamination at the site is small enough to be considered acceptable.

The Groundwater Regulations have been made by Parliament, to comply with the European Directive on the protection of groundwater against pollution caused by certain dangerous substances (80/68/EEC). The purpose of the Groundwater Regulations is to protect groundwater by ensuring the safe disposal of potentially harmful and polluting materials. These Regulations are likely to affect a wide sector of industry, including premises or operations that manufacture, handle, store or use List I or II substances where there is a risk of a discharge occurring. The types of activities that will require authorisation include disposal of sheep dip, pesticide or other listed substances onto or into land. The new legislation will complement existing pollution control laws and help to ensure that the quality of our groundwater and rivers is preserved for future generations.

NATURAL HABITAT

The LEAP area contains a rich array of habitats, ranging from the dry, sandy heathland of the Brecklands to the peat soils of the fens. The headwaters and Breckland sections of rivers generally have a good diversity of habitats, including many pool-riffle sequences, while those watercourses that are chalk streams have unique flora and fauna. Within the lower fenland sections, rivers ponded by control structures form important 'green corridors' through mainly arable farmland. These lower sections of river are embanked, often with substantial areas of washland, and contain areas of semi-improved grassland. In the LEAP area there are two Special Protection Areas, four Special Areas of Conservation, 78 Sites of Special Scientific Interest (SSSIs), of which 39 are water-dependent, and approximately 500 county wildlife sites.

Large parts of the area are covered with glacio-fluvial drift and till which comprises deep, well-drained sandy soils, which are acidic in places and well-suited for growing coniferous woodland and supporting lowland heath habitats.

2.1.2 Flood Defence and Land Use

FLOOD DEFENCE

Parts of the fenland are as much as 1.5 m below Ordnance Datum Newlyn (ODN); high flood level is 3.5 to 4 m above ODN. The major challenge is, therefore, protecting the fens from flooding by the failure or overtopping of the river embankments.

Large-scale engineering works over the past 300 years or so, such as the construction of the Relief Channel and the Cut Off Channel, have improved the standards of flood protection in the fens but overtopping of defences is always a possibility during times of very high flow. Defences are continually being upgraded to counter sinking ground levels and worn-out defence structures; millions of pounds are spent every year on defence works and this will continue to be the case in the future.

AGRICULTURE

Information supplied by the Farming and Rural Conservation Agency (FRCA) indicates that 32% of the agricultural land in the LEAP area is graded 1 and 2, compared with England as a whole which comprises only 16% of these top-quality grades. This high-quality land is capable of supporting a wide range of crops and has almost no limitations in terms of agricultural use.

However, the Ely Ouse area is one of the driest in the country and irrigation is an important tool. It increases both the quality and yield of crops and on the lower graded, light and sandy Breckland soils, it allows the successful production of vegetable and potato crops.

Agriculture in the LEAP area is an important source of employment, both directly and in associated industries, such as vegetable and potato washing, processing and packing, locally and further afield.

LAND USE

The continual development of our cities, towns and countryside is the single most significant influence on the environment. Development includes most construction works, such as buildings and roads, mineral extraction and waste management facilities and certain changes of use.

Historically, development and land use have been guided to a large extent by the physical characteristics of the area, including the geology, hydrogeology, topography and rainfall. For example, it is evident that watercourses have been important in the establishment of settlements in the plan area, including Thetford and Bury St Edmunds. In the 10th century, Thetford was effectively the 'capital' of East Anglia, as it was strategically located at a crossing of the River Thet. Ely was established on the largest of the Fen 'islands', an area of relative highland in a low-lying, boggy area. Ely is the largest settlement in East Cambridgeshire District. The Agency's own powers to control development are extremely limited. However, as a statutory

2.0 THE ELY OUSE AREA

consultee to the planning authorities, the Agency must be consulted on certain categories of proposed development and in the preparation of Development Plans. It is on this basis that the Agency seeks to form a close working partnership with planning authorities to address mutual concerns.

In general terms, the Development Plans that pertain to this LEAP area follow a strategy of focussing development on existing major urban areas, with development in other settlements being limited to that required to maintain the viability of the settlement. However, where it is considered to be a sustainable option, the major expansion of an existing, strategically located settlement can be allocated. Such an allocation has been made at Red Lodge.

Within Cambridgeshire, the household growth levels predicted by the DETR indicate a need for an additional 45,000 dwellings by 2016. To address this issue the County Council undertook a capacity study, which put forward a number of options for managing this growth. These options included the concentration of development at larger centres and along transport corridors and introduced the possibility of new settlements.

The Panel of Inspectors' report on the Public Examination of Regional Planning Guidance for East Anglia, which was produced recently, raised the growth figure to 66,500 dwellings, although this is subject to review using the government's new methodology which indicates a lower figure. The report sets out a sequential test to determine the locations for development; the MOD site at Oakington/Longstanton is identified for early consideration as a focus for a development of 10 – 20,000 dwellings.

2.1.3 Key Biological Populations, Communities and Biodiversity

Both natural forces and societal influences have shaped the landscape and habitats in the LEAP area. The drought years of the 1990s caused low groundwater levels, very low river flows, increased siltation and severe drying of fens and other wetland habitats. Over time, changes in farming practices, population growth and land drainage and flood defence works can all impact on both habitats and biological populations.

Floodplain grazing marsh is a target habitat in the Biodiversity Action Plan (BAP) for Norfolk, and river valley grassland is listed as a priority habitat for conservation within the Brecklands Environmentally Sensitive Area. Wet grassland habitat is also key to

the survival of Desmoulin's whorl snail. This snail is listed on the EC Habitats and Species Directive and is also a BAP species.

The LEAP area contains a wide variety of habitats and species of national and international importance. The Agency has been given responsibility as a contact point and/or lead partner for the following habitats and species:

Habitats:

- Chalk rivers*
- Eutrophic lakes*
- Aquifer-fed fluctuating water bodies (such as the Breckland Meres)*
- Salt marshes

Species:

- Water vole (*Arvicola terrestris*)*
- Otter (*Lutra lutra*)*
- Vendace (*Coregonus alba*)
- White-clawed (native)/Atlantic stream crayfish (*Austropotamobius pallipes*)*
- Southern damselfly (*Coenagrion mercuriale*)*
- Depressed river mussel (*Pseudonodonta complanta*)*
- Shining ram's horn snail (*Segmentina nitida*)*
- Little whirlpool ram's horn snail (*Anisus vorticulus*)*
- Glutinous snail (*Myxas glutinosa*)*
- Freshwater pea mussel (*Pisidium tenuilineutum*)*
- River jelly lichen (*Collema dichotomum*)*
- Ribbon-leaved plantain (*Alisma gramineum*)*
- Greater water parsnip (*Sium latifolium*)*
- Marsh warbler (*Acrocephalus palustris*)*
- Burbot (*Lota lota*)
- Cut grass (*Leersia oryzoides*)*
- Triangular club-rush (*Scirpus triqueter*)*

*These species are or are believed to be associated with this area.

BAPs have also been written for locally important species.

There are 227 km of coarse fishery and 106 km of trout fishery within this area. The Ely Ouse River, the Old West and lower end of the Rivers Wissey, Little Ouse and Lark are collectively known as the South Level 'pond'. The Ely Ouse River has a healthy fish biomass; with the population dominated by roach. Common bream and pike are also widely distributed. Increased flows in the upstream sections of the major tributaries see a change in fish species to those more suited to an erosive riffle/pool habitat. The most 'natural river' is probably the Wissey, which supports breeding brown trout, with sea trout occasionally seen.

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2.1.4 Compliance with Targets and Standards

WATER QUALITY

Biological quality grades 1997#			Chemical quality grades 1998		
	Grade	Length of river (km)		Grade	Length of river (km)
'Very good'	a	139.9	A	0	
'Good'	b	183.9	B	27	
'Fairly good'	c	83	C	184.3	
'Fair'	d	22.9	D	117.5	
'Poor'	e	8.3	E	126.9	
'Bad'	f	0	F	0	
'Unclassified'	o	21.4	O	0	

#The 1998 biology data was not available at the time of going to press.

The General Quality Assessment (GQA) scheme is a national scheme that grades the different types of river across England and Wales. It provides an absolute measure of quality and is also designed to show trends.

For chemical quality, there has been a small change in the GQA over the five-year period with a reduction in O, F, B and C grades and an increase in E grade. (Refer to Figure 2.)

Although 1998 biology data was not available when this document went to press, data for the five years to 1997 indicate a reduction in grades c, d, e and o and a marked increase in grades a and b. (Refer to Figure 3.)

WATER RESOURCES

Table 2: Summary of Water Resources Status and Expected Trends

OBJECTIVES	STATUS
Meet reasonable demands	Public water supply and industrial demands are currently met and not forecast to rise significantly. It is likely that water companies will be able to meet the new demands from the proposed housing and population growth (described in County Structure Plans) using water held under existing abstraction licences and by incorporating water efficiency methods such as leakage control and metering.
Protect resources	Cessation clauses are in place on most surface water abstraction licenses to protect against low flows. Water Level Management Plans to be produced and actions prioritised and implemented. Review of consents to be carried out under the Habitats Directive Regulations.
Ensure proper use	Time limited licences allow periodic review. Water companies achieve reasonable levels of leakage by meeting targets set annually by OFWAT. Agency promotes good irrigation practice.
Conserve water resources	Winter storage to meet new demands or replace summer abstraction is encouraged by the Agency (subject to appraisal of local impacts). Climatic changes to be kept under constant review.

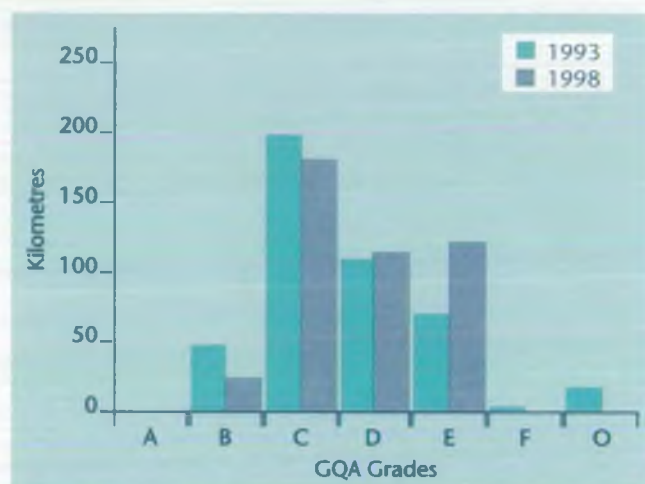


Figure 2: Change In River Chemical Quality

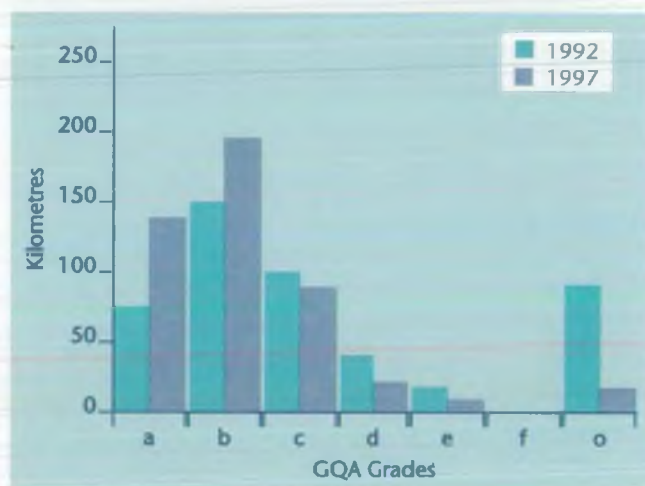


Figure 3: Change In River Biological Quality

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There are 1167 abstraction licences in force in the Ely Ouse LEAP area. Of these, approximately 38% originated as Licences of Right. These are licences which were initially granted under Section 23 of the Water Resources Act 1963, for abstractions which had already been in operation for at least five years when that Act was passed. Many of the Licences of Right are for general agricultural purposes, so are for small quantities of water. The remainder cover a variety of uses, including public water supply, spray irrigation and industry. In many cases, the licence has been varied since it was issued; most variations are time-limited and subject to conditions such as cessation clauses in order to protect the water environment and the rights of other abstractors.

CONSERVATION

To meet the Agency's statutory conservation duties and strategic objectives, river corridor and species surveys have been undertaken to describe, classify and monitor the conservation resources of all main rivers in the Ely Ouse LEAP. The surveys, which include otter, water vole, bird and plant species, enable the biodiversity resource to be assessed and targets set for restoration, enhancement and/or conservation measures.

AIR QUALITY

The area covered by this plan is essentially rural, with the major urban centre being Bury St. Edmunds. Air quality has not given rise for concern and for this reason little information is available from monitoring of air quality. Using data from other rural monitoring sites elsewhere in the country, it can be assumed that the quality of the air is very good within the majority of the area. However, the effects of releases from other sources (such as roads as the A14, A10, A11, and A47) and urban areas outside of this LEAP (such as Cambridge and King's Lynn) may have an impact on the LEAP area under some meteorological conditions.

Within this LEAP area there are nine sites that have authorisations issued under EPA90 Part 1 with emissions to air. All of these sites are compliant with their authorisations and therefore are not

considered to have an adverse effect on the local air quality.

WASTE DISPOSAL

One of the major influences on the size and location of waste disposal sites is local demand. As this area is largely a rural area without major centres of population, it is not surprising to find that the area is served by few, relatively small landfills. Figures on waste arisings and remaining disposal capacity are not readily available by LEAP area, as they are prepared on a county basis. The draft waste strategy for England and Wales 'A Way With Waste' was published in June 1999. Once this draft consultation document is finalised it will give a blue print of how waste will be managed for the next 20 years.

This subject is discussed in more detail in Theme 4: Managing Waste in Section 4.

TRANSFRONTIER SHIPMENT OF WASTE

The Transfrontier Shipment of Waste Regulations, 1994, transpose Council Regulations (EEC) 259/93 (the Waste Shipments Regulation) into UK Legislation. Transfrontier movements of potentially hazardous waste (those that are designated as amber or red by the Organisation for Economic Co-operation and Development) require control. This control is effected by means of a system of notification between the competent authorities of the 'concerned countries' (exporting and importing countries and any countries of transit involved in a transfrontier movement of wastes). These competent authorities are the regulatory bodies appointed by national governments. In the UK, the competent authorities for the dispatch and destination of waste are the Environment Agency (for England and Wales) and the Scottish Environment Protection Agency (for Scotland). The competent authority for transit throughout the UK is the Environment Agency.

The table below shows the fluctuation in both the number and type of shipments for 1997 and 1998 for the Ely Ouse LEAP area.

Table 3: Comparison of the Tonnes and Number of Shipments Broken Down by Waste Type for 1997 and 1998

YEAR	1997		1998	
Waste Type	Number of Shipments	Tonnes	Number of Shipments	Tonnes
Fragmentiser/non ferrous	253	15668.7	119	6589.14
Pharmaceutical	9	180.94	51	1356.58

In addition, 9 Transfrontier Shipment of Waste notifications were consented in 1997 and 11 in 1998.

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2.1.5 The Health of the Aquatic Environment

Fish, invertebrate and plant species are good indicators of the state of rivers and lakes. Healthy and abundant freshwater fish stocks and a diverse invertebrate fauna and plant flora demonstrate our success in meeting water protection and water management objectives. Good water quality and quantity along with habitat are all vital for flora and fauna. The overall objective is to sustain flora and fauna populations appropriate to the river catchment. However, for fish it is recognised that this level of population will not be achieved in some smaller river channels where appropriate habitat is a limiting factor.

The Ely Ouse River is the major coarse fishery and supports a good Class B (10-20 g/m²) fish population. The National Angling Championships are regularly held in this river. The installation of 12 artificial reefs, to provide both habitat and shelter in this length, has helped consolidate the quality of this fishery. The Lower River Wissey and Little Ouse both support a Class B fish population, while the lower River Lark supports a Class A (over 21 g/m²) fish population.

The Old West River is the smallest of the coarse fisheries, and supports a Class B fish population, dominated by small fish. This is similar to many canal fisheries and is probably related to the relatively low diversity of habitat in this river. Cottenham Sewage Treatment Works (STW) effluent ceased to discharge to the Old West in December 1997, which may result in an improvement in fish biomass, reflecting improved water quality conditions.

2.1.6 Aesthetic Quality

LANDSCAPE

The landscape is primarily agricultural and lacks dramatic relief. Nonetheless, the mosaic of habitat types, which includes heathland and forest with a mixture of pasture, hedgerow, Scots pine treelines and wetlands contribute to a landscape that is far from dull.

The Character and Natural Area descriptions are given in Table 4 below and illustrated in Map 4 on the following page.

Table 4: The Character of the Ely Ouse LEAP Area

CHARACTER AREA (No)	NATURAL AREA	LANDSCAPE DESCRIPTION
The Fens (46)	The Fens	'Low lying, level terrain which except for fen islands such as Ely rarely reaches 10 m above sea level. The land is predominantly cultivated with little natural or semi natural habitats remaining.'
NW Norfolk (76)	N Norfolk	'Large scale arable and grassland landscape on big rolling upland terrain ... remnant heath and ... mixed woodland; huge estates, large and widely spaced villages.'
S Norfolk & High Suffolk Claylands (83)	E Anglian Plain	'Undulating topography area of relatively small individual land holdings, with scattered parkland estates. Mix of remnant medieval ancient countryside ... and large modern fields devoid of hedges and trees.'
Mid Norfolk (84)	E Anglian Plain	'Predominantly arable, with variable field sizes, generally medium rather than large, relatively well wooded often a reflection of sporting interest within the estates ... Some areas of heathland, great density and variety of churches associated with villages and estates.'
Breckland (85)	Breckland	'Distinctive large scale landscape of pale coloured arable fields or open heath contrasting with vertical elements of pine lines, belts and forest. Long history of settlement but now sparsely populated.'
S Suffolk & N Essex Clayland (86)	E Anglian Plain	'An undulating topography ... dissected by small steep sided valleys. Characterised by small medium scale fields, and numerous small farm copses and hedgerows with trees that create a wooded appearance. However, in places a large scale arable field pattern ... gives an open feel ..'
E Anglian Chalk (87)	E Anglian Chalk	'Visually simple and uninterrupted character ... The smooth rolling chalkland hills have a landscape of large regular fields enclosed by low hawthorn hedges, few trees and straight roads. Both past and present evidence of mineral extraction can be found .. Cereal farming has now superseded the traditional practice of sheep farming'.
Bedfordshire & Cambridgeshire Claylands (88)	The West Anglian Plain (part of)	'Gently undulating relief with plateaux, divided by broad shallow valleys and characterised by arable cultivation. Woodland cover is generally sparse. A broad valley at Marston Vale is dominated by the effects of clay extraction for the brick industry ...'

2.0 THE ELY OUSE AREA



Map 4: Character Areas

RECREATION AND NAVIGATION

Opportunities for recreation in the LEAP area are many and varied, from angling to motor racing, from museums to country parks. A study

commissioned in 1993 by the Eastern Council for Sport and Recreation showed that in East Anglia participation in water-based recreation was above the national average, and the Ely Ouse is no exception, with many motor-powered boats, sailing, rowing and canoes. (See Map 5)



Map 5: Recreation Sites

2.0 THE ELY OUSE AREA

Many of the banks of the larger rivers in this area have public rights of way on them. Of particular note is the Fen Rivers Way, which stretches from Cambridge to King's Lynn. As part of this long distance footpath, Cambridge County Council, the Agency and other partners financed the erection of a footbridge at Holt Fen over the Old West River. Forest Enterprise and local authorities have recently promoted the Little Ouse Valley Way.

There are over 100 km of navigable rivers in the Ely Ouse area. These include the Rivers Wissey, Little Ouse and Lark, which are navigable as far upstream as Stoke Ferry, Brandon and Judes Ferry, respectively. There are 14 48-hour moorings and four locks that come under Agency jurisdiction.

A more detailed account of the State of the Environment for the Ely Ouse can be found in the Environment Overview.

2.1.7 Socio-economic Considerations

The Agency is required to have regard to any effect that our proposals would have on the economic and social well-being of local communities in rural areas. This is particularly relevant for this LEAP area where the local economy depends on farming and ancillary industries.

Within this LEAP area there are 'Objective 5b' and Rural Development Areas. Objective 5b areas are defined, for the purpose of EC Structural Fund support, as areas where assistance is available for projects such as the promotion of local products, environmental schemes to protect the countryside and tourism initiatives. Rural Development Areas are those where assistance is available for projects which strengthen and diversify the local economy, support and diversify the agricultural economy, develop tourism, improve training and access to employment, sustain rural communities and sustain and improve the environment.

The East of England Development Agency (EEDA) will be influential in shaping the future development of the LEAP area and the remainder of its region – the six counties of Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk. The Agency is participating in shaping EEDA's emerging economic development strategy by raising key environmental issues and opportunities and promoting itself as a partner organisation working towards achieving sustainable development.

As this LEAP area is very rural in nature and the predominant land use is agriculture, we will consider the impact of our policies on the local economy.

3.0 ISSUES AND PROPOSED OPTIONS

3.0 Introduction

The Activity Plan specifies:

- The organisation(s) which will implement the proposed activities, either in a lead role or as a key supporter; and
- The timetable for the activity.

The following table outlines the agreed actions for each issue identified via the consultation process for this LEAP area.

NB. The issues and activities are not presented in any order of priority and are in summary.

SUMMARY OF ISSUES

The issue numbers have changed from those used in the Draft LEAP. Table 1 in the Background Section describes where changes have been made.

a) Managing Waste

- 1: Potential Impacts On The Environment From Contamination Originating From Landfill Sites

b) Managing Our Water Resources

- 2: Transfer of Water from the Major Watercourses into IDB Drains via 'Slackers' Is Not Controlled By the Water Resources Act
- 3: Future Growth in Licenced Abstraction Demands Cannot Be Met From Ground or Summer Surface Waters
- 4: The Surface Water Resources Are Considered Fully Committed For The South Level
- 5: Identification and Remediation Of

Contaminated Land And Groundwater

c) Delivering Integrated River Basin Management

- 6: A Number of River Stretches Fail To Meet Their River Ecosystem Classification Targets
- 7: Operation and Management Of The Cut Off Channel
- 8: Operation and Management Of Denver Sluice
- 9: Eutrophication of Soham Lode, River Lark, Little Ouse and The Cut Off Channel
- 10: Flood Warning System Targets Are Not Being Met For Flood Risk Areas

d) Conserving the Land

- 11: Concern over The Maintenance And Operation Of Privately Owned Flood Defence Structures
- 12: Insufficient Discharge Capacity in River Wissey at Colverston Manor

e) Managing Our Freshwater Fisheries

- 13: Fish Biomass Targets Are Not Being Met

f) Enhancing Biodiversity

- 14: Need To Quantify The 'In-River Needs' And Define The Minimum Acceptable Flows
- 15: A Better Understanding of the Water Requirements of the Environment Is Needed
- 16: Requirement to Improve Habitat Diversity within Rivers and Their Floodplains
- 17: There is A Need to Assess and, Where Appropriate, Protect The Ecological Status Of Headwaters
- 18: The Extent of Spread of Invasive Plants is Unknown and Therefore of Concern

Key to Codes used in the Activity Tables

COSTS	
R	Routine or revenue budget
K	Thousand
tbd	To be determined
*	Year work carried out
U/K	Unknown
AGENCY STAFF RESPONSIBILITIES	
EPLm	Area Environment Planning Manager
EPRm	Area Environment Protection Manager
FDm	Area Flood Defence Manager
FERm	Area Fisheries, Ecology and Recreation Manager
WRm	Area Water Resources Manager
CSm	Area Customer Services Manager

3.0 ISSUES AND PROPOSED OPTIONS



Map 6: Summary of Issues

Map 6 shows the site specific issues.

ENVIRONMENTAL STRATEGY

We recognise that environmental problems invariably are inter-related and need to be dealt with in an holistic manner. Our 'An Environmental Strategy for the Millennium and Beyond' (Sept 1997) adopted an integrated approach to understanding, managing, regulating and improving the quality of air, land and water by introducing nine themes, namely:

-  Addressing climate change;
-  Regulating major industries;
-  Improving air quality;
-  Managing waste;
-  Managing our water resources;
-  Delivering intergrated river-basin management;
-  Conserving the land;
-  Managing freshwater fisheries; and
-  Enhancing biodiversity.

The issues identified below have been cross-referenced to between one and three environmental themes by using the appropriate symbol within the table.



3.0 ISSUES AND PROPOSED OPTIONS



3.1 Addressing Climate Change

The UK is a contributor to the emissions of gases such as carbon dioxide into the atmosphere which are believed to contribute to long-term climate changes. The UK will also be affected in a complex way as and when the climate does change. It is a signatory to the Framework Convention on Climate Change, as agreed at the Rio Summit in 1992, and is taking an active part in international negotiations to obtain commitments beyond the year 2000 for credible, effective and achievable reductions of greenhouse gas emissions.

The National Air Quality Strategy will be one vehicle that will help to address this issue and will involve the collaboration of the Agency, local authorities, industry and power generators.

We need to ensure that we incorporate best estimates of climate change into our assessment of flood risk, design for flood defence structures and options for water resources management.

On the basis of current knowledge and predictions of the potential effects of climatic changes, it appears that, over the coming decades, there may be significant environmental impacts. These include sea level rise, altered patterns of rainfall, increased water demand and changing patterns of land use with consequent impact across a wide section of economic, social and environmental issues. We believe that there should be a concerted national programme to monitor changes in climate, to improve the accuracy of modelling and to plan for the impacts. Dealing with climate change should be a key theme of the revised UK Sustainable Development Strategy.

The balance of evidence indicates a rise in average global temperature but the likely impacts at a Regional scale for East Anglia are less certain. Current predictions are for an increase by 2025 of 0.5 °C compared to 0.4 °C for north-west Britain. Annual precipitation is predicted to increase by 1-5 %, although the monthly rainfall pattern may change by becoming more concentrated between November and March but drier between April and October. Summer rainfall may actually decrease from the present long-term average by as much as 8% by 2025. These predicted changes in rainfall patterns are likely to have the effect of increasing surface run-off during winter, so increasing the risk of flooding, whilst decreasing run-off in summer resulting in summer resources being more limited.

Higher temperatures and reduced summer rainfall will generally lead to increased evaporation,

transpiration and higher soil moisture deficits. Therefore, greater winter rainfall will be required to reduce this deficit before infiltration and significant aquifer recharge can commence. Latest climate change research indicates that winter and annual rainfall will increase in the future and that the overall effect will be little change or a possible small increase in average annual groundwater recharge.

The greatest uncertainty for water management is the degree of risk of greater extremes for floods and droughts.



3.2 Regulating Major Industries

The effective regulation of industries can ensure that the whole environment can be protected from pollution whilst respecting economic and employment considerations. This can be accomplished with powerful legislation but ultimately success is achieved by developing good relationships with industry.

In September 1995, the Secretary of State for the Environment announced a review of water resources and supply following the experience of the recent drought years. In particular, we were asked to be fully involved with the water companies in the development of water resource plans. In March 1999 after detailed consultation, the water companies submitted their plans showing how they intend to provide supplies to the year 2025. Anglian Water Services plan to meet future needs through a combination of managing demands with metering and leakage control, and some developments to make greater use of existing abstraction licences. Cambridge Water Company, which has sources in this LEAP area, also have a programme of domestic metering which will enable the company to meet demand until 2015, after which it plans a combination of further demand management measures and some additional groundwater abstraction.

The Director General of Water Services (OFWAT) has also carried out a review of water company prices. This process (known as Asset Management Plan 3 or AMP3) has set the limit water companies can charge their customers for the period 2000 to 2005. The programme of environmental improvements, which was promoted by the Agency, has (in the main) been accepted by the Director General and included in the price limits. Now several schemes and investigations related to environmental improvement can be financed by the water companies and these are given in the activity tables in this report.

3.0 ISSUES AND PROPOSED OPTIONS

The area covered by this LEAP is predominantly agricultural and contains little large or complex industry. There are only nine sites that have authorisations issued under the Environmental Protection Act 1990 (EPA90) Part 1. There are no authorised processes beyond the LEAP boundary which are felt to have a major influence on the local environment.

All authorised processes in this LEAP area are operating in compliance with their authorisation and as such are not considered to be having a detrimental impact on the local environment. There are no outstanding issues which are under the Agency's remit.

3.3 Improving Air Quality

Air quality can be discussed in both local and global terms. It is affected by air pollutants which can be particulate or gaseous in nature. Particulate air pollutants vary greatly, they can be organic or inorganic in nature and range from fine aerosols to wind-borne soil particles. Gaseous air pollutants include substances such as sulphur dioxide, carbon monoxide and ozone. The immediate impact of air pollutants is usually local but these emissions can lead to global problems, for example, acid rain. Because of this we are committed to implementing the National Air Quality Strategy in collaboration with industry and local authorities. Under EPA90, responsibility for the control and monitoring of air quality is placed upon the local authorities and the Agency.

As previously mentioned there are nine sites that have authorisations issued under EPA90 Part 1 in this area all of which are compliant with their authorisations and therefore are not considered to have an adverse effect on the local air quality.

3.4 Managing Waste

The availability and cost of disposal options influence the management of waste. However, the need to dispose of waste safely and in an environmentally sustainable way should not be neglected by consideration of those two factors. The best option is not to produce waste in the first place, but as this is inevitable we all have a responsibility to reduce the amount of waste we produce. The DETR's white paper 'Making Waste Work' sets out the Government's policy framework for the management of waste. It identifies ways in which waste can be managed in more sustainable ways and sets targets for achieving that aim. The strategy is based on three main objectives;

- to reduce the amount of waste produced;
- to make the best use of waste produced; and,
- to choose waste management practices which minimise the risk of immediate and future environmental pollution and harm to human health.

Issue 1 Potential Impacts on the Environment From Contamination Originating From Landfill Sites.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Continued monitoring of sites.	Agency Original Operator Site Owner Local authorities	R	*	*	*	*	*	Relates to Pre-legislation sites; Ingham; Barton Mills, Red Lodge; Waterbeach; Lackford; Kentford; Kilverstone; Snetterton; and Fomham St. Genevieve; and Half Moon Plantation
2) Remedial action to be taken where appropriate.	EPLm	tbc	*	*	*	*	*	The Regulations Implemented by Section 57 of the Environment Act 1995 due the end of 1999 and will determine the involvement of the Agency in the remediation of contaminated sites.

3.0 ISSUES AND PROPOSED OPTIONS



3.5 Managing Our Water Resources

We seek to manage water resources in a sustainable manner to balance the needs of the environment with the need of abstractors. We monitor river flows, groundwater levels, rainfall and climate to assess the available water resource. We issue abstraction licences if there is sufficient water available, the need for water is justified, all rights of existing users are protected and the water environment (rivers and wetlands) is not unacceptably affected.

We are committed to reviewing our Water Resources Strategy by December 2000 which will consider water demands and supply until 2025. It will highlight the need for the Agency, Water Companies, OFWAT, local authorities, the farming community and industry to continue to work

together to ensure efficient water use and protection of the water environment.

We intend to issue Abstraction Management Strategies (AMS), separate from LEAPs, which will describe the abstraction policies for LEAP areas. The AMS will be drawn up in consultation with interested parties. This concept was part of the DETR review and does not require a change in legislation. We have drawn up a programme, which includes national trials of the concept in 1999, formal consultation in 2000 and production of local AMS documents commencing in 2001.

We are also looking ahead and we intend to develop our methods of calculating the available water resources by the use of computer models. A groundwater model of the LEAP area is currently being evaluated and consultation has taken place with abstractors and key customers.

Issue 2 Transfer of Water From the Major Watercourses Into IDB Drains Via 'Slackers' is not Controlled by the Water Resources Act.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Request IDBs to raise inlet levels of slackers.	Agency IDBs WRm	R	*	*	*	*	*	
2) Set up cessation levels on slacker intakes which IDBs would 'voluntarily' adhere to.	Agency IDBs WRm	R	*	*	*	*	*	
3) Restrict irrigation using Section 57 of WRA 91 when necessary.	Agency Abstractors IDBs WRm	R						Timing of this action is dependant on a drought situation.
4) Change legislation (as highlighted in the DETR Review of Licensing).	DETR WRm							DETR will determine timing and costs.
Issue 3 Future Growth in Licensed Abstraction Demands Cannot Be Met From Ground Or Summer Surface Waters.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Store water from rivers during high flows in the winter.	Agency, Water Companies, Farmers, All PWS customers MAFF, County Councils WRm	U/K	*	*	*	*	*	We will consider the impact of our activities on archaeology when we exercise our water management and pollution control powers and duties.
2) Reduce demand.	Water Companies, Farmers, All PWS customers DETR, Local Planners & developers Building Regulation Agency WRm	R	*	*	*	*	*	Another option for abstractors could be to import water from areas of surplus but this would require a full environmental assessment to ensure the nature conservation value is protected.
3) Review of groundwater balance for Upper Wissey.	Agency WRm	R	*	*				

3.0 ISSUES AND PROPOSED OPTIONS

Issue 3 contd. Future Growth in Licensed Abstraction Demands Cannot Be Met From Ground Or Summer Surface Waters.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
4) Complete the groundwater model for this LEAP area.	Agency WRm	U/K	*	*	*	*	*	The groundwater modelling programme is split into stages. Stage 1 – compilation of data, information and issues with a Report in 2001. Stage 2 involves further investigation work (if necessary) before model development at Stage 3 starting in 2003. Final Reporting and revised licensing policy is expected in 2005.
5) Temporary five year reduction to minimum residual flow conditions at Denver.	Agency, Essex and Suffolk Water Company WRm	U/K						
6) Produce National Water Resource Strategy.	Agency WRm	100	*	*				Resource availability will be re-examined.
7) Produce Abstraction Management Strategies.	Agency WRm	tbd			*	*	*	These documents will identify policy on a local scale.

Issue 4 The Surface Water Resources Are Considered Fully Committed for the South Level.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Carry out project to determine the available surface water resource.	Agency WRm	15		*	*			
2) Maintain embargo without supporting evidence.	Agency WRm	R	*					

Issue 5 Identification and Remediation of Contaminated Land and Groundwater.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Support site investigation and remediation at RAF Mildenhall.	Defence Estates (US Forces) Agency EPLm	R	*	*	*	*	*	The US Forces are committed to carrying out site investigations and clean up to US/UK standards which ever is the greater. The Agency should give maximum support and assistance to the projects.
2) Support site investigation and remediation at RAF Lakenheath.	Defence Estates (US Forces) EPLm	R	*	*	*	*	*	
3) Reduction in application of organic fertiliser within NVZs by implementation of Action Programmes.	Farmers FWAG Agency EPm	R	*	*	*	*	*	Reduction of the impact of agriculture on nitrogen enrichment on NVZ will now be achieved by pollution prevention visits and enforcement as part of the Agency's routine work.



3.6 Delivering Integrated River Basin Management

looking at individual uses or users in isolation with the aim of balancing conflicting needs.

Integrated river basin management is the need to look at the river corridor habitats as a single entity, through an integrated approach, rather than

Issue 6 A Number of River Stretches Fail to Meet Their River Ecosystem Classification Targets.								
Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Improvements to Newmarket STWs.	AWS EPLm	#	*	*	*	*	*	Newmarket STW will require investment under AMP3 and will benefit the River Snail and the Soham Lode as water resources, whilst supporting recreation, especially angling and protecting wildlife.

3.0 ISSUES AND PROPOSED OPTIONS

Issue 6 contd

A Number of River Stretches Fail to Meet Their River Ecosystem Classification Targets.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
2) Improvements to Bury St Edmunds STWs.	AWS EPLm	#	*					The improvements at Bury St Edmunds under the AMP2 will be completed by the end of 1999. (#These improvement will be paid for by AWS.)
3) Continue monitoring to ascertain the impact of STW (Newmarket and Bury St Edmunds) on REC targets.	Agency EPLm	R	*	*	*	*	*	
4) Investigate source of ammonia upstream of Bury St Edmunds STWs.	Agency EPm	55	*	*	*	*	*	Investigation boreholes and groundwater monitoring will be needed.
5) Regulate and control any unconsented discharges of effluent.	Agency EPm	R	*	*	*	*	*	

No 7

Issue: Operation and Management of the Cut Off Channel.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Install bubble curtains at Black Dyke Pumping Station.	Agency FERm	R	#					The equipment to prevent fish from being entrained in the intake has already been purchased. #It will be deployed when pumping rates are sufficiently high to threaten the resident fish populations in Cut Off Channel. Fisheries staff from Central Area and Water Resources staff from Eastern Area will work together during the installation and maintenance of the equipment. As the 1998/99 winter was relatively wet pumping was not required and therefore nor was the bubble curtain.
2) Review optimum times for weed cutting.	Agency FDm/FERm	R	*	*				
3) Implement recommendations from review.	Agency FDm/FERm	R			*	*	*	Excessive weed growth has prevented improvement in angling and continuous pumping of Black Dyke Pumping Station.
4) Carry out a hydrological and environmental study of the Cut Off Channel (River Lark to Little Ouse).	Agency, Local abstractors (including water companies) WRm	R				*	*	
5) Continue with present management practices in accordance with the Interim operating rules that were effective from October 1997.	Agency WRm	R	*	*	*	*	*	The objective of the study is more effective resource management in the Cut Off Channel and River Lark. There is an Ely Ouse groundwater project that will include some of the hydrological work.

Issue 8

Operation and Management of Denver Sluice.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Continue with present management practices in accordance with the Interim operating rules that were effective from October 1997.	Agency FDm	R	*	*	*	*	*	

3.0 ISSUES AND PROPOSED OPTIONS

Issue 8 contd

Operation and Management of Denver Sluice.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
2) Give priority to Denver Sluice over Welmore Sluice.	Agency FDm	R	*	*	*	*	*	Priority to be given to the drainage of the washes to keep depth and duration of flooding of the A1101 to a minimum.
3) Periodic dredging to clear siltation from drainage outfall and shoals in the Tidal River and in front of Denver Lock.	Agency FDm	175	*	*	*	*	*	

Issue 9

Eutrophication of Soham Lode, River Lark, Little Ouse and the Cut Off Channel.*

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Phosphate removal at Bury St Edmunds STWs.	AWS EPLm	#	*					The improvements at Bury St Edmunds under the AMP2 will be completed by the end of 1999 and should improve the eutrophic state of the Cut Off Channel and River Lark. (#These improvement will be paid for by AWS). See issue 6.
2) Designate Soham Lode and the rivers Lark and Little Ouse as Sensitive Areas (Eutrophic).	Agency AWS EPLm	R	*	*	*	*	*	Designation was announced in July 1998 and as a result STWs serving populations >10,000 population and discharging into the designated area will require the installation of nutrient removal by 2005. This includes Newmarket, Soham, Mildenhall, Thetford and Attleborough.

Issue 10

Flood Warning System Targets are not Being Met for Flood Risk Areas.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Achieve an effective Flood Warning System for flood risk areas in accordance with the National Flood Warning Target as stipulated in the Bye Easter Action Report.	Agency FDm	R	*	*	*	*	*	

* The report 'Aquatic Eutrophication in England and Wales: A Proposed Management Strategy' is out to consultation at present. It is hoped that it will identify a management strategy for both diffuse sources and small point source discharges that attribute to eutrophication.



3.7 Conserving The Land

Land use is the single most important influence on the environment and land use change can have beneficial or detrimental implications for the environment. We have a responsibility to protect

and enhance the environment, however, we have limited control over the way land is developed. This is the responsibility of local planning authorities with whom we liaise closely in order to achieve our environmental goals.

Issue 11

Concern Over the Maintenance and Operation of Privately Owned Flood Defence Structures.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Complete asset survey of all flood defence structures.	Agency Riparian owners FDm	Tbd	*	*	*	*	*	This will identify all private structures and their condition.

3.0 ISSUES AND PROPOSED OPTIONS

Issue 12

Insufficient Discharge Capacity in River Wissey at Colverston Manor.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Investigate the possible options to increase discharge capacity. This includes: Increase standards of river maintenance. Raise banks to prevent over topping. Undertake desilting of channel by selective dredging after an environmental assessment has been carried out.	Agency Diddlington Fishery Landowners FDm	tbd	*					This issue has been raised due to increased flooding occurring on land adjacent to the Northwold Stream and Wissey. It is reported to be having a detrimental impact on agricultural land and increases the risk of property flooding. The discharge capacity of the river is such that this summer (1999) rainfall events cause the river level to rise and overtop the banks. The frequency of this has increased over time and is now unacceptable.
2) Implement option identified in above action.	Agency Diddlington Fishery Landowners Tenants FDm	tbd		*				



3.8 Managing Our Freshwater Fisheries

Our long-term strategy for the maintenance and improvement of salmon, trout, migratory salmonids and coarse fisheries is being developed. Our vision for fisheries is that all waters will be capable of

supporting thriving fish populations and that everyone will have the opportunity to experience a wide range of good-quality fishing. We will strive to maintain and improve the quality of a river's fisheries by effective regulation and enforcement and will measure our success by a commitment to a five-year rolling programme of survey work.

Issue 13

Fish Biomass Targets are not being met.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Investigate and where possible ameliorate failures in fish biomass targets.	Agency FERm	R	*	*	*	*	*	The creation of fish 'refuges' on the Old West at the Lazy Otter was completed in March 1999.
2) Identify opportunities to enhance habitat diversity during flood defence works.	Agency Local authorities IWA FERm	R	*	*	*	*	*	



3.9 Enhancing Biodiversity

Biodiversity, the variety of life on Earth, is thought to be declining at an alarming rate. In the UK alone, more than 100 species are believed to have become extinct this century.

The government's contribution to maintaining and enhancing biodiversity is being delivered at a national level through the UK Biodiversity Action Plan (BAP), published in 1994. This publication identifies and sets targets for those species and

habitats considered both rare and in decline. The Agency is the contact/lead for 17 species and 4 habitats as discussed in 2.1.3 Key Biological Populations, Communities and Biodiversity.

Biodiversity will be a key indicator of the successful implementation of sustainable development in a plan area. The national BAP targets will be delivered at a county level and undertaken by environmental organisations, including the Agency and local authorities. (For more information refer to 4.2: Local Agenda 21 and Biodiversity Plans.)

3.0 ISSUES AND PROPOSED OPTIONS

Issue 14

Need to Quantify the 'In-River Needs' and Define the Minimum Acceptable Flows.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Develop BAPs for specific habitats and species which includes flow criteria.	Agency FERm	R	*	*	*	*	*	The Agency has given £3K to the Cambridgeshire BAP Steering Group to fund the coordinators role.
2) Implement BAPs from action above.	Agency FERm	tbd	*	*	*	*	*	
3) Promote 'in river needs' study for the Ely Ouse, including development of a LIFE index.	Agency FERm	R	*	*	*	*	*	We are awaiting the outcome of a National Review of the way forward with respect to 'in river needs'.

Issue 15

A Better Understanding of the Water Requirements of the Environment is Needed.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Carry out monitoring at 14 wetland sites.	Local authorities Agency WRm	U/K	*	*	*	*	*	The costs of monitoring wetland sites can fall on abstractors through conditions attached to the licence. We will consider the impact of our activities on archaeology when we exercise our water management and pollution control powers and duties. Just over half of the WLMPs are now complete. Refer to table 4.
2) Produce WLMP for 16 sites identified.	Agency English Nature IDBs, MAFF CSm	R	*					
3) Implement WLMP for 16 sites identified.	Agency English Nature IDBs Landowners FERm	tbd		*	*	*	*	
4) Carry out review of permissions as required by Habitats Directive.	Agency English Nature Abstraction Licence holders FERm	R	*	*	*	*	*	
5) Carry out investigation and monitoring on rivers with low flows.	Agency AWS WRm	#		*	*	*	*	Rivers identified are the Lark and Stringsides Drain. Part of AMP3 – agreed funding with OFWAT. # Figures not available.
6) Carry out investigation and monitoring on wetland sites close to PWS boreholes.	Agency AWS WRm	#		*	*	*	*	Sites identified include Foulden Common, Great Cressingham Fen, Didlington Park lakes, Kenninghall and Banham Fens and Scoulton Mere. Part of AMP3 – agreed funding with OFWAT. # Figures not available.
7) Undertake a Wetland Framework study to predict the likely impact of specific environmental changes on particular types of wetlands.	Agency Sheffield University English Nature WRm	31	*					This is a new initiative and although the final list of sites has not yet been agreed it is likely that a number will be within this LEAP area. A draft report is expected in December 1999, with the final Report and Action Plan expected in March 2000.
8) Identify catchment areas for wetlands.	English Nature Wildlife Trusts Local authorities Agency WRm	tbd	#					# The timing will depend on the outcome of other studies listed.

3.0 ISSUES AND PROPOSED OPTIONS

Issue 16

Requirement to Improve Habitat Diversity Within Rivers and Their Floodplains.

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Identify areas where flood control structures can be relaxed.	Agency Landowners FWAG Local authorities FDm	R	*	*	*	*	*	
2) Restore flooding to natural floodplain by construction of 'riffle' weirs to increase the watertable locally.	Agency Landowners Local authorities FERm/FDm	tbd	*	*	*	*	*	
3) Influence funding and policies in agri-environment schemes, eg, Countryside and Arable Stewardship schemes.	Agency Landowners Local authorities FWAG FERm	R	*	*	*	*	*	Many of the activities listed will have FRCA involvement due to its role within the Countryside Stewardship Scheme.
4) Identify opportunities to enhance habitat diversity during flood defence works (especially BAP species and habitats).	Agency Local authorities FDm	R	*	*	*	*	*	
5) Recording of plants and animals dependant on the river corridor and associated habitats by field staff and others.	Agency FERm	R	*	*	*	*	*	
6) Review grass cutting of river banks.	Agency Landowners RSPB Local authorities English Nature FERm	R	*					Discussion with English Nature, RSPB and the Agency are already in place to agree a protocol.
7) Consider establishing buffer zones alongside rivers.	Agency FWAG FERm	tbd	*	*	*	*	*	
8) Implement BAP actions for rivers and wetlands.	Agency English Nature Landowners Wildlife Trusts RSPB FWAG Local authorities FERm	#						#The timing and costs of this will be dependant on when the BAPs are completed and what actions are identified.
9) Encourage tree planting in agreed areas with appropriate tree management/pollarding along river corridors.	Agency Land owners Local authorities FWAG FERm	R	*	*	*	*	*	The existing nature conservation value of an area will be taken into account. The Forestry Authority administers the Woodland Grant Schemes.

3.0 ISSUES AND PROPOSED OPTIONS

Issue 17 **There is A Need to Assess and, Where appropriate, Protect the Ecological Status of Headwaters.**

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Assess the level of data on headwaters and identify priorities for completing species level surveys of selected headwaters: upper reaches of rivers Thet, Lt. Ouse, Sapiston, Lark and Wissey.	Agency English Nature FERm	R	*	*				
2) Identify a strategy for the protection of headwaters.	Agency English Nature FERm	tbd			*			
3) Implement Strategy.	Agency English Nature FERm	tbd				*		

Issue 18 **The Extent of Spread of Invasive Plants is Unknown and Therefore of Concern.**

Activity	Responsibility	Cost (£K)	99/00	00/01	01/02	02/03	03/04	Comment
1) Review all current river corridor survey information to ascertain current status.	Agency FERm	R	*	*				
2) Carry out a survey to identify distribution and hence the most affected areas.	Agency FERm	R	*	*				
3) Evaluate methods of control and eradication.	Agency FERm	R	*	*				
4) Encourage recording of invasive plants by field staff and others.	Agency FERm	R	*	*				
5) Implement a systematic programme of control and eradication.	Agency Landowners Wildlife Groups Local authorities FERm	R	*	*				
6) Encourage Garden Centres not to stock invasive plants.	Agency Local authorities	R	*	*	*	*	*	
7) Increase awareness of the full impact of planting invasive species.	Agency FERm	R	*	*	*	*	*	A booklet is available from the Environment Agency titled 'Guidance for the Control of Invasive Plants Near Watercourses'

4.0 A BETTER ENVIRONMENT THROUGH PARTNERSHIP

4.0 Introduction

The aim of this section is to highlight broader, long-term issues and profile the types of partnership required to tackle them. Establishing close and responsive relationships with all sectors of the community are vital if we are to achieve integrated environmental management and a better environment for present and future generations.

WHY PARTNERSHIP?

Partnership is a much abused term, but it essentially means a number of different interests willingly coming together, formally or informally, to achieve some common purpose in the spirit of trust and commitment. Partnerships are desirable because they provide accountability, reduced duplication between agencies, a pooling of scarce resources and combined funding. However, any partnership takes time to develop.

We are well placed to influence many of the activities affecting the environment through the Environment Act 1995 and other legislation. For example, we are the lead regulator for the water environment and also have regulatory powers over waste management activities. In addition we share, with local authorities, the regulation of emissions to air. We have little direct control over land use, which is primarily the responsibility of local authorities. We will prepare LEAPs into the next millennium to demonstrate and reinforce our commitment to integrated environmental management and the partnership approach.

This chapter is divided into three main parts: firstly a discussion of strategic issues followed by a discussion of Local Agenda 21 (LA21) and then Education. We have striven throughout to apply these concepts to the local communities of the Ely Ouse LEAP area.

4.1 Strategic Environmental Issues

By long-term we mean well beyond the five-year horizon of this plan and into the next millennium. As stated in Chapter 3.0 the Agency has recently published 'An Environmental Strategy for the Millennium and Beyond' (September 1997), which highlights nine main themes for our work (and a number of key activities necessary to address them).

We have attempted to illustrate how working with others can contribute to achieving these environmental themes giving, where possible, activities focusing on the Ely Ouse LEAP itself.



Theme 1: Addressing Climate Change

The UK, like all countries, emits greenhouse gases into the atmosphere (such as carbon dioxide and methane) which are believed to contribute to climate change. The UK is, itself, affected by these emissions. In becoming a signatory to the agreements made at the Framework Convention on Climate Change held in Rio de Janeiro in 1992 and at the Kyoto and Buenos Aires Summits in 1998, the UK is playing an active part in obtaining effective and achievable reductions in greenhouse gas emissions.

The consequences of climate change could have far reaching implications for the Agency. The possibility of increased rainfall, resulting in flooding and sea level rise, could add pressures on our Flood Defence department, whereas changes in rainfall distribution are likely to affect Water Resources and Water Quality.

Key issue towards 'Climate Change': We need to ensure that we incorporate any anticipated changes in climate change into our assessments of flood risk, the design of flood defences and the options for water resources management.

Nationally, the Agency regulates industries that account for almost 50% of carbon dioxide releases to the atmosphere and also regulates releases of methane from landfill sites. Controlling these emissions will require increased collaboration between the Agency, local authorities and major organisations such as power generators



Theme 2: Regulating Major Industries

The effective regulation of industries such as British Sugar, Fibrowatt and the activities of water companies such as Anglian Water can ensure that the whole environment can be protected from pollution whilst respecting economic and employment considerations. We can do this backed by powerful legislation but ultimately success is achieved by developing excellent relationships with industry and also by the will of the industries themselves to instigate environmental improvements.

The Action Plan covers a five-year period from 1999 to 2004. During this time two European Commission Directives will have been implemented in England and Wales, with major implications for the Agency. These are Council Directive 96/61/EC (Sept 1996) concerning Integrated Pollution Prevention and Control (IPPC), and the Council

4.0 A BETTER ENVIRONMENT THROUGH PARTNERSHIP

Directive 96/82/EC (Dec 1996) concerning the Control of Major Accident Hazards (COMAH) involving dangerous substances.

IPPC can be likened to the existing Integrated Pollution Control (IPC) regime introduced by the EPA90, under which the Agency regulates certain industrial processes, with local authorities regulating others. IPPC, however, extends the range of processes that are to be regulated and requires consideration of other regulatory aspects such as noise pollution and energy utilisation. Following the decision of the Government as to who will regulate which processes/sites, the Agency will be required to make a major input either as the primary regulator or as an advisor to other bodies, such as, local authorities.

COMAH will replace Control of Industrial Major Accidents Hazards (CIMAHA), and has been introduced to address some of the weaknesses and omissions which have become apparent over the years CIMAHA has been in force. COMAH's aim is to prevent major accidents involving dangerous substances and limit the consequences to people and the environment if any do occur. The latter has implications for the Agency as a joint regulator for the legislation in conjunction with the Health and Safety Executive.

For both IPPC and COMAH there will be a need for the Agency to inform the public, amongst others, of the full details of its role under the new legislation and the implications this could have for the environment.

involved and the balance between transport and the environment has to be struck.

The Integrated Pollution Prevention and Control Directive due to be implemented in October 1999 covers emissions to all media (air, land and water).

It refers to integrated control and prevention of pollution from 'installations', where one or more of the following categories of activities, subject to certain capacity thresholds, are carried out:

- Energy industries, eg, power stations, oil refineries and gas refineries;
- Production and processing of metals – ferrous and non-ferrous;
- Mineral industry, eg, cement works and glass works;
- Chemical industry – organic, inorganic and pharmaceuticals;
- Waste management, eg, landfill sites, any installation disposing of hazardous waste, some installations recovering hazardous waste, IPC authorisations for sewage sludge incinerators; and
- Other activities, eg, timber pulps production, slaughterhouses, food/milk processing, intensive pig/poultry units, organic solvent users and carbon production.

In accord with sustainable development, it consists of preventing, reducing and eliminating pollution and the Agency has welcomed this as a more holistic approach to environmental management and regulation.



Theme 3: Improving Air Quality

We are committed to helping local authorities to implement the National Air Quality Strategy in agreement with industry, through liaison and the exchange of air quality data and information under the memorandum of understanding, which we operate with local authorities.

Key issue towards 'Improving Air Quality': The need for the Agency and others to be involved in local air quality management fora, so that data and expertise can be shared towards addressing the issues.

It is anticipated that the Government's recently published White Paper entitled 'A new deal for transport - better for everyone' (1998) will lead to greater consideration of the environmental impact of transport on air quality at the planning stage. The Agency would anticipate being involved wherever environmentally sensitive areas or sites are



Theme 4: Managing Waste

Sustainable development as discussed in Chapter 1 is at the heart of the Agency's plans for the management of waste. There has been and always will be discussion concerning waste management facilities such as what type they should be and where they are best located. The two main issues regarding waste are firstly the efficient use of the resources needed to produce the goods, the volumes we produce and consume and secondly the minimisation of the impact caused by the management/disposal of waste that is unavoidably generated. The preferred waste management solution is the minimisation of waste which sits at the top of the hierarchy, followed by options which recoup value and finally disposal (refer to Figure 4 on the following page).

4.0 A BETTER ENVIRONMENT THROUGH PARTNERSHIP



Figure 4: Waste Hierarchy

In 1997, the Producer Responsibility Obligations (Packaging Waste) Regulations were introduced. These Regulations require businesses involved in the manufacture or use of packaging to recover and recycle specific amounts of packaging waste which are dependant upon the scale of their operation. The purpose of the regulations is to enable the UK to meet its EU-imposed obligations of re-utilising at least 50% of its packaging waste by the year 2001.

Key issue towards 'Managing Waste': To achieve a continuing and overall reduction in the impact of wastes on the environment.

Our role as data collector, information provider and impartial advisor sets us apart from the decisions that must be taken by local authorities on the choice of options and the development of facilities which are the subject of Waste Local Plans and unitary Development Plans. We will be working in partnership with several authorities to take forward the concept of sustainable waste management. Partnerships will include work with the Regional Planning Fora, Standing Conference of East Anglian Local Authorities (SCEALA) members, which includes the Waste Planning and Disposal Authority of Suffolk, Norfolk and Cambridgeshire County Councils and the local waste collection authorities, along with industry, and commerce.

A strategy for dealing with waste within Norfolk is set out in the Norfolk Waste Management Plan. To put this plan into action a Waste Management Partnership has been formed by the County Council, District Councils, the Agency and local

business and industry. The aims for the future Waste Management Partnership are:

- To formulate a strategy for the future waste management in Norfolk; and
- To promote initiatives on the 3 'Rs' – reduce, re-use and recycle.

We are involved with the County Councils and Districts in development of a Cambridgeshire and Peterborough Joint Waste Strategy, which is looking at how to tackle the rising quantities of municipal wastes produced in the area. As part of the awareness raising campaign the Agency signed a Memorandum of Understanding with others in the Cambridgeshire Waste Wise (CaWW) project which includes all the local authorities and business partners. CaWW partners are working together to promote a sustainable waste management strategy for Cambridgeshire, with particular emphasis on waste minimisation. The CaWW logo and name will act as a 'branding' tool to raise public awareness of waste issues and sources of information and advice.

Waste minimisation is an important concept that brings about multiple benefits to both industry and the environment. Our goal is to conserve scarce resources, reduce the cost and impact of waste disposal and encourage more efficient and clean processes. The Fenland District Council Waste Minimisation Club was launched on the 17th March 1999 and was well attended by local businesses. It will be called 'Business for Sustainability Network' due to links with both Fenland District Council and Peterborough Chamber of Commerce/Training and Enterprise Council. Once the club is fully functional it is hoped to see waste minimisation in action. We will be actively involved in advising and educating waste producers on the efficient use of resources, how to comply with relevant legislation and how to manage environmental impacts. We are working closely with Fenland District Council to plan future seminars to keep momentum and interest high. We have also forged links with the East Anglian Business Environment Club and automatic subscription will be given to members of the Business for Sustainability Network.

The information we produce must take into consideration the different needs of these bodies. We need to provide data in a format that is of most use to them in discharging their duties. This includes information on waste movements, existing facilities and their capacity, the relative environmental impacts of different types of waste when disposed of or recovered at different types of facilities. This approach will allow the Best Practicable Environmental Options for particular wastes and locations to be assessed. We have

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recently finished the production of national estimates of controlled waste arising from industry and commerce. The results will be used to inform the Secretary of State. This will enable him to prepare a statutory waste strategy in late 1999. The National Strategy will assist local authorities in their consideration of regional planning guidance and preparation of development plans and aid industry who develop and operate the waste treatment and disposal facilities.

We are carrying out an extensive programme of research and development into the environmental burdens, and related impacts, of waste management options from cradle to grave, which is known as Life Cycle Assessment (LCA). LCA is an objective process to evaluate the environmental burdens associated with a product, process or activity by identifying and quantifying inputs to processes and outputs to the environment, the impact of those inputs and releases on the environment, and to evaluate and implement opportunities to affect environmental improvements. A LCA tool will be available to local authorities and industry in late 1999.

This programme will assist all those concerned with waste management in assessing the options and mixes of options available for managing waste. It will help to weigh the importance of the environmental benefits against the wider societal considerations.

The information collected through programmes such as LCA and the National Waste Survey will aid the goal of production of a Strategic Waste Management Assessment for each planning region. These will be technical reports assessing the strategic needs for waste management at a District/Unitary/County and Regional levels.

Waste minimisation is the prevention or reduction of waste at source, recognising that it is cheaper to produce less waste in the first place. We have an education role in getting the waste minimisation message across to industry, local authorities and schools, so influencing reductions in household, commercial and industrial waste. We will provide advice to companies, raise awareness of waste minimisation, contribute to training and education and offer guidance on where more specialised advice is available. We will be seeking opportunities to influence industry via involvement in Local Agenda 21 initiatives relating to waste minimisation and seeking to initiate industry waste minimisation clubs, through Business Links. The Agency will support community based educational campaigns linked to Agenda 21 initiatives and is keen to offer support in this area.

We will investigate all fly tipping incidents within two days of notification. Enforcement action will be taken whenever evidence is available and such action is in the public interest. Consultation is underway with local authorities on a Memorandum of Understanding on dealing with fly tipping.

The best option is not to produce waste in the first place and we all have a role to play in reducing the amount of waste produced. Therefore, we are keen to stage waste minimisation awareness campaigns with green business clubs, county 'Business Link' groups, local authorities, etc.



Theme 5: Managing Our Water Resources

We are committed to reviewing our water resources strategy by December 2000, which will consider our needs up until 2025. This strategy will highlight the need for the Agency, water companies, OFWAT and local authorities to continue to work together to encourage awareness on water conservation and promote efficient water use and supply.

The water companies have a duty to promote efficient use of water by their customers. This duty is regulated by OFWAT, who require the companies to produce water efficiency plans. The Agency is involved through consultation with OFWAT and is keen for demand management and leakage control to be given high priority.

Key issue towards 'Managing Our Water Resources': We need to ensure that LEAPs detail all water quality and resource concerns so that they effectively inform the water companies' asset management planning process. This is a mechanism for real environmental improvement whereby OFWAT, water companies and the Agency determine the priorities for action and agree an appropriate level of customer charging to fund them.

There are opportunities for partnership between the Agency, water companies, developers and local authorities to ensure high standards of water efficiency are achieved in new housing developments.



Theme 6: Delivering Integrated River Basin Management

Integrated river basin management is the need to look at the river corridor habitats as a single entity, rather than looking at individual uses or users in isolation with the aim of balancing potentially conflicting needs. This aim is both intellectually

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and practically challenging to fulfil. However, our success is wholly dependent on the influence of all river users and riparian owners.

WATER QUALITY

Examples of long-term initiatives include increasing the amount of bankside buffer strips. These areas of wilderness cannot only enhance habitats but can also reduce pollution from the land reaching the river. The issue in this case is the need to identify practical steps to implement this policy.

A Surface Water Action Group (SWAG) was formed in 1997 to overcome the problems of the Little Ouse River being regularly polluted by oil discharges from surface water sewers in Thetford. This pollution prevention group consisted of the Agency, Anglian Water, Breckland District Council and key industrialists. This group has met several times and a number of successful initiatives to eliminate contamination have been implemented. It is intended to increase the number of industrialists in SWAG and use it as a forum to educate companies and their employees in pollution prevention measures.

UNSEWERED AREAS

First time rural sewerage connection is normally requested by the relevant local authority from the local Water Company, which in this LEAP area is AWS. Pollution data from the Agency can be supplied to the local authority to assist in their submissions. However, the Agency supplies factual data only and not opinions, as the Agency may have to adjudicate between the local authority and Water Company in the event of a disagreement.

The Agency will continue to investigate complaints due to sewerage pollution in unsewered areas and any results are available for use in the decision making for the need for mains sewerage.

There are known difficulties due to absent or restricted main drainage in the following villages: Boughton; Carbrooke; Chettisham; Great and Little Dunham; Great Ellingham and Kenninghall.

Carbrooke has been identified as a candidate for first time rural sewerage under the AMP3 process by AWS.

Key issue towards 'Delivering Integrated River Basin Management': Identify and resolve water quality issues with Water Companies and local industries.

On the 1st April 1999 the DETR issued Circular 3/99

entitled 'Planning Requirements In Respect of the Use of Non-Mains Sewerage Incorporating Septic Tanks in New Development'. This Circular seeks to promote the adoption of policies, practices and procedures to address problems associated with non-mains sewerage. A detailed assessment is required of the proposals for the disposal of final effluent of non-mains drainage. The circular sets out the type of information required. If such an assessment is not submitted or proposals submitted are assessed to be unsatisfactory, this would normally be sufficient to justify refusal of planning permission.

RECREATION

We have a duty to review and improve public access to inland waters. We should, where feasible, make Agency land available for appropriate recreational use. We have recently produced a National Recreation Plan and this is to be supplemented by a Regional Water Recreation Strategy.

Partnership projects are actively sought by the Agency to improve public access, through the provision of facilities such as stiles and kissing gates. These can benefit a range of users, such as walkers, ornithologists and anglers. We are particularly keen to provide amenities for less able-bodied people.

There are a number of footpaths and public rights of way that use riverbanks within this area, for example, the Fen Rivers Way Project and the Tracks in the Sand Project. The former is a collaborative project between the Agency, Cambridgeshire County Council, East Cambridge District Council, East Waste, Rural Action and Fen Rivers Way Association. The Fen Rivers Way links Cambridge with Ely via a linear footpath along the banks of the Cam and Ely Ouse (17 miles in length). The project has improved the footpath and way-marked it, erected six interpretation boards and produced route maps and associated leaflets. The final stage was completed in July 1998 with the erection of Holtfen Footbridge crossing the mouth of the Old West.

We have since worked with Norfolk County Council to extend the Fen Rivers Way footpath downstream to King's Lynn. Other recognised riverside footpaths, which are already promoted by local authorities, are the Little Ouse Valley, upstream of Brandon, and the Hereward Way.

We have an on-going Research and Development study into the recreational use of flood banks, phase 1 of which has just been completed. Considerable lengths of riverbanks within this area have

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Official opening Holtfen Footbridge

designated footpaths and bridleways or are actively fished by angling clubs. In addition the Ely Ouse and lower ends of the tributaries are statutory navigation waters.

We own a significant amount of riparian land. It is acknowledged that most people participate in recreational activities on or near watercourses take account of the conservation value of the area. However, it is recommended that the Agency should raise the profile of the sustainable approach to the utilisation of rivers and associated habitats, particularly where we are the owners.

Members of the public using our land, be it through formal angling lease agreements or the everyday walkers and birdwatchers, should be encouraged to follow a code of practice. Guidelines for boaters might also be produced in consultation with relevant user groups. There is the potential to develop information leaflets and identify educational initiatives.

Interpretation boards containing useful information on wildlife and areas of historical interest have been installed throughout the LEAP area by the Agency. We are investigating opportunities at our Denver Complex and also collaborating with landowners, such as the Forest Enterprise (on the River Ouse), to install further interpretation boards.

NAVIGATION

'An Action Plan For Navigation' was published by the Agency (1998) which describes how we intend to take forward our integrated and long-term approach to navigation. Our principal aim is to maintain and improve navigation as assets of recreational, environmental, economic and social value. We are broadly supportive of groups who are

interested in furthering navigation beyond the current statutory navigation where justified. However, it should be noted that the Agency already struggles financially to maintain its current navigation responsibilities before considering restoration of other waterways.

We have recently extended navigation on the River Little Ouse at Brandon, from Brandon Stauch to nearer the town centre. The extension of navigation involved constructing a new lock and providing mooring facilities. The River Lark upstream of Jude's Ferry was previously navigable to Bury St. Edmunds and the Inland Waterways Association along with the Inland Waterways Amenity Advisory Council and Forest Heath District Council have expressed an interest in restoring navigation as far as Mildenhall. Similarly, the River Little Ouse was previously navigable upstream as far as Thetford and interest has been shown in restoring some of that stretch for navigation.

We have received European funding to extend mooring facilities on the Ely Ouse at Brandon Creek. We are also supporting an initiative by Littleport Society to develop navigation facilities in the Littleport area.

Navigation in the River Old West has become difficult during recent dry summers due to low water levels. Options to alleviate this would include dredging to deepen the channel and the provision of more water from Hermitage Lock at Earith.

Navigation and recreational facilities are limited and require improving. The increased provision of short-term moorings, waste disposal sites, water points and pump-out facilities are important navigation requirements.

There was concern that when the Eastern Council for Sport and Recreation ceased to exist that there would be no regional forum which would bring together the providers, users and other interested parties. A new smaller body - Eastern Sport - was formed in March 1996. We fully support Zone I of the Water Recreation Strategy of the Eastern Region produced by Eastern Sport and show due regard to its recommendations when drawing up our work programmes.

Key issue towards 'Delivering Integrated River Basin Management': The need to build long-term plans with local authorities to provide sustainable navigation and other recreation in this LEAP area.

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Figure 5: Influences On Land Use Change



Theme 7: Conserving the Land

LAND USE PLANNING

Land use is the single most important influence on the environment and it can be either beneficial or detrimental. The control of land use change is primarily the responsibility of Local Planning Authorities (LPAs). Their development plans (Structure and Local Plans) provide a framework for land use change and are key considerations in the determination of planning applications. These plans reflect Government Policy for the protection of scarce resources eg. high quality agricultural land, (as an important element of sustainability) where MAFF is also a statutory consultee. We have a responsibility to protect and enhance the environment, however, we have limited control over the way that land is developed. Therefore, we have to work closely with the LPAs in order to achieve our environmental aims (refer to Figure 5).

The policies in these plans will guide the way that land is developed. We advise planning authorities to help them to implement plans which protect the environment from harmful development. We reinforce these policies, where possible, when we comment (as a statutory consultee) on planning matters (refer to Figure 6). Those Plans covering the Ely Ouse LEAP are given in Table 5 opposite.

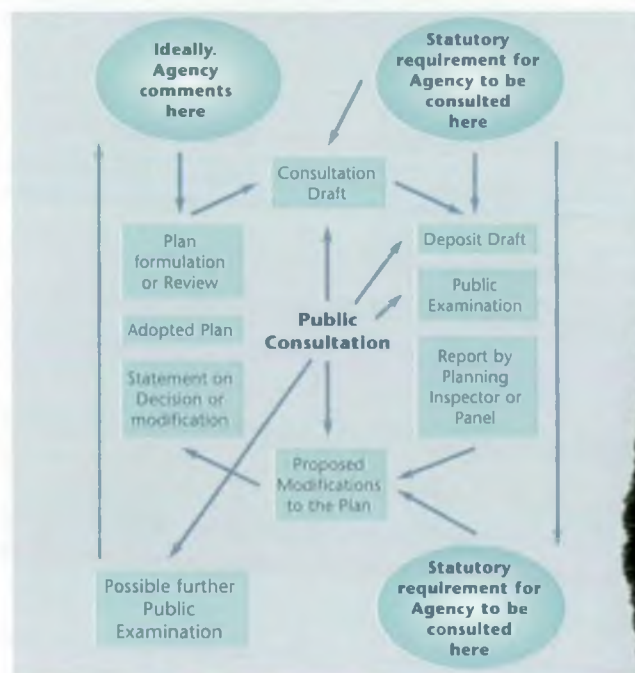


Figure 6: Simplified Development Planning Cycle

It is evident from the table opposite that the development plans are at various stages of review.

We are eager to be consulted on all relevant aspects of the Town and Country Planning Act system and for planning applications. We realise the importance of proper consultation, including support for subsequent issues, if required.

LOCAL PLANNING GUIDANCE

The NRA (one of our predecessor organisations) produced a set of statements in a document 'Guidance notes for Local Planning Authorities on the Methods of Protecting the Water Environment through Development Plans' (1994) which provides a general guide to the policies we believe should be included and why they are important.

This guidance has been updated to cover all the Agency's functions and will be published shortly. We have also produced a document entitled 'Environment Agency - Liaison with Local Planning Authorities' (March 1997) which explains our role and contribution to land use planning system and is intended to help local authority planners in their day-to-day contact with us.

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Table 5: Development Plans

Structure Plans	Current Status
Cambridgeshire County	Adopted December 1995. Review will be undertaken jointly with Peterborough City Council. Capacity Study undertaken in part to begin a review of this plan.
Norfolk County Council	Adopted March 1993. Consultation of the deposit draft review ended in March 1998. Examination in Public November 1998. Panel Report received February 1999. Proposed Modifications May 1999.
Suffolk County Council	Adopted incorporating alterations 1 - 3 in June 1995. Deposit Draft April 1999
Minerals/Waste Plans	Current Status
Although LEAPs can play a role in informing local authorities of local waste management practices and pressures they will not be driving our strategic waste planning work or seeking to identify locations for waste management facilities. We hope to be in a position to assist local authorities and regional planning conferences by producing Strategic Waste Management Assessments and local waste management statements for development planning purposes.	
Cambridgeshire and Peterborough Waste Local Plan	Joint Plan with Peterborough CC. Consultation Draft July 1998. Deposit Draft anticipated late 1999.
Cambridgeshire Aggregates Local Plan	Adopted August 1991, the Plan will be reviewed after the results of the National Aggregates Monitoring Survey.
Norfolk Waste Local Plan	Deposit draft consultation period ended October 1997. Public Local Inquiry January 1999.
Norfolk Minerals Local Plan	Adopted December 1996.
Suffolk Waste Local Plan	Under development.
Suffolk Minerals Local Plan	Public Local Inquiry held May to July 1997. Proposed modifications for consultation November 1998.
Local Plans	Current Status
Babergh District Council	Adopted June 1995. Issues Report January 1999.
Breckland District Council	Deposit draft plan 1996. Public Local Inquiry October 1997. Inspector's Report published December 1998. Proposed Modifications Report April 1999.
East Cambridgeshire District Council	Adopted December 1993 (Ely Local Plan 1991). Deposit Draft plan consultation period ended October 1997. Public local inquiry ended November 1998. Inspectors Report received May 1999.
Forest Heath District Council	Adopted 1995.
King's Lynn and West Norfolk Borough Council	Adopted November 1998.
Mid Suffolk District Council	Adopted September 1998.
St Edmundsbury District Council	Adopted June 1998.
South Cambridgeshire District Council	Adopted June 1993. Deposit Draft Plan review consultation period ended March 1999.
South Norfolk District Council	Deposit Draft May 1997. Public local inquiry April 1999.

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We take a proactive approach to our involvement in the planning system - as well as commenting on regional guidance, structure and local plans, we also consider planning applications in depth.

We are required under Section 105 of the Water Resources Act 1991 and Circular 30/92 'Development and Flood Risk' to carry out a survey of flood defences within our area to define the nature and extent of flood risk. This includes determining the 1:100 year return period floodplain line. A pilot study to determine how this could best be achieved is currently underway. Bury St. Edmunds, Watton, Thetford, Brandon, Soham, Ely, Mildenhall, Ixworth, Mundsford Dalham to Kennet are all incorporated in a priority programme which identifies the sites most at risk. It is intended that this programme is to be undertaken over a three to five year timescale. The results of the survey will ultimately be available to local authorities to aid the production of their development plans. Until this survey information is available, existing flood level records will continue to be used to help guide development.

The planning system generally, and the use of planning conditions in particular, should not duplicate the controls imposed by the pollution control bodies, eg, the Agency and local authority Environmental Health departments. Clarification is provided in Planning Policy Guidance Note 23: Planning and Pollution Control.

Key issue towards 'Conserving the Land': Safeguard limits of floodplain areas, protect storage capacity and extent of the floodplain for flood risk areas. Operational access for maintenance activities must also be considered.

Key issue towards 'Conserving the Land' and 'Managing Our Water Resources': There is a need to ensure that the ability to supply water to new developments is assessed before a decision on the location is made. This would best be facilitated by joint discussions between planners, water companies and ourselves at the earliest possible stage.

Groundwater resources are put at risk by a wide range of human activities. These can range from specific point sources of pollution to diffuse pollution of varying intensities. These activities are controlled by legislation and may also be subject to guidelines and codes of practice which have varying degrees of statutory force. We have set some rules and guidelines as to which activities can be permitted or recommended within different Groundwater Protection Zones. These are clearly tabulated in our Groundwater Protection Policy document. The aim of this is to assist in the

prevention of contamination of land and groundwater through human activities.

Key issue towards 'Conserving the Land': Source Control is the umbrella term for managing surface water run-off from developed areas in such a way that the water is returned to ground or stored in reservoirs or wetlands and released in a controlled manner. The aim is to minimise the risk of flooding and pollution - whilst working with nature. Examples include permeable pavements, swales and balancing ponds. There is a need to promote best practice in such techniques and encourage local authorities and developers to adopt them - whilst appreciating the need to consider their long-term maintenance. Our long-term aim is to be able to advise where such techniques are applicable as part of an overall drainage assessment.

Whilst development does not actually produce water, it does increase run-off rates, it is unlikely that rural watercourses will have any residual capacity to cope with even relatively small increases in flow rates.

Where downstream watercourses cannot be improved because of riparian ownership or physical constraints it is common to attenuate surface water flows to the pre-development run-off rates. The attenuation of flows results in the need to store waters in associated balancing lagoon, pond or tank. The English Common Laws relative to riparian rights are well proven and when evoked are very powerful. With this in mind, it is prudent for the LPA to ensure that all drainage works and associated structures are publicly adopted in perpetuity with the development served.

Road transport is not our responsibility however it does affect the environment and cuts across many of our nine themes. Through our National Centre for Risk Analysis and Options Appraisal we have influenced the recent government review of trunk road schemes to highlight the potential impact they may have on the water environment and so that future plans take into account environmental impact. We consult with road builders and contractors to promote good environmental practice as road construction can have a detrimental impact on the environment. Nationally we are also working on a risk assessment of road transport to be published later this year. It will provide a way of assessing the impacts that future transport policy options may have on the environment.

Another issue with long-term implications is the

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management of contaminated land and 'brownfield' developments. In this case environmental protection can only be secured through the successful collaboration between local authorities, the Agency, owners and developers.

Many of the landfill sites that were closed prior to the Control of Pollution Act 1974 may be producing landfill gas. Gases such as methane are explosive and therefore have the potential to damage local properties. Other gases such as carbon dioxide can cause asphyxiation. These sites may be subject to consideration under Contaminated Land Regulations that are due the end of 1999.



Theme 8: Managing Our Freshwater Fisheries

The Agency's vision for fisheries is for all waters of England and Wales to be capable of sustaining a healthy and thriving fish population to give everyone the opportunity to experience a diverse range of good quality fishing. Effective monitoring and regulation will maintain the high standard of fisheries within the Ely Ouse LEAP area.

A five-year routine survey programme looks at the abundance and distribution of fish stocks, from species targeted by anglers to those protected under the Habitats Directive, for example, the

spined loach.

Key issue towards 'Managing our Freshwater Fisheries': Undertake appropriate liaison with interested parties with regard to all fisheries activities in the Ely Ouse LEAP area.



Theme 9: Enhancing Biodiversity

This is an aspiration that no single organisation can bring about. We are committed to playing our part in devising and implementing Local Biodiversity Action Plans (BAPs) and Water Level Management Plans (WLMPs).

Key issue towards 'Enhancing Biodiversity': We need to ensure that the targets agreed in BAPs and WLMPs become incorporated into the routine work of the Agency and these partner organisations so that real environmental improvements can be demonstrated.

The benefits of the partnership approach can be demonstrated by the progress of the Water Level Management Plans within this LEAP area. These plans are developed in conjunction with other environmental organisations, such as, English Nature and RSPB.

Table 6: Water Level Management Plans

County	Site	NGR	Status
Cambs	Brackland Rough	TL 632 699	IMS prepared.
Cambs	Chippenham Fen	TL 648 697	No progress of IMS or WLMP.
Cambs	Snailwell Meadows	TL 678 638	IMS prepared.
Cambs	Wicken Fen	TL 555 705	WLMP complete and endorsed by EN.
Norfolk	Didlington Park Lakes	TL 777 963	WLMP complete and endorsed by EN.
Norfolk	Great Cressingham Fen	TF 845 023	WLMP complete and awaiting endorsement from EN.
Norfolk	Hooks Well Meadow	TF 838 011	WLMP complete and endorsed by EN.
Norfolk	Swangey Fen	TM 015 932	WLMP complete and endorsed by EN and the Otter Trust.
Norfolk	Thetford Golf Course and Marsh	TF 845 838	WLMP complete and endorsed by EN, awaiting endorsement from Forest Enterprise.
Suffolk	Blo Norton & Thelnetham Fen	TM 017 789	WLMP complete and awaiting endorsement.
Suffolk	Cavenham/Icklingham Heaths (Fen)	TL 755 733	WLMP complete and endorsed by EN.
Suffolk	Lackford Lakes	TL 806 707	IMS prepared.
Suffolk	Little Ouse Washes (not notified)	TL 675 856 TL 726 867	IMS prepared - no WLMP planned until notification.
Suffolk	Pakenham Meadows	TL 934 686	WLMP complete and endorsed by EN.
Suffolk	Stallode Wash, Lakenheath	TL 675 853	WLMP complete and endorsed by EN.
Suffolk	Wangford Warren/Carr	TL 758 833 TL 757 841	WLMP complete and endorsed by EN.

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4.2 Local Agenda 21 and Biodiversity Action Plans

LOCAL AGENDA 21

Agenda 21 came out of the 1992 Earth Summit at Rio de Janeiro and the concept is to set an agenda for action for the 21st century at a local level. It emphasises the need to encourage local action to implement the aims of global environmental policy; in other words 'think globally, act locally'. This was one of a number of agreements signed by some 150 countries, which include conventions on climate change and biodiversity. 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 response to the Earth Summit, the government has produced a number of strategy documents. These include the UK Sustainable Development Strategy and more recently it has published 'Indicators of Sustainable Development in the United Kingdom'. This sets out a comprehensive list of aspects of sustainable development that should be measured and identifies indicators for each.

Local authorities are seen as the focus for promoting and encouraging local community action. Since the Earth Summit, local authorities have been charged with producing a Local Agenda 21 (LA21) for their area which aims to encourage wider access to information, greater community participation in decision making and the adoption of sustainable development principles. We support that approach by providing information, expertise and support. An Agency LA21 Information Pack was launched in March 1998.

At a local level, most councils are working with communities, employers and industry to produce their own Environmental Reports/Action Plans and subsequently their own LA21 programmes. For example:

- Cambridgeshire County Council's Environment 2000 - a Strategy for Action (July 1997) included a review of the County's State of the Environment report and is now complete. Work and consultation on LEAPs is still on-going;
- Cambridgeshire and Peterborough State of the Environment Report 1998 has now been published;
- Suffolk County Council has launched 'Suffolk's Environment...towards sustainable development'. The County Council has also produced a document entitled 'Framework for Action in 1997, Local Agenda 21' to raise public awareness of sustainable development and to gauge public opinion; and
- Norfolk County Council is to produce a State of the Environment Report in 1999.

In addition, numerous groups and forums have been established such as the Cambridgeshire LA21 Round Table, the Norfolk 21 Initiative and at a district council level, the Breckland Environmental Forum.

Key issue towards achieving a 'LA21': The need to determine with local authorities how we can appropriately link the issues being generated by LA21 and the Agency's routine work including LEAPs. We are supporting the initiative but the long-term implications and resource needs have not yet been considered.

BIODIVERSITY ACTION PLANS

The UK Action Plan published in 1994 sets out the broad strategy for conserving and enhancing wild species and wildlife habitats in the UK for the next 20 years. The stated overall goal is 'to conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity'. Biodiversity will be a key indicator of the successful implementation of sustainable development in the plan area.

At a local level, local authorities and environmental organisations, including the Agency, are compiling BAPs which will include targets for specific habitats and species (many of which are relevant to this LEAP area such as wetlands and aquatic species, eg, reedbeds, otter and freshwater mussels).

It is crucial to the success of the BAP process that a comprehensive ownership is achieved in a realistic timescale. The Action Plans should not only be the vision of participating organisations but be shared by others throughout each county. Plans will not be achieved unless landowners, farmers and managers are involved in the decision-making process so wider community involvement is encouraged.

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Table 7: Status of Biodiversity Action Planning in the Ely Ouse LEAP Area

County	Partners Involved	Document	Date	Habitats
Cambridgeshire	Cambridgeshire CC Peterborough CC RSPB Agency Wildlife Trust for Cambridgeshire Cambridge City Council East Cambridgeshire DC Fenland DC Huntingdon DC South Cambridgeshire DC English Nature Landscape 2000 Anglian Water	Cambridgeshire Local Biodiversity Action Plan	1999	Fens Floodplain Grazing Marsh Reedbeds Cereal Field Margins Species-rich Ancient hedgerows Lowland Calcareous Grassland Road verges
Norfolk	Norfolk WT English Nature Norfolk County Council RSPB Environment Agency MAFF	Action for Wildlife: Biodiversity Action Planning in Norfolk	1999	Cereal field margins Ancient &/or species rich hedgerows Coastal and floodplain grazing marsh Lowland heath Fens Reedbeds Saline lagoons Seagrass beds Mesotrophic lakes
Suffolk	Suffolk WT RSPB English Nature Agency Suffolk CC (Chair) District Councils Suffolk FWAG Suffolk Biological Records Centre	Suffolk Local Biodiversity Action Plan	1999	Cereal field margins Ancient &/or species rich hedgerows Coastal and floodplain grazing marsh Lowland heathland Fens Reedbeds Saline lagoons Seagrass beds Wet woodland Lowland wood pasture and parkland Lowland hay meadows Lowland dry acid grassland Eutrophic open water

This information was downloaded from the JNCC Website.

Biodiversity Action Plans can be obtained from the Biodiversity Co-ordinator of the relevant County Council.

4.3 Education and Awareness

One of our key objectives for environmental protection and improvement is education. Damage is often caused, not through malicious intent to harm the environment but through a lack of awareness. Therefore, we feel we need to have a greater involvement in education at all levels. Our education strategy 'Green Shoots' (1997) which considers education into the next century, outlines the following goals:

- to help educate young people through teaching aids and other initiatives;
- to improve understanding of environmental issues, through links with education, work placements and an awards scheme;
- to work with industry and produce marketing campaigns to promote prevention of pollution rather than its remediation;
- to foster public awareness of environmental issues to encourage responsibility for the environment and its challenges; and
- to build on established and create new international relationships to further sustainable development.

A range of education material is already available on request.

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We perceive education to include all aspects of our society, not just education through schools and colleges. We will be one of a number of organisations working in this realm and we are open to suggestions for joint approaches. We hope to see environmental topics dovetail into the national curriculum and are committed to providing information to 'A' level and university students where reasonable and achievable.

We welcome any feedback on how the Agency could get more involved within the Ely Ouse LEAP area.



5.0 FUTURE REVIEW AND MONITORING

We will be jointly responsible, with other identified organisations and individuals, for implementing this LEAP. Progress will be monitored and normally reported annually. These Annual Reviews will examine the need to update the LEAP in light of local change. The period between major revisions will normally be five years.



APPENDIX 1: DUTIES, POWERS AND INTERESTS

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

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

These are all dealt with by your Local Planning Authority, who will contact us if necessary.

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

The following table summarises our duties, powers and interests and their relationship to land-use planning.

Water Resources: The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Grant or vary water abstraction and impoundment licences on application. ● Revoke or vary existing licences to reinstate flows or levels to surface-waters or groundwater which have become depleted as a result of abstraction, and are subject to a liability for compensation. ● Secure the proper use of water resources through its role in water-resources planning, the assessment of reasonable need for abstractions and promotion of more efficient use of water resources. ● Monitor and enforce abstraction and impoundment licence conditions. 	<ul style="list-style-type: none"> ● The more efficient use of water by water companies, developers industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and layout of the infrastructure. 	<p>The Agency is committed to water-demand management and will work closely with water companies and developers, local authorities and relevant organisations to promote the efficient use of water. The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water-conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.</p>

Flood Defence: The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Control, through Land Drainage consents, development or construction of a structure that would affect the flow of an ordinary watercourse (Water Resources Act, 1991 Section 109, Land Drainage Act, 1991 Section 23). ● Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991. ● Undertake works to main rivers using permissive powers. ● Issue flood warning relating to main river to the public, local authorities and the police. ● Consent mineral workings within 16 metres of main rivers. 	<ul style="list-style-type: none"> ● Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. Local Planning Authorities grant this permission. ● Installation of surface water source control measures e.g. flood attenuation structures. ● Supervising the maintenance of ordinary watercourses which is a Local Authority remit, but may impact on main rivers. ● Installation of buffer zones which reduce flood risk and have significant environmental benefits. ● Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance. 	<p>As a statutory consultee on planning applications within main-river floodplains, the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development.</p> <p>The Agency will encourage best practice, including source-control measures and common standards, among Local Authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood-warning dissemination plans and supports their endeavours to protect communities at risk.</p>

APPENDIX 1: DUTIES, POWERS AND INTERESTS

Water Quality: The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwater, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Issue discharge consents to control pollution loads in controlled waters. ● Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharge consents. ● Prosecute polluters and recover the costs of clean-up operations. 	<ul style="list-style-type: none"> ● The control of runoff from roads and highways. This is a Highway Agency duty. ● The greater use of source-control measures to reduce pollution by surface-water runoff. ● Prevention and education campaigns to reduce pollution incidents. 	The Agency will liaise with Local Authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source-control measures. As a statutory consultee on planning applications, the Agency will advise Local Planning Authorities on the water-quality impact of proposed developments.

Air Quality: The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Regulate the largest technically complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, BATNEEC and BPEO. ● Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes. 	<ul style="list-style-type: none"> ● The vast number of smaller industrial processes which are controlled by Local Authorities. ● Control over vehicular emissions and transport planning. 	<p>The Agency provides data on IPC processes and advice on planning applications to Local Authorities. The Agency is willing to offer its technical experience to Local Authorities on the control of air pollution.</p> <p>The Agency wishes to liaise with Local Authorities in the production of their Air Quality Management Plans.</p> <p>The Agency will advise and contribute to the government's National Air Quality Strategy.</p>

Radioactive Substances: The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public. 	<ul style="list-style-type: none"> ● The health effects of radiation. 	<p>The Agency will work with users of the radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are safely and appropriately disposed of.</p> <p>The Agency will work with MAFF to ensure that the disposal of radioactive waste creates no unacceptable effects on the food chain.</p> <p>The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites.</p> <p>The Agency will work with the HSE on worker-protection issues at non-nuclear sites.</p>

Waste Management: The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Vary waste management licence conditions. ● Suspend and revoke licences. ● Investigate and prosecute illegal waste management operations 	<ul style="list-style-type: none"> ● The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and Local Planning Authorities. The Agency, as a statutory consultee on planning applications, can advise on such matters. 	The Agency will work with waste producers, the waste-management industry and local authorities to reduce the amount of waste produced, increase reuse and recycling and improve standards of disposal.

APPENDIX 1: DUTIES, POWERS AND INTERESTS

Contaminated Land: The Agency has a duty to develop an integrated approach to the prevention and control of land contamination ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> Regulate the remediation of contaminated land designated as special sites. Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. Report on the state of contaminated land. 	<ul style="list-style-type: none"> Securing with others, including Local Authorities, landowners and developers, the safe remediation of contaminated land.s. 	The Agency supports land remediation and will promote this with developers, Local Authorities and other stakeholders.

Conservation: The Agency will further conservation, wherever possible, when carrying out water-management functions; have regard to conservation when carrying out pollution-control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> The Agency has no direct conservation powers, but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation. 	<ul style="list-style-type: none"> The conservation impacts of new development. These are controlled by Local Planning Authorities. Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to Local Authorities and developers to protect the integrity of such sites or species. Implementation of the UK Biodiversity Plan for which it is the contact point for 12 species and one habitat. 	The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, Local Authorities, conservation bodies and landowners to conserve and enhance biodiversity.

Landscape: The Agency will further landscape conservation and enhancement when carrying out water-management functions; have regard to the landscape when carrying out pollution-control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> The Agency must further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution-control powers. 	<ul style="list-style-type: none"> The landscape impact of new development, particularly within river corridors. This is controlled by Local Planning Authorities. 	The Agency produces River Landscape Assessments and Design Guidelines which it uses when working with Local Authorities and developers to conserve and enhance diverse river landscapes.

Archaeology: The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> The Agency must promote its archaeological objectives through the exercise of its water-management and pollution-control powers and duties. 	<ul style="list-style-type: none"> Direct protection or management of sites or archaeological or heritage interest. This is carried out by LPAs, County Archaeologists and English Heritage. 	The Agency will liaise with those organisations, which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.

APPENDIX 1: DUTIES, POWERS AND INTERESTS

Fisheries: The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Regulate fisheries by a system of licensing. ● Make and enforce fisheries bylaws to prevent illegal fishing. ● Promote the free passage of fish and consent fish passes. ● Monitor fisheries and enforce measures to prevent fish-entrainment in abstractions. ● Promote its fisheries duty by means of land-drainage consents, water abstraction applications and discharge applications. 	<ul style="list-style-type: none"> ● The determination of planning applications which could affect fisheries. 	Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and Local Authorities to protect fisheries.

Recreation: The Agency has a duty to promote rivers and water space for recreational use.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management. 	<ul style="list-style-type: none"> ● Promotion of water sports. This is done by the English Sports Council and other sports bodies. 	The Agency will work with the Countryside Commission, the English Sports Council, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.

Navigation: The Agency has a duty to maintain and improve navigation.

The Agency has powers to:	The Agency has an interest (but no powers in):	Partnership
<ul style="list-style-type: none"> ● Maintain river navigation. ● Maintain and operate locks and associated weirs and sluices whilst providing access to these sites. ● Provide services such as moorings and pump-out facilities. ● Maintain navigation by a system of licensing. ● Enforce navigation legislation. 	<ul style="list-style-type: none"> ● The management and operation of British Waterways navigations and other navigations within the region. 	The Agency will work with British Waterways, navigation authorities and navigation users to improve navigations generally as valuable environmental, recreational, commercial and heritage resources.

APPENDIX 2: THE ROUTINE WORK OF THE AGENCY

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

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

Regulating the environment takes place through licensing. The Agency manages licences for abstraction of water from rivers and boreholes, releases to air and water, the carrying and disposal of waste and to carry out work in, over, under or near a watercourse. Within Central Area we manage over 3,200 water abstraction licenses, 3,200 consents to discharge to water, 300 waste management licences, 77 authorisations under Integrated Pollution Control for processes which make releases to air and 70 permits for radioactive materials and waste. We determine approximately 400 applications each year to work on or near water.

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

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

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

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

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

Although we operate an extensive regulatory framework our actual control over development is limited. We therefore depend upon effective liaison with planning authorities. We liaise with planning authorities under the Town and Country Planning legislation and Government planning guidance by providing co-ordinated responses on development plans and planning applications in order to:

- advise on where proposed development may pose a risk to the public or to property from pollution and/or flooding;
- protect the environment from any possible adverse effects of development;
- wherever possible, enhance the environment in conjunction with development proposals;
- identify demands on our duties and responsibilities, including flood protection, water resource management, conservation and recreation; and
- avoid unnecessary conflict between the use of planning conditions and any possible consents or licences required by the Agency.

Close co-operation between planning authorities and ourselves is essential for effective environmental protection and progress towards more sustainable forms of development.

APPENDIX 3: ABBREVIATIONS AND GLOSSARY

Abbreviations		Protection Act 1990		Zones	
AEG	Area Environment Group	FRCA	Farming and Rural Conservation Agency	OFWAT	Office of Water Services
AOD	Above Ordnance Datum	IDBs	Internal Drainage Boards	PWS	Public Water Supply
AMP	Asset Management Plan	IMS	Interim Management Statement	RAF	Royal Air Force
AWSL	Anglian Water Services Ltd.	IPC	Integrated Pollution Control	RAS	Radioactive substances
BAP	Biodiversity Action Plans	IPPC	Integrated Pollution Prevention & Control	REC	River Ecosystem Classification
BOD	Biochemical Oxygen Demand	IWA	Inland Waterways Association	RSPB	Royal Society for the Protection of Birds
CIMAH	Control of Industrial Major Accident Hazards Regulations 1984	LA21	Local Agenda 21	SCEALA	Standing Conference of East Anglian Local Authorities
CMP	Catchment Management Plan	LCA	Life Cycle Assessment	SLD	South Level Datum
CoCo	Countryside Commission	LIFE	Lotic Invertebrate Flow Evaluation index	SMD	Soil Moisture Deficit
COMAH	Control of Major Accident Hazards Regulations	LPA	Local Planning Authority	SSSI	Site of Special Scientific Interest
CO2	Carbon Dioxide	LEAP	Local Environment Agency Plan	STW	Sewage Treatment Works
cSAC	Candidate Special Area of Conservation	MAFF	Ministry of Agriculture Fisheries & Food	SWAG	Surface Water Action Group
DETR	Department of the Environment, Transport and the Regions	MoD	Ministry of Defence	UK	United Kingdom
DO	Dissolved Oxygen	NFU	National Farmers Union	UWWTD	Urban Waste Water Treatment Directive
EC	European Community	NRA	National Rivers Authority	WLMP	Water Level Management Plan
EN	English Nature	NVZ	Nitrate Vulnerable	WQO	Water Quality Objective
EPA90	Environmental				

APPENDIX 3: ABBREVIATIONS AND GLOSSARY

Glossary

Above Ordnance Datum Land levels are measured relative to the average sea level at Newlyn in Cornwall. The average level is referred to as 'Ordnance Datum'. Contours on Ordnance Survey maps of the UK show heights in metres above Ordnance datum.

Abstraction The removal of water from any source, either permanently or temporarily.

Aerosol Tiny particles of liquid or powder which stay suspended in the atmosphere.

Agenda 21 A comprehensive programme of worldwide action to achieve a more sustainable pattern of development for the next century. UK Government adopted the declaration at the UN Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro in 1992.

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

Aquifer A water bearing stratum situated below ground level. The water contained in aquifers is known as groundwater.

Asset Management Plan Water Companies' Strategic Business Plans - initiated (eg AMP 2) by OFWAT as part of the periodic review of water company charges.

Biochemical Oxygen Demand A standard test which measures over 5 days the amount of oxygen taken up by aerobic bacteria to oxidise organic (and some inorganic) matter.

Biodiversity Diversity of biological life, the number of species present.

Borehole Well sunk into a water bearing rock.

Brownfield Sites Previously developed sites.

Buffer strip Strip of land 10-100 m wide, which is used and managed to provide appropriate habitat types.

Catchment The total area from which a single river system collects surface run-off.

Coarse Fish Freshwater fish other than salmon and trout.

Consent (Discharge) A statutory document issued by the Agency. It can authorize entry and indicate any limits and conditions on the discharge of an effluent to a Controlled Water. A land drainage consent is an approval for specified structural works in areas under Agency control.

Consultee In both the Environment Agency's and other agencies' legislation there are requirements for consultation. Comments and objections which are received are noted but do not usually have the power to, in themselves, prevent the controlling authority from making a decision. An exception to this is where the Agency is Statutory Consultee, where the Agency's requirements would be taken as the minimal acceptable.

Controlled Waste Industrial, household and commercial waste, as defined in UK legislation. Controlled waste specifically excludes mine and quarry waste, wastes from premises used for agriculture, some sewage sludge and radioactive waste.

Controlled Waters All rivers, canals, lakes, groundwaters, estuaries and coastal waters to three nautical miles from the shore, including the bed and channel which may for the time being be dry.

Countryside Stewardship Scheme Scheme initially set up by Countryside Commission and now administered by FRCA on behalf of MAFF in which landowners are grant aided to manage their land in an environmentally sensitive manner.

Dissolved Oxygen The amount of oxygen dissolved in water. Oxygen is vital for life so this measurement is an important, but highly variable, indicator of the 'health' of the water. It is used to classify waters.

District Local Plans Statutory documents produced by District or Borough Councils to implement the development strategy set out in County Structure Plans. Specific land use allocations are identified.

EC Directive A type of legislation issued by the European Community 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 biological, chemical and physical sense.

Effluent Liquid waste from Industry, agriculture or sewage treatment plants.

APPENDIX 3: ABBREVIATIONS AND GLOSSARY

Environmental Protection Act 1990 Legislation controlling the protection of the environment in all its forms, including air, land and water.

Eutrophic A description of water which is rich in nutrients. At worst, such waters are sometimes beset with unsightly growths of algae.

Fish Biomass A measure of the quality of a fishery as found in terms of surveys. It is expressed in terms of weight by area, i.e. g/m².

Floodplain This includes all land adjacent to a watercourse over which water flows or would flow but for flood defences in times of flood.

Fluvial Relating to the freshwater river.

Fly-tipping The illegal dumping of waste in places such as hedgerows, lay-bys, fields even on streets and in parks.

Gauging Station A site where the flow of a river is measured.

Global Warming The increase in the average temperature of the earth, thought to be caused by the build up of greenhouse gases.

Habitat The customary and characteristic dwelling place of a species or community.

Headwater Primary watercourses having no tributaries.

In river needs The totality of requirements for the water environment and effluent dilution before abstraction is taken into account.

Integrated Pollution Control An approach to pollution control in the UK which recognises the need to look at the environment as a whole, so that solutions to particular pollution problems take account of potential effects upon all environmental media.

Internal Drainage Boards Statutory bodies charged, under the Land Drainage Act 1991, with providing a flood protection and water level management service to both developed and agricultural areas within their defined drainage districts.

Landfill The engineered deposit of waste into or onto land in such a way that pollution or harm to the environment is minimized or prevented and through restoration to provide land which may be used for another purpose.

Landfill Gas A by-product of the digestion by micro-organisms of putrescible matter present in waste deposited in landfill sites. The gas is

predominantly methane (64%) together with carbon dioxide (34%) and trace concentrations of other vapours and gases.

Leachate Liquor formed by the act of leaching.

Local Agenda 21 At the Earth Summit in Rio de Janeiro in June 1992, world leaders signed a global environment and development action plan called Agenda 21. The majority of Agenda 21 cannot be delivered without the commitment and cooperation of local government. Each local authority is encouraged to adopt its individual Local Agenda 21 - its own sustainable development strategy at the local level, involving partnerships with other sectors, such as the Environment Agency, businesses, community and voluntary groups.

Local Plan A statutory document that sets out detailed policies and specific proposals for the development and use of land.

Lotic Invertebrate A measure of the impact of variable flow regimes on the macroinvertebrate communities of a river.

Flow Evaluation Index Every invertebrate family and species have been assigned to different flow groups depending on their primary ecological affiliation.

Main River The watercourse shown on the statutory 'Main River Maps' held by the Agency and MAFF. The Agency has permissive powers to carry out works of maintenance and improvement on these rivers.

Nitrate Vulnerable Zone Where a ground or surface water is formally identified as being polluted by nitrate from agriculture, the area of land draining to that water may be designated as a Nitrate Vulnerable Zone. In December 1998, all those farming within designated NVZs became responsible for implementing a set of compulsory, uncompensated measures (the Action Programme), controlling the rates and timing of nitrogen applications to their land.

OFWAT Office of Water Industry's Financial Regulator of Water Service Companies.

Particulates Fine solid particles found in the air or in emissions.

Permissive Powers Powers which confer on the Agency the right to do things but not the duty.

Public Water Supply The supply of water by companies appointed as Water Undertakers by the Secretary of State for the Environment under the Water Industry Act 1991.

APPENDIX 3: ABBREVIATIONS AND GLOSSARY

Radioactive Substance Sites There are two main types of certificates (Registration and Authorisations) that pertain to these types of sites, which are regulated under Radioactive Substances Act 1993. Registrations are issued to regulate the storage and use of radioactive materials and Authorisations are issued to regulate the accumulation and disposal of radioactive wastes.

Ramsar Wetland site of International Importance that is designated under the Ramsar* convention (*a town in Iran where the international convention originally agreed in 1975 to stem the progressive encroachment on, and loss of, wetland).

Return Period Refers to the frequency of a rainfall or flooding event. Flood events are described in terms of the frequency at which, on average, a certain severity of flow is exceeded. This frequency is usually expressed as a return period in years, eg, 1 in 50 years.

Riffle A shallow area in a river where the substrate is composed of gravel and the flow is faster.

Riparian Owner of riverbank and/or land adjacent to a river. Normally owns river bed and rights to mid-line of channel.

River Basin The total area from which a single river system collects water.

River Corridor The continuous area of river, river banks and immediately adjacent land alongside a river and its tributaries.

Scheduled Ancient Monument The key sites nationally for archaeology, designated by the Secretary of State for National Heritage, through English Heritage.

Septic tank A tank used for the treatment of sewage from properties without mains drainage. The sewage is settled and some bacterial treatment occurs. Discharge of effluent is usually to a soakaway system.

Site of Special Scientific Interest A site given a statutory designation by English Nature because it is particularly important, on account of its nature conservation value.

Slackers Pipe and valve systems through which water is transferred between high- and low-level water courses.

Sludge The accumulation of solids from treatment processes. Sludge can be incinerated or spread on farm land.

Sluice Structure to control upstream river levels and downstream flows.

Soakaway System for allowing water or effluent to soak into ground, commonly used in conjunction with septic tanks.

South Level Datum The zero point is 100 metres below Ordnance Datum Newlyn (ie sea level) ie 100 mSLD = 0 m AOD. (Refer to Above Ordnance Datum.)

Spray Irrigation The watering of crops by spraying which can have a high impact on water resources.

Special Area of Conservation Areas (land and sea) that contribute most to the survival of species and habitats listed in the Habitats Directive.

Soil Moisture Deficit The drying out of soil, occurring when the loss of water by evapotranspiration is greater than rainfall.

Structure Plans Statutory documents produced by County Councils outlining their strategy for development over a 10-15 year time scale.

Surface Water Water collecting on and running off the surface of the ground.

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

S105 Surveys Section 105 of the Water Resources Act 1991 allows for Standards of Service, Assets and Flood Risk Surveys.

Water Level Management Plan A written statement which provides a means by which the water level requirements for a range of activities in a particular area can be balanced and integrated.

Water Table Top surface of the saturated zone within the aquifer.

Weir A dam built across a river to raise upstream levels.

Wetland An area of low lying land where the water table is at or near the surface for most of the time, leading to characteristic habitats.

1:10 Year Drought/Flood A drought/flood event with a statistical probability of occurring once in a ten year period (other periods may be specified in a similar way).

APPENDIX 4: USEFUL AGENCY PUBLICATIONS

1997-1998 Annual Review (1998)
1999/2000 Corporate Plan Summary (1998)
A Guide to Information Available to the Public
A Price Worth Paying: The Environment Agency's proposals for the National Environment Programme for water companies 2000-2005, a submission to government (1998)
An Environmental Strategy for the Millennium and Beyond (1997)
Annual Environmental Report for the Agency's Own Activities 1997/8 (1997)
Blue-Green Algae
Complete Guide To Fishing in the Anglian Region
Corporate Plan 1999-2000: Our Forward Look to 2002 (1998)
Emergency Arrangements
Fisheries Byelaws (Environment Agency)
Flood Warning Information - Rivers Kennett, Lark, Little Ouse and Thet
Guardians of the Environment - Environment Agency Corporate Brochure
Guidance for the Control of Invasive Plants near Watercourses (1996)
Integrated Pollution Control: An Introductory Guide (1997)
Integrated Pollution Prevention Control (IPC/RAS series)
Liaison with Local Planning Authorities (1997)
Policy and Practice for the Protection of Floodplains (1997)
Policy and Practice for the Protection of Groundwater (1998)
Process Industry Regulation (IPC/RAS series)
Prospects for Spray Irrigation
Protecting the Environment
Radioactive Substances Regulation (IPC/RAS series)
Recreational Waterways Byelaws in the Anglian Region
Regional Plan Summary 1996/97
State of the Environment - An IPC Perspective
The Denver Complex Ely/Ouse/Essex Water Transfer Scheme
The Environment of England and Wales - A Snapshot (1996) (updated on Agency website)
Tide Tables 1998 volume 2 (Norfolk, Suffolk and Essex)
Using Water Wisely
WASTE - Strategic Waste Management Survey Landfill within the East Midlands Planning Region
Waterways - The Anglian Heritage
Welcoming Waterways Navigation Pack
Welcoming Waterways User's Guide

More information is available from our website at <http://www.environment-agency.gov.uk> including an up-to-date national State of the Environment Report

APPENDIX 5: CONSULTATION RESPONDENTS

47 letters were received in response to the Draft LEAP and are summarised in the document entitled Statement of Consultation. The respondents were:

Anglian Water Services Ltd
Archer & Archer (for Ely IDBs)
J A Askew & Partners
Breckland Council
British Trust for Ornithology
Bury St Edmunds Trout Club
Cambridge Motor Boat Club
Cambridgeshire Canoeing Association
Cambridgeshire County Council
Mr W B Carter
Croxtan Park Ltd
East Anglian Waterways Association Ltd
Elveden Farms Ltd
English Nature, Norfolk
English Nature, Bedfordshire/Cambridgeshire/Northamptonshire
Environment Agency, Regional Headquarters
Friends of the Earth, Mid Suffolk
FWAG, Suffolk
B J & P M Gooderham
Histon & District Angling Society
IWA, Cambridge
IWA, Head Office
W O & P O Jolly
King's Lynn & West Norfolk Borough Council
Kirk Hall Farms
Lark Angling & Preservation Society
Philip Lee
Loveys Marine
Miss M M P MacRae
MAFF, Nobel House SW1P 3JR
John Major MP
Middle Level Commissioners
Mildenhall IDB
Norfolk Landscape Archaeology
Norfolk Wildlife Trust
Northwold IDB
The Ramblers Association
River Thet Catchment Water Resources Group
Mr A E Sexton
P F Southgate Ltd
Stoke Ferry IDB
Stringside IDB
Suffolk County Council (Countryside Service)
Suffolk Wildlife Trust
H T Thornton & Son
Mr R J Upton
Watton Produce Co Ltd

APPENDIX 6: AEG SUB-GROUP AND PROJECT TEAM DETAILS

Project Team

Pat Sones: Water Resources Manager (Project Executive)
Rona Chelley: Team Leader - LEAPs (Project Coordinator)
Alan Rich: Team Leader - Planning Liaison
Pauline Jones: Tactical Planning Officer
Terry Clough: Senior Biologist
Julie Barker: Water Resources Engineer
Andy Newton: Flood Defence Engineer
David Berridge: Environment Protection Officer

Representatives of the Great Ouse Area Environment Group (AEG)

Dennis Ford
Colin Clare
David Jones
Richard Hall
Derek King
Robin Upton
Ingrid Floering Blackman

MANAGEMENT AND CONTACTS:

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

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

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

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111


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

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
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