EA-Southern LEAPS

Box 3

local environment agency plan

ADUR AND OUSE

CONSULTATION DRAFT

APRIL 1999

ENVIRONMENT AGENCY

YOUR VIEWS

The Environment Agency welcomes your views on the future management of the area.

What do you think?

- Have all the important environmental issues been identified?
- Have all the potential options and solutions to issues been identified?
- Is the vision for the area your vision?
- Do you have any other information or ideas you would like to share?
- In what way can you or your organisation work in partnership with the Agency to improve the Adur and Ouse catchment.

This Consultation Draft is about the Adur and Ouse catchment Area. It is the Agency's first appraisal of the status of the environment in this area and we hope that this report will be read by everyone who has an interest in the quality of the environment. Your views will help us develop an Action plan, which will focus on updating the Consultation Draft by turning the options for action into actions that will make a difference.

COMMENTS ARE REQUIRED BY 11 AUGUST 1999

Please send your written comments to:

The Customer Services Manager,
Environment Agency,
Sussex Area Office,
Saxon House,
Little High Street,
Worthing
West Sussex BN11 1DH
Tel: 01903 215835
Fax: 01903 215884

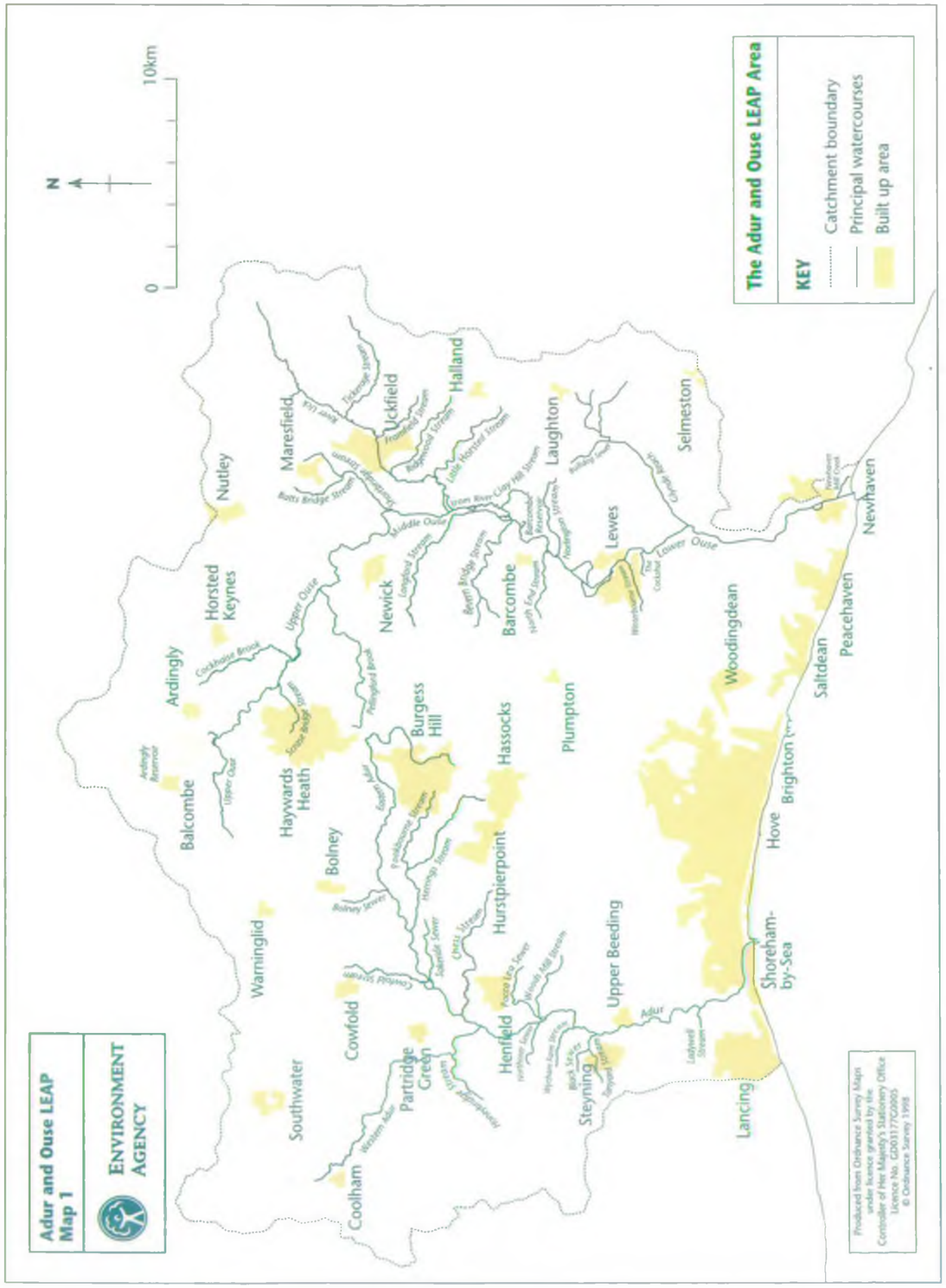
Privacy Note

Response to this consultation is purely voluntary. The content of all responses will be used by the Agency to assist it in carrying out its statutory duties and the general details will be made public (this includes informing the applicant). Unless you specifically request otherwise or indicate that your response is confidential, we will make public (and provide to the applicant) your name and address and a general summary of your comments in response to this consultation. If you have no objection to or would prefer the full content of your response being made public and copied freely please indicate this in your response.

Your right of access to the information held and right to apply for rectification of the information are as prescribed in current data protection legislation.

Published April 1999

Catchment Overview



Adur / Ouse Area Key Details

General

Area	1072.69km2
Coastline	40.2km

Administrative Details

Local Authorities: % of Area	
East Sussex County Council	52.4%
West Sussex County Council	47.6%

Population

Year	Population
1991	500 000
2001 (Estimate)	511 000

Water Resources

Average Annual Rainfall 838mm/yr

Number of licensed abstractions
Surface Water 56
Groundwater 68

Water Companies
SEW
SWS Sussex

Conservation

Sites of Special Scientific Interest	26
Special Areas of Conservation	2
Special Protection Areas	1
National Nature Reserves	2
Areas of Outstanding Natural Beauty	2

Fisheries

Length of EC Designated Fisheries (km):

Cyprinid	83.60
Salmonid	0

Water Quality

River ecosystem classification as % of the Adur/Ouse catchment between 1995 and 1997

Class

RE1	4
RE2	16
RE3	12
RE4	10
RE5	7
Total	49

Number of EC Designated Bathing Waters 5

Pollution Prevention & Control

Landfill Sites (Inert)	5
Landfill Sites (Biodegradable)	5
Waste Treatment/Processing Plants	3
Metal Recycling Stations	13
Incinerators	0
Transfer Stations	16

Integrated Pollution Control Authorisations

Discharge to Air	0
Effluent Discharges	0

Flood Defence

	Length (km)
Coastline including main tidal waters	40
Main River including tidal lengths	290
Sea Defences Agency responsibility	13.5

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 an unique opportunity to look at our environment in an integrated way.

Local Environment Agency Plans (LEAPs) provide a means for the Agency to identify local environmental concerns and pressures and set priorities to solve problems so as to protect and improve the environment in a co-ordinated way. The Adur and Ouse LEAP Consultation Draft is the second of three to be produced in the Sussex Area. Our primary aim has been to identify environmental issues and concerns in the Plan area taking into account comments received through external consultation and advice given by the Sussex Area Environment Group (AEG). This committee comprises local people, local authority members and environmental and industrial representatives who advise upon our operations in Sussex.

The opportunity has also been taken to use the Plan to provide information about the Agency's activities. We hope this will help everyone to comment on the issues and actions put forward and to highlight other issues which we may not have identified.

On completion of the Consultation period, the issues and actions identified together with the comments received will enable the Agency to assess the relative priorities for future actions in the Plan area. Such actions will be identified in the final plan and these will be forwarded into the Sussex Area's Business Plan. Hence, in responding to the Consultation Draft, all participants can influence the priorities and hence expenditure of the Agency.

It is hoped that this LEAP will help to provide a focus for everyone interested in the environment to undertake and achieve environmental improvements in a sustainable manner. It will, together with other plans for the Sussex Area, represent a shared vision for the future and play an important role in the protection of our environment, whilst recognising the ever competing pressures on the environment and the need to balance cost and benefit.

I would thank you for your time spent studying this plan and welcome any comments you may wish to make.

Peter Midgley
Sussex Area Manager

OUR VISION AND AIMS

Our Vision:

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

We will do this by:

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

VISION FOR THE ADUR/OUSE AREA

We all want a better environment for ourselves and our children. Yet we also need homes to live in, places to work in, food to eat and water to drink, all of which place increasing pressures on the environment. The challenge of managing the environment is to respond to such pressures, by balancing the many social, economic and environmental demands.

The Environment Agency's vision is to create a better environment in England and Wales for present and future generations. In Sussex we aim to meet this vision through the continued protection of and improvement to the safety of people, property and the natural environment. We aim to manage our activities and duties to address local concerns and promote environment enhancement in a manner which is sustainable for the future.

In this area, as in the rest of Sussex, the continued maintenance and improvement of sea defences will be a priority so as to provide effective protection to people and property. There will always be a risk of flooding however, be it from the sea or the rivers, and hence we will continue to improve our flood warning service for people in flood risk areas.

We will strive to protect and enhance the important biodiversity in the area and, in particular, opportunities to restore natural rivers and wetlands degraded by engineering works and urbanisation will be forwarded where possible.

New development has and will continue to impose increased pressures on the environment in the area. The Agency will continue to work with local authorities to minimise the impacts of development through good design, promoting concepts of water demand management and source control to make the most effective use of our limited water resources, forwarding waste minimisation and recycling initiatives and ensuring the protection of floodplains. Opportunities to seek environmental enhancements through the planning systems will also be promoted through liaison with local authorities and effective input into Development Plans and planning decisions.

Education initiatives will be forwarded as the key to influencing and changing the actions of individuals and other organisations. Working with industry, hospitals and schools will ensure a proactive approach to implementing environmental initiatives. Individuals however, must also be made aware of the significant role each person has to play in protecting the environment. By our own actions we can, either at home or work, make a difference by preserving natural resources, saving energy and recycling waste.

The Agency's vision for the area cannot, however, be achieved alone. We will therefore initiate and forward partnerships with others and seek opportunities for gaining external funding to forward environmental initiatives. Together we can make the difference.

CONSULTATION DRAFT

CONTENTS

1.0 THE ENVIRONMENT AGENCY

Background

1.1 The Environment Agency has a wide range of duties and powers relating to different aspects of environmental management. These duties, together with those areas where the Agency has an interest but no powers in are described in more detail in Appendix 1. The Agency is required and guided by Government to use these duties and powers in order to help achieve the objective of sustainable development. The 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.*"

1.2

The Principal Aim of the Environment Agency

"... is to protect and enhance the environment, taken as a whole, so as to make a positive contribution towards achieving sustainable development ..."

Environment Act 1995

1.3 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. We therefore have to reflect this in the way we work and in the decisions we make.

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

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

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

1.7 Perhaps the major international issue is that of climate change. The UK is a contributor to the emission of gases such as carbon dioxide into the atmosphere which are believed to contribute to long-term climate changes. The UK will also be affected in a complex way as and when the climate does change. It is therefore a signatory to the Framework Convention on Climate Change, as agreed at the Rio Summit in 1992, and subsequent agreements at the Kyoto Summit in 1997. It 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.

1.8 One of the key outcomes of the United Nations "Earth Summit" held in Rio de Janeiro in 1992 was agreement by governments that, in order to solve global environmental problems, local action is crucial. We must all therefore think globally but act locally. The Local Agenda 21 initiative sets out actions needed to achieve sustainable development, including the need to make clear the links which exist between local life-styles and the use of resources.

1.9 In the UK plans have now been formulated by local government and local communities to identify and address a wide range of environmental issues including natural resource use, pollution, health, local amenity and quality of life. These programmes set out long-term solutions that take account of global implications, such as the use of resources that affect the global environment and thus local communities in other parts of the world.

1.10 Against this background the Agency has drawn up an Environmental Strategy to deal with the major problems by an integrated approach to the management of the whole environment. This approach has led to the identification of nine environmental themes which will be used for the Agency's planning processes:

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

When to Contact Us

1.11 The Agency has a duty to protect and improve the environment as a whole, not only through its operational and regulatory roles, but also in the general advice we give to the public. The following table describes in detail proposals for development, works and usage where prior consultation with us is advised:

Table 1: Proposals where Prior Consultation with the Agency is Advised

Proposal	Reason
Works within or adjacent to any watercourse including outfalls, weirs, piping, ponds, diversions, infilling, bridges and planting.	Ensure flooding is not exacerbated, access to and along watercourses is retained, and water quality, conservation, recreation and fisheries are protected.
Works in areas at risk to flooding from rivers and the sea, including development and land raising/infilling.	Ensure flooding is not exacerbated, access to and along watercourses is retained, and water quality, conservation, recreation and fisheries are protected.
Works on, under or adjacent to any floodbank, sea defence or other flood control structure.	Ensure integrity of flood defences is retained and flood risk is not exacerbated.
Works on aquatic/wetland sites.	Ensure flooding is not exacerbated, protection of water quality and conservation.
Works on contaminated or potentially contaminated land, e.g. former landfill, gas works, industrial use, fuel/chemical storage or production or close to a landfill site or major industrial process.	Address pollution, waste disposal and gas permeation concerns.
Development involving the disposal of foul sewage other than to public foul sewer including the use of septic tanks, cesspits, private sewers and private sewage treatment plants.	Protect environment from pollution.
Development greater than half a hectare in area.	Ensure increased surface water run-off from development does not exacerbate flooding.
Use, storage, transfer or disposal of radioactive material.	Control and monitoring of radioactive material to ensure the protection of public health.
Waste Management operations, including movement of waste, landfill, waste transfer stations, incinerators, scrapyards, recycling plants.	Ensure effective disposal of waste with no unacceptable risk of pollution and harm to public health.

Proposal	Reason
Commercial and industrial development.	Ensure no unacceptable risk of pollution and increased flood risk, and effective waste disposal.
Agricultural operations including livestock and poultry units, chemical and fertiliser storage, silage manufacture/storage and disposal of manure.	Promote effective disposal of waste and farming practices and ensure no unacceptable risk of pollution.
Works involving fisheries including fishing licences, fish stocking, fish farming and fish transport.	Protect health of fish within the natural environment and ensure no increased risk of pollution to water.
Ponds, lakes and reservoirs.	Protect stream flows, ensure flooding is not exacerbated and fish movement is not obstructed. Protect and enhance conservation and ensure waste disposal and pollution implications are addressed.
Works within areas of environmental and archaeological designation.	Protection of species, habitats and archaeological remains.
Abstraction of water from surface water or groundwater sources.	Protection of water resources, natural environment and existing water users.
Works incorporating any infill or excavation operation.	Ensure the protection of environment from pollution and address waste disposal and flooding concerns.

Local Environment Agency Plans (LEAPs)

1.12 We are committed to delivering environmental improvement at the local level, and our policy and Environmental Strategy will be translated into delivery on the ground through LEAPs. First and foremost LEAPs identify work the Agency needs to do in a local area in order to address local concerns and meet our statutory obligations in line with national targets. LEAPs are public documents subject to a wide consultation in their preparation and we believe that this process will build trust in the community by being open and frank when dealing with all issues.

1.13 In addition, we know that the Agency alone cannot bring about the achievement of national environmental goals and targets. Through LEAPs, therefore, we hope to identify and develop partnerships with Local Authorities, representatives of local communities, regulated organisations and other bodies

with similar environmental objectives and responsibilities so as to make the most effective use of limited resources. In this context LEAPs will examine and promote the ways in which the Agency can co-ordinate its aims, objectives and actions in a locality, with those of others to best effect. Finally LEAPs will also be a practical source of data and guidance for all those who wish to become involved in local environmental management and improvement, notably Local Authorities and environment and community groups.

1.14 Each LEAP will take a long term view of local environments and set out a five year plan of action for solving local issues. Published Draft Consultation Reports will cover all parts of England and Wales, including the Southern Region of the Environment Agency, by the end of 1999. This is only the first milestone in what will be an ongoing national programme of LEAPs, which will be regularly updated, developed and improved.

The LEAP Process

1.15 We aim to establish a common vision for environmental objectives and a consensus on future tactics, actions and priorities. Participation and preliminary consultation has already taken place with our Sussex Area Environment Group (AEG) and key local organisations (Appendix 2) to produce this draft Plan and the Environmental Overview. This Report is intended to be the means by which consultation can be extended as widely as possible.

Figure 1 THE LEAP PROCESS

The LEAP Consultation Draft

1.16 The LEAP Consultation Draft concentrates on the prioritisation of environmental issues relevant to the Environment Agency and the identification of possible options for action necessary to restore and improve the local environment. This document is the main focus for public consultation. The issues, and options for action put forward to address these are brought forward from the Environmental Overview and have been structured around the Agency's nine environmental themes. These themes aim to protect and enhance the environment in an integrated way and contribute towards sustainable development.

1.17 The launch of this Consultation Draft marks the start of a three month period of formal consultation enabling external organisations and the general public to work with us in planning the future of the local environment.

This is the first output of the process and is not the Final Plan.

It gives you an opportunity to:

- highlight any issue/actions not already identified within the area.
- work towards establishing and implementing a five year action plan.

Please send your response in writing to the LEAP Officer at the address given on the cover of this report.

1.18 An Environmental Overview is produced as a separate document and is a factual description and analysis of the local environment, looking at the impact of stresses on its state, and generating a list of issues for consideration by the Agency and others. The Environmental Overview supports the Consultation Draft and provides the background to the issues.

The Final Plan

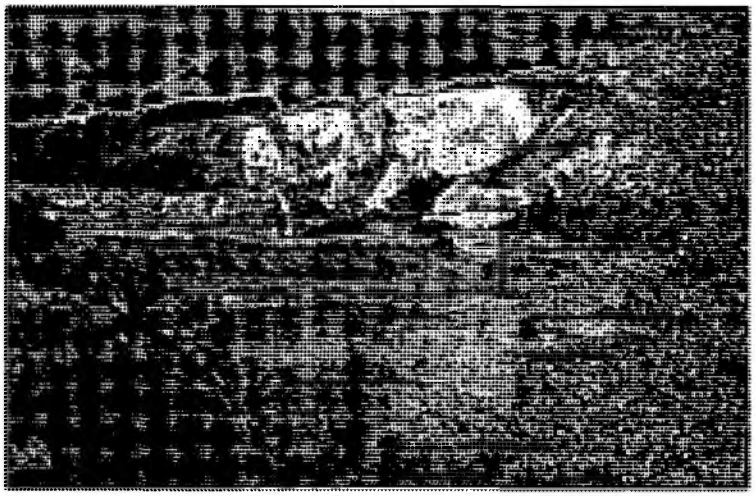
1.19 The final LEAP Plan will summarise and take into account the results of consultation and will contain a list of prioritised actions that take account of costs and benefits, identifying timescales and partner organisations. Agreed actions will be incorporated into the Agency's annual Business Plans.

The Annual Review

1.20 The Agency will monitor implementation of the LEAP and report on progress in a published Annual Review. The Annual Review will also identify any additional actions needed to maintain progress in the light of any changes in the LEAP area and also whether any actions need removing or amending where they are no longer appropriate. After five years, or sooner if required, the Agency will carry out a major review of the progress that has been made. At this stage the Agency will produce a new LEAP Consultation Draft to reflect these changes to further improve the local environment.

2.0 THE ADUR AND OUSE CATCHMENT

2.1 The Adur and Ouse LEAP area is characterised by a concentration of urban development along much of the coast, including the larger towns of Hove and Brighton, and the port areas of Shoreham and Newhaven (see Map 1). Inland, the area is principally rural with a number of small and medium sized towns and villages. Main inland towns include Lewes, Uckfield, Haywards Heath and Burgess Hill. A large proportion of the rural area is included in the nationally designated High Weald and Sussex Downs Areas of Outstanding Natural Beauty (AONB) and the South Downs Environmentally Sensitive Area (ESA). Much of the remaining rural area is covered by local statutory and non-statutory landscape designations. The area also possesses a wealth of local, nationally and internationally designated areas of ecological importance, principally related to coastal and chalk grassland features. Settled for thousands of years, the catchment has a rich archaeological and built heritage, and a wealth of designated areas of ecological importance.



2.2 The LEAP is within the area covered by the Regional Planning Guidance for the South East (RPG9), published in March 1994 and covering the period from 1991 to 2011. This guidance, which is currently under revision, recognises the need to work towards securing the objectives of sustainable development and aims to influence planning policies in Structure and Local Plans to secure the best development strategy for the region. The LEAP area is covered by two Structure Plans, those of West Sussex and East Sussex, five district plans and the Brighton and Hove unitary authority plan.

2.3 The LEAP area includes large tracts of the South Downs which have been heavily developed for water supplies for the coastal towns. The chalk aquifer provides a high quality and low cost supply which has enabled the towns along the coast to expand. Large tracts of the chalk downland were formerly owned by the municipalities as a protection measure to safeguard these supplies, and this has provided a legacy of open farmland which gives agricultural and recreational value to the area.

2.4 The River Adur and River Ouse catchments have been heavily engineered in their lower reaches, particularly since 1945, as a result of major drainage schemes to increase agricultural productivity. These have taken the form of re-grading and re-sectioning the river and tributaries, flood bank construction and

the installation of pumps to reduce surface water levels. Reductions in the strategic need to retain a certain quality agricultural land over the last decade provide a potential opportunity to reverse the river engineering of the past and restore the Adur and Ouse catchments to a more natural and sustainable system.

2.5 The mouths of both rivers have been diverted over the last few centuries by the constant piling up of shingle. Such shingle banks, which are a common feature of the Sussex coastline, are created by longshore drift, a process by which sand and shingle are moved

continuously by the action of wind and tides. The maintenance of the shingle banks are a particular issue for coastal defences to protect lowlying coastal areas to protect low lying coastal areas from tidal flooding. The character of the shingle beaches has contributed to the successful development of the area for amenity and tourism.

2.6 The Adur flows through Henfield Levels, important wetlands, on through the Shoreham Gap where the valley is designated an AONB, and thence to join the sea at Shoreham. The Shoreham Port Authority is responsible for the canal to the east of the harbour entrance and the estuary up to the Toll Bridge.

2.7 The upper tributaries of the Ouse are characterised by abandoned iron working sites. Iron ore was extracted from the Wealden Clay from the Iron Age through to the Middle Ages. The Ouse has a rich history of navigation, with two companies operating barges for transportation of goods during the 18th and 19th centuries until the development of the railway, and use for watermills.

2.8 The area is predominantly rural and agricultural with the inland towns of Lewes, Haywards Heath, Uckfield, Burgess Hill and scattered smaller villages. Urban areas are largely confined to the coastal strip with the main towns of Brighton, Hove, Shoreham-by-Sea, Lancing, Newhaven and Peacehaven.

2.9 Most of the coastal settlements, except Shoreham and Newhaven, developed because of the holiday trade. Brighton grew from the tiny fishing village of Brighthelmstone to the large town we know today largely because of the patronage of the Prince Regent, later to become George IV. It is now, with Bournemouth and Blackpool, one of the country's premier holiday resort which has sustained its popularity through conferences and expansion of other services such as language schools. Peacehaven is an entirely 20th century

phenomenon, sold as plots in the 1920s to attract people to an isolated location on bleak chalk cliffs. Most people within the catchment live in the coastal area, principally in the greater Brighton conurbation. Shoreham is an important freight port and Newhaven has a ferry fort to Dieppe.

2.10 A large proportion of the rural area is included in the nationally designated High Weald and Sussex Downs AONB and the South Downs Environmentally Sensitive Area (ESA). The latter seeks to retain traditional farming practices. Much of the remaining rural area is covered by local landscape designations. The area has rich archaeological and built heritage, and a wealth of designated areas of ecological importance.

2.11 There is demand to increase the Rights of Way system, particularly in the river valleys. The best known path is the South Downs Way, which is a national trail running from west to east along the chalk ridge. The development of cycleways is important, including links with the national cycle network being promoted by Sustrans. Within easy reach from London, the area is important for recreation and amenity.

2.12 There is limited industry in the area and most employment is associated with agriculture and tourism/recreation. Sussex has been placed under considerable pressure to accept large amounts of new development, particularly housing. West Sussex in its structure plan has resisted much of this pressure by arguing that the county has reached its environmental capacity, although this has not been accepted by government. Substantial new developments are proposed at Burgess Hill, Haywards Heath and the area between Southwater and Billingshurst. This represents a shift away from the traditional growth in the coastal areas. The Agency seeks to promote environmental enhancement through the Planning system.

2.13 New development imposes pressures on the environment but can also offer opportunities for environmental enhancement. The Agency is proactively encouraging creative and sustainable water demand management techniques, including water-efficient devices and grey water reuse where appropriate creative design can forward such initiatives. Source control and sustainable surface water management to control run-off are also vital elements of sustainable development. The Agency is also promoting sustainable waste management practices through regulation, planning, local waste minimisation and recycling initiatives, data acquisition and influencing the market.

2.14 The Adur and Ouse area has important environmental resources which are already under some stress from existing uses and will be placed under further strain from additional development pressures and increasing recreational demands. The groundwater in the area is considered to be fully exploited by existing use and the agency has a presumption against issuing further abstraction licences from the chalk.

2.15 Generally the rivers are good quality, support coarse fisheries and more limited game fisheries. The upper reaches of the rivers have a typical pool and riffle topography and support good populations of small brown trout. In common with all the Sussex rivers, both rivers have a good run of sea trout, particularly the Ouse. Wetlands and riverine habitats have been lost or degraded through previous engineering practices and development. There are now opportunities for restoration and enhancement.

2.16 There are also pressures on existing waste management facilities from existing rates of disposal. At present, some 97% of wastes from the LEAP area are disposed of in landfill sites, the capacity of which is becoming limited to only a few years void space. In order to achieve sustainable waste management, levels of minimisation, reuse and recycling need to be increased for industrial, commercial and household wastes.

3.0 ENVIRONMENTAL ISSUES AND OPTIONS FOR ACTION

Introduction

3.1 This section of the LEAP details environmental issues which may need to be addressed within the Final Plan for the area. We have identified this initial list of issues from our own review of the environment, together with the views of our Area Environment Group (AEG) whose members represent a wide range of interests in the Sussex Area. We have also, through consultation, considered the concerns and aspirations of organisations with particular interests and responsibilities in the area.

3.2 We held discussion meetings with our AEG and various departments of East Sussex and West Sussex County Councils in the area, as well as English Nature, Southern Water Services and South East Water. We invited comment by correspondence with other organisations interested in the area and Appendix A lists organisations contacted during this preliminary consultation. We have incorporated comments and ideas wherever possible and we are grateful for the contribution of the time and effort of respondents and consultees.

3.3 The initial list of issues presented in this Consultation Report is intended to encourage debate and to seek your views on the environmental issues which face the Adur & Ouse catchment. Many of the issues are inter-related and this reflects the need for integrated environmental management. The issues are presented in a summary matrix and categorised according to our 9 principal themes for action as detailed in our Strategy for the Millennium and Beyond (1997). In the following section a background to each issue is presented and potential options for action are suggested. The issues were identified from an assessment of the existing environment and the pressures upon it. Further information is detailed in the Environmental Overview which can be obtained, if required, from the Agency.

3.4 The issues are not arranged in any particular order of relative importance. Detailed costings of options for actions have not been made but estimations are given: High (H - above £250,000), Medium (M - £50,000 - £250,000) and Low (L - below £50,000). It should be noted that such estimated costs are a total for any action and, therefore, could often be shared between a number of organisations.

3.5 It can be assumed throughout that the 'Do Nothing' option incurs no financial cost at present and this could be considered as an advantage. However, it has to be remembered that this is only a short-term situation since by not addressing the issues, costs will only be delayed (and maybe compounded).

Summary Matrix

Issue No.	Description	Environmental Strategy Themes*								
		Climate Change	Air Quality	Water Resources	Biodiversity	Freshwater Fisheries	Integrated river-basin Management	The Land	Waste	Major Industries
	ADDRESSING CLIMATE CHANGE									
1	Climate Change will reduce the Effective Protection Provided by Sea Defences	√					√	√		
	IMPROVING AIR QUALITY									
2	The Need to Raise Awareness of and Improve Air Quality		√							√
	WATER RESOURCES									
3	Sustainable Water Resources Management must be Forwarded in order to Meet with Demands from Public Water Supplies			√	√		√			√
4	Managing Pressures for Use of Water in the River Ouse			√	√	√	√			
	ENHANCING BIODIVERSITY									
5	Action is Required to Further the Protection and Enhancement of Biodiversity			√	√	√	√	√		
	MANAGING FRESHWATER FISHERIES									
6	Promote Sustainable Fisheries				√	√	√			
7	The Free Passage of Sea Trout and Coarse Fish is Restricted by obstructions in the Rivers				√	√	√			

* *From: Environmental Strategy for the Millennium and Beyond, Environment Agency, 1997*

Issue No.	Description	Environmental Strategy Themes*								
		Climate Change	Air Quality	Water Resources	Biodiversity	Freshwater Fisheries	Integrated river-basin Management	The Land	Waste	Major Industries
	DELIVERING INTEGRATED RIVER BASIN MANAGEMENT									
8	Lack of Water Level Control due to the Deterioration of Land Drainage Structures and Equipment can Impact on Conservation, Fisheries and Navigation			√	√	√	√			
9	Loss and Degradation of Wetland and Riverine Habitats				√	√	√			
10	Compliance with EU Standards and Agency Objectives for Water Quality					√	√			√
11	Intermittent Pollution of Watercourses				√	√	√		√	
12	Poorly Maintained Private Sewage Treatment Facilities and Septic Tanks lead to Water Quality Problems						√			
13	Increased Access to the Water Environment for Recreation must be Compatible with Flood Defence and Conservation Duties				√	√	√			
14	Speeding Recreation Boats are Accelerating Bank Erosion				√	√	√			
	CONSERVING THE LAND									
15	Opportunities to Conserve Heritage in River Areas						√			

Issue No.	Description	Environmental Strategy Themes*								
		Climate Change	Air Quality	Water Resources	Biodiversity	Freshwater Fisheries	Integrated river-basin Management	The Land	Waste	Major Industries
16	Standards of Protection Afforded by Sea Defences	√			√		√	√		
17	Standards and Maintenance of Tidal Embankments	√			√		√	√		
18	Development Pressures and the Promotion of Sustainable Surface Water Management	√		√	√		√	√		
19	The Need to Protect Floodplains						√	√		
20	The Impact of the New Contaminated Land Regulations							√	√	
	MANAGING WASTE									
21	The Sustainable Management of Wastes must be Forwarded to Reduce the Impact of Waste on the Environment							√	√	√
22	The Capacity of Existing Landfill Sites for the Disposal of Wastes will be Utilised within Six Years							√	√	
23	Illegal Waste Disposal (Fly Tipping) must be Controlled in Liaison with Local Authorities				√	√	√	√	√	
24	Potential Increase in Land Application of Wastes			√	√		√	√	√	
25	Licensed Waste Management Sites not Meeting Environmental Targets			√	√		√	√	√	
26	Potential Risk of Water Pollution from Closed Landfills			√	√		√	√	√	

Issue No.	Description	Environmental Strategy Themes*								
		Climate Change	Air Quality	Water Resources	Biodiversity	Freshwater Fisheries	Integrated river-basin Management	The Land	Waste	Major Industries
27	Management of Ports Wastes								√	
	REGULATING MAJOR INDUSTRIES									
	No issues identified									

ENVIRONMENTAL ISSUES AND POTENTIAL OPTIONS FOR ACTION

ADDRESSING CLIMATE CHANGE

Issue 1: Climate Change will Reduce the Effective Protection provided by Sea Defences

Background: There is concern that the impacts of climate change will reduce the standard of protection provided by sea defences to land and property from flooding by the sea. In particular shingle embankments will be susceptible to sea level rise and increased impact of waves. This is particularly relevant in areas of intensive development along the coast.

Issue No. 1	**Climate Change will reduce the Effective Protection provided by Sea Defences**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Reduced standard of defence in long-term. Increased flood risk to land and property with risk to life.		
Review standards of Sea Defence	Accurate baseline information to assess risk and evaluate options	Resources Cost	L	Agency Local Authorities
Monitor climate change impacts	Enable better management of defences	Resources Cost	L	Agency Local Authorities
Promote schemes to improve standard of defences	Reduced risk of flooding	Resources Cost	H	Agency Local Authorities

IMPROVING AIR QUALITY

Issue 2: The Need to Raise Awareness of and Improve Air Quality

Background: The Agency is committed to helping the Government deliver the National Air Quality Strategy (1997) which sets statutory air quality standards (AQSs) for eight key pollutants and objectives to be achieved by 2005. We do this primarily through the regulation and authorisation of emissions to air (and to water and land) from major industrial processes through Integrated Pollution Control (IPC) under EPA 90. There are no breaches of AQSs known to be caused by authorised IPC processes in the LEAP area. Road traffic-related pollution is thought to be causing breaches of the AQS for ground-level ozone (O_3) in urban areas in the summer on a regional scale, and high concentrations of nitrogen dioxide (NO_2) in excess of the AQS near major roads in Brighton, Hove, Shoreham and Lewes. Local authorities and the Agency in Sussex co-ordinate local air quality monitoring and information provision through the Sussex Air Quality Group. Air quality will be an important local issue in new proposals for an incinerator in East Sussex, which is being promoted through the East Sussex Waste Local Plan (1999), and for the new Shoreham power station which has received authorisation from the Agency.

Issue No. 2	**The Need to Raise Awareness of and Improve Air Quality**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing		Limited liaison on AQ		
Continue to promote AQ improvement through the Sussex AQ Group	Co-ordinated environmental planning. Improved AQ	Resources	L	Local Authorities Agency

WATER RESOURCES

Issue 3: Sustainable Water Resources Management must be Forwarded to Meet Public Water Supply Demands

Background: There is a perceived concern by the public and various organisations that there are insufficient water resources in the south to meet future demands. The greatest pressure on water resources is from public water supplies and this is a particular issue for the south-east due to rising per capita household consumptions, development pressures, and the predicted effects of climate change. Reliable yields are being reassessed throughout England and Wales to consider climate change predictions and sustainability of our environmental resources. Successive investigations have shown that, at the regional level, there are sufficient resources available or capable of development to meet needs now and in the future. This depends on it being managed according to sustainable principles and on it being

shared between different companies. In 1997, the Water Resources in the South East Forum was created with all the water companies in the south-east, the Agency, Ofwat and DETR. Together, we are working to develop a sustainable water resource strategy for the next 30 years and the potential impact of development scenarios upon water resources in the south-east region has been presented to SERPLAN for consideration in the revision of regional planning guidance (RPG9).

Within the Southern Region our strategy for sustainable water resources continues to be founded on promoting demand management; new resource development; protecting existing resources; transferring supplies from areas of surplus to areas of deficit; and ensuring sufficient water resources for environmental needs.

Demand Management: The Agency will continue to promote the implementation of demand management options, water conservation and reuse measures, where appropriate, into local development plans. Demand management promotes policies and measures to control the consumption and waste of water. These can include leakage control, metering, use of water-efficient devices and equipment (e.g. low volume washing machines and reduced-flush WCs) and water/waste minimisation initiatives by business and industry. Waste water recycling and reuse creates opportunities for retaining water resources in the catchment. Studies are needed to assess environmental impact, benefits and costs but there may be opportunities in this catchment.

Protection of Existing Resources: The need to protect existing groundwater resources from pollution is vital and, for example, development pressures north of Brighton and Hove may encroach onto a Groundwater Protection Zone. New regulations, which come into force in April 1999, will require further pollution prevention measures for certain activities to ensure protection of groundwater.

Supply Transfers: The shortfall in resources anticipated by South East Water (SEW) in the short-term are to be resolved by bulk transfer of treated water supplies between Barcombe and Arlington. In the medium to longer term, the company favours strategic transfers which would be dependent upon additional resources being available from increasing the size of Southern Water's Darwell reservoir to the east in the Rother catchment. The Company is also considering the possibility of raising Ardingly reservoir by 0.5 m. This is discussed further in the next Issue No. 3 Optimise Abstraction, Regulation and Management of the River Ouse.

Environmental Needs: The Agency has presented its National Environment Plan (NEP) which includes those environmental improvements considered necessary as part of the water companies' investment commitments for this Periodic Review (AMP3). The Government has announced support for these proposals but negotiations are continuing and final decisions will be made by the regulator Ofwat later in 1999 (see also Issues No. 4, 6 and 9). We are continuing to evaluate the possible effects of climate change regionally and nationally and with the water companies, as an essential component of our strategic water resource planning. We are not yet in a position to assess the potential impact on this catchment but as further information becomes available we will apply it to these local resources.

Issue No. 3	Sustainable Water Resources Management must be Forwarded to Meet Public Water Supply Demands			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	No cost in short term	Continuing uncertainty over sustainability of current management		
Continue long term water resource planning for the south-east	Sustainable use of water resources	Cost	H	Agency Water companies Ofwat DETR SERPLAN GOSE
Promote proactive role in development planning	Reduce pressure on environment and extend water resource balance	Resources	L	Agency Local Authorities Water companies
Promote and encourage further demand management and water conservation	Sustainable use of water resources. Long term cost savings	Public acceptance Initial costs and resources	L	Agency Water companies Ofwat Local Authorities Developers Public Industry Agriculture
Develop waste minimisation initiatives with business and industry	Reduce water usage Reduced costs to business and industry	Resources	L	Agency Business Link Local Authorities Industry Water companies
Promote wastewater recycling and reuse	Retains water in catchment. Reduces water demand	Studies needed to assess cost and risk	M	Water companies Agency Industry
Develop and implement strategy for targeting activities which pose particular risk to groundwater	Protect and enhance groundwater quality	Resources Cost	M	Agency Local Authorities Industry

Issue 4: Managing Pressures for Use of Water in the River Ouse

Background: There are many pressures on the use of water in the River Ouse catchment and balancing these requires careful management. The river has a rich history of navigation and supports many uses including fisheries, flood defence for agricultural interests, and, more recently, abstraction for public water supply. This has resulted in a legacy of complex arrangements of structures, such as weirs and pumping stations, to regulate the flow and levels in the river (see also Issue No. 8). There is also a need to ensure sufficient water resources to support the protection and enhancement of wetland and riverine species and habitats. (See Issue No. 9).

Water is abstracted at Barcombe by South East Water (SEW) for public water supply. The Ardingly reservoir was constructed in the late 1970s and impounds the headwaters of the Ouse north of Haywards Heath. Stored water is released to regulate river flow and support the abstraction at Barcombe which is controlled by a complicated licensing arrangement between the water company and the Agency. The licence relies on flow measurement at Shellbrook and Ardingly, which is complicated due to the number of structures and the requirements to maintain river water levels for other uses. The situation is made even more complex by the water retaining weirs and sluices between the reservoir and Barcombe, and these affect the times and rates at which water reaches Barcombe. The Agency is working to improve the flow measurement and the management of the structures. We are reviewing the Ardingly/Ouse Operating System in dialogue with SE Water in order to improve the efficiency of the system and the licensing while ensuring that the river is protected for other uses. SE Water are considering raising the water level at Ardingly reservoir to increase storage in the system.

Issue No. 4	**Managing Pressures for Use of Water in the River Ouse**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	No cost in short term	Inefficient system operation Continued conflict between different river interests		
Improve flow measurement at Barcombe Mills	Improved information	Needs studies to evaluate options Cost	M	Agency Water companies
Continue review of Ardingly/Ouse operating system	Efficient use of water resources	Resources Cost	M	Agency South East Water

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Review the operation of water level management structures (see also Issue No. 7)	Improved information	Resources Cost	M	Agency Water companies Landowners Farmers EN Sussex WT Fisheries and recreation interest

ENHANCING BIODIVERSITY

Issue 5: Action is Required to Further the Protection and Enhancement of Biodiversity

Background: The Agency is the one of the lead partners in the conservation of biodiversity in the UK and the responsible organisation for a number of water-related species. There are various actions which need to be undertaken in order to achieve the commitments in the UK Biodiversity Action Plan and these are further detailed for Sussex in the Sussex Biodiversity Action Plan (BAP). Produced by the Sussex Biodiversity Partnership, the Sussex BAP will contain Species Action Plans (SAPs) for which the Agency is responsible in Sussex, three of which are relevant to the Adur and Ouse LEAP, namely those for the Water Vole, Otter and Barn Owl. We must develop targets for each Species Action Plan and ensure their implementation across the Adur and Ouse LEAP area.

The Adur and Ouse catchments contain a number of rare and local species. However, continued loss and degradation of wetland and riverine habitats has lead to decreases in biodiversity and the loss of these species. Further ecological monitoring in both catchments will increase the understanding of the distribution of these species and identify areas to which they might be able to recognise.

Several animal and plant species have been introduced into the Adur and Ouse LEAP area and compete directly with our native species. Plants species such as Giant Hogweed, Himalayan Balsam, Japanese Knotweed, Parrots Feather and *Australian Stonecrop* flourish to the detriment of wetland and riverine species. The very invasive Floating Pennywort has also recently colonised the Piltdown pond at the top of the Ouse catchment and must be eradicated before it is able to spread downstream. The alien water fern (*Azolla* spp) in the Western Adur is also of particular concern. Alien fauna such as the mink prey upon native species, including water voles and wildfowl. Thus, management programs are needed to control the spread of these species.

Alder trees occur along the banks of rivers and streams in both the Adur and Ouse catchments. However, as in many areas of Britain, these tree species are currently under threat from the root disease *Phytophthora*. The distribution of the disease in the

LEAP area is not fully understood and this needs to be determined in order that a management programme for the species can be established.

Issue No. 5	**Action is required to further the Protection and Enhancement of Biodiversity**			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Continued loss of important biodiversity. Failure to meet Government targets		
Develop targets for Species Action Plans and ensure their subsequent implementation	Meet local and national BAP targets. Enhance Biodiversity	Resources Costs	M	Agency, Biodiversity Partnership, Landowners, Other conservation groups and organisations
Promote the protection and spread of rare species	Enhance biodiversity	Resources	L	Agency, EN, MAFF, Landowners, Local Authorities, Sussex WT, other conservation groups and organisations
Review number of ecological monitoring sites, including River Corridor / Habitat Survey areas	Increase understanding of biodiversity within the LEAP area	Resources Cost	L	Agency
Establish management programmes for alien species	Protection of native species	Resources Cost	L	Agency, MAFF, Landowners, EN,
Assess distribution of alder root disease (*Phytophthora*) and monitor spread	Protection of an important native tree species	Resources	L	Agency, EN, Forestry Authority Land owners

MANAGING FRESHWATER FISHERIES

Issue 6: Sustainable Fisheries Management

Background: In the Adur and Ouse LEAP area, there are a number of issues relating to the sustainable management of fisheries. These include the maintenance of riverine habitats for fish, the control of fish stocking procedures, the control of alien fish species, angling regulation for both coarse and game fish and the prevention of poaching. Such issues are important from both ecological and commercial viewpoints.

The status of the fishery in the Western Adur is currently very poor, showing limited numbers and diversity of fish and low recruitment. The cause of this decline is not fully understood and thus needs to be resolved through further assessment. A potential factor is the effect of the luxuriant growth of the alien Water Fern (see also Issue No. 4) but this has yet to be confirmed.

There is a limited understanding of the status of the sea trout population within the LEAP area. The Agency is currently dependent upon limited rod-catch return data to determine changes in the population and most assessments are made upon anecdotal evidence. A proactive approach is necessary to increase the understanding of this species. To this extent, a smolt-tagging programme has been proposed, focusing on the juvenile stage of the species.

Furthermore, the need has arisen to further designate stretches of the Adur and Ouse under the EU Freshwater Fisheries Directive, mainly to protect salmonids. sea trout Current "Cyprinid" designated stretches should also be reviewed with the aim of upgrading them to "Salmonid" designations (see also Issue No. 9).

There is some concern about the potential adverse impact of abstraction intakes on the status of fisheries in the Ouse. Abstractions at Cockhaise and Barcombe could lead to the mortality of fish, particularly fry, which are drawn into abstraction pipes. In January 1999, the amended section 14 of the Salmon and Freshwater Fisheries Act 1975 was implemented which will make it compulsory for screens to be placed across such intakes. The Agency must ensure full compliance with the Act at all abstraction points in both catchments. South East Water, following discussions with the Agency, have submitted proposals for funding new fish screens at all of its river intakes as part of the "Cost of Quality" submission under AMP 3.

Illegal practices such as netting and the introduction of alien fish species give some cause for concern within the LEAP area. Illegal netting in the lower stretches in both the Adur and Ouse require increased levels of enforcement to protect important fish stocks, such as sea trout, and to preserve existing legal fisheries in these areas. The uncontrolled introduction of alien fish species such as Catfish and Zander threaten native species through competition, predation and the spread of disease. The fish parasite, *Ergasilus*, is present at specific locations within each catchment and has the potential to spread. The parasite has a debilitating effect upon coarse fish and is also likely to have a similar adverse effect upon salmonids.

Issue No. 6	**Forward Sustainable Fisheries Management**			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Decline in the status of fisheries in the Adur and Ouse		
Determine reasons for the decline of the fishery in the Western Adur and seek a long term solution	Increase the status of the fishery in the Western Adur	Resources Cost	M	Agency Angling clubs
Determine the status of the sea trout populations in both catchments	Assessment of the population of sea trout in the Adur and Ouse	Resources Cost	M	Agency Angling clubs
Ensure abstraction intakes are appropriately screened after January	Comply with amended Act	Resources Cost	L	Agency SEW SWS
Assess the scale of netting (licensed and illegal) in the estuaries of both the Adur and Ouse	Conservation of fish stocks	Resources	L	Agency
Maintain and improve levels of fisheries enforcement	Conservation of fish stocks	Resources	L	Agency, Police
Management of alien fish species	Conservation of native fish stocks and native biodiversity	Resources	L	Agency, Angling clubs, EN
Investigate the spread of *Ergasilus* within both catchments	Protection of both Cyprinid and Salmonid fisheries	Resources	L	Agency, Angling Clubs

Issue 7: The Free Passage of Sea Trout and Coarse Fish is Restricted by Obstructions in the Rivers

Background: The Agency is committed to maintaining, improving and developing fisheries in accordance with section 114 of the Water Resources Act 1991. Through this commitment, the Agency seeks to ensure the free passage of native fish species throughout the Adur and Ouse rivers and streams, including access to spawning areas. Weirs and sluices can act as barriers to the movement of fish, particularly migratory salmonids. There are a number of these structures in both the Adur and Ouse catchments, especially the latter, constructed generally by mill owners, navigations etc many years ago. Such structures can prevent fish from reaching the breeding areas in the upper catchments which can thus lead to a decline in the status of fisheries. The access of sea trout to North End Stream in the Ouse catchment, for example, is of particular concern where tidal gates limit the access of sea trout into what is potentially high quality habitat for the species.

In high flows under flood events, fish may be displaced downstream or "washed-out" in the absence of suitable refuges and this is exacerbated in the heavily engineered lower stretches of the Adur and Ouse. The ability of fish to return upstream is limited due to the presence of in-river barriers such as weirs and sluices, unless fish passes have been installed. Displacement of fish may also occur through the opening of bottom-opening gates, a number of which occur on the River Ouse. Therefore, the impact of in-river structures such as weirs and sluices (including bottom-opening gates) should be reviewed and the potential examined for their removal through a phased approach. Where appropriate, fish passes should be installed which allow the passage of both salmonid and cyprinid fish.

Issue No. 7	**The Free Passage of Sea Trout and Coarse Fish is Restricted by Obstructions in the Rivers**			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Decrease in status of fisheries in Adur and Ouse		
Review the status and function of all in-river structures with the aim of removing them where appropriate (phased approach)	Conservation and enhancement of fisheries	Resources Cost	H	Agency, Local Authorities, MAFF, Landowners, EN, Sussex WT, Angling clubs

Options for action	Advantages	Disadvantages	Cost	Potential Partners
Investigate operation of sluices and evaluate option for replacement of bottom-opening gates with top-opening gates	Conservation and enhancement of fisheries	Resources Cost	H	Agency, Local Authorities, MAFF, Landowners, Angling clubs
Construction of viable fish passes for both salmonids and cyprinids, and modify existing passes where necessary.	Increases access of fish, particularly Salmonids, to important spawning areas.	Resources Cost	H	Agency, Angling clubs

DELIVERING INTEGRATED RIVER BASIN MANAGEMENT

Issue 8: Lack of Water Level Control due to the Deterioration of Land Drainage Structures and Equipment can Impact on Conservation, Fisheries and Navigation

Background: The land drainage of the low lying Adur and Ouse valleys primarily serves agricultural interests. These two systems are managed through a number of key structures including pumping stations (5 on the Adur and 7 on the Ouse) and river level control structures. Many of these and other associated structures, particularly on the Ouse, are in excess of 40 years old, and are at or beyond their design life. A number of these structures are maintained for conservation/fisheries/navigation purposes and serve very little or no flood defence purpose.

Considerable costs are associated with maintenance and operation of these structures. The Internal Drainage Board (ie the Agency) is unlikely to have the financial resources to repair or replace these structures when this becomes necessary. Water Level Management Plans (WLMPs) for the whole of Sussex are in the final stages of drafting. The extent to which these plans will rely on the various structures needs to be assessed, so that those that are vital to the success of the plans can be assessed and repaired or replaced.

Issue No. 8	Lack of water level control due to the Deterioration of Land Drainage Structures and Equipment can impact on Conservation, Fisheries and Navigation			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Short-term cost	Loss of management for flood defence, land drainage, farming, conservation, fisheries and irrigation.	-	Agency (IDB) Landowners Farmers EN MAFF Sussex WT RSPB Sussex Downs Conservation Board
Carry out asset survey and correlate with WLMPs into overall Strategy for Adur and Ouse	Identifies problems and options in a systematic way	Resources Cost	M	Agency (IDB) Landowners Farmers EN MAFF Sussex WT RSPB Sussex Downs Conservation Board
Repair leaks on smaller sluices	Some improvement in accuracy of baseline information for WLMPs	Resources Cost Not systematic within overall Strategy	M	Agency (IDB) Landowners Farmers EN

Issue 9: Loss and Degradation of Wetland and Riverine Habitats

Background: Under the commitments of the UK Biodiversity Action Plan (BAP), a number of specific habitats are listed under the responsibility of the Agency for protection, enhancement and creation. In the Sussex BAP, a focus has been placed on habitats specific to this area through local Habitat Action Plans (HAPs), five of which are relevant to the Adur and Ouse LEAP area. The Agency has produced a HAP for reedbeds and will produce further HAPs for coastal and floodplain grazing marsh, lakes (other than hammer ponds), canals, and rivers and streams.

Agricultural improvements, previous river engineering practices, and lack of, or poor, maintenance have all contributed to the destruction and degradation of wetland and riverine habitats. For example, agricultural drainage has lead to the decline of a number of wetland habitats, including the once common grazing marshland; water quality has declined due to pollution from agricultural run-off; bankside vegetation has been removed due to agricultural and flood defence activities. Action is now required by the Agency to prevent further damage to, or loss of, remnant habitats, and to improve existing and create new habitats.

The heavily engineered stretches of the lower Adur and Ouse are of particular concern in terms of river habitat degradation. The restoration of functioning floodplain habitats not only improves the ecological value and biodiversity of an area, but also acts as a store and filter for floodwaters and a balance of water resources. In channel natural structures such as riffles and pools have been lost through channelisation for flood defence purposes. This process needs to be reversed and the construction of meanders, riffles and pools will bring about increases in biodiversity, habitat quality and elevate the status of fisheries.

The potential exists to develop buffer strips of vegetation along all watercourses in the LEAP area to help improve water quality and reduce the impact of agriculture. Buffer strips also have further benefits of wildlife habitat creation, improving fisheries and river bank stabilisation. Although the long-term aim would be to create buffer strips throughout the two catchments, initial plans should be focused upon priority areas in need of restoration. This could be achieved using results of River Corridor and River Habitat Surveys. Furthermore, the installation of buffer strips could run together with a tree planting (especially alder) and management programme.

The Agency is obliged by MAFF to produce Water Level Management Plans (WLMPs) for Sites of Special Scientific Interest (SSSIs) and plans have been produced for Lewes Brooks and Offham Marshes in the Ouse area. A key objective of these WLMPs is to return or maintain the SSSIs to their condition at the time of notification with the further long-term view of enhancing their habitat quality and value.

Issue No. 9	Loss and Degradation of Wetland and Riverine Habitats			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Continued loss of important habitats. Failure to meet Government targets		
Establish targets for all future HAPs and ensure their implementation in accordance with the local BAP	Conservation of key riverine and wetland habitats as directed in local and national BAPs	Resources and costs	M	Agency, Biodiversity Partnership, Landowners, Conservation groups and organisations
Identify target areas for habitat protection, restoration and creation	Production of a focused restoration program for the Adur and Ouse. Protection and enhancement of riverine and wetland habitats	Resources	L	Agency, EN, Sussex WT, Other conservation groups and organisations, Local Authorities
Protect, enhance and create saltmarsh and reedbed habitats throughout the LEAP area	Improve and increase areas of nationally important habitats. Compliance with local and national HAPs (reedbeds).	Resources Costs	M	Agency, Biodiversity Partnership, EN, Landowners, Local Authorities, Sussex WT, Ouse Estuary Project, Other conservation groups and organisations Water companies

Options for action	Advantages	Disadvantages	Cost	Potential Partners
Seek to reinstate meanders and pool/riffle sequences, especially in the lower stretches of the Adur and Ouse	Improvement in river habitat quality with resulting increases in biodiversity; improved status of fisheries.	Resources Costs. Potential issues for flood defence.	H	Agency, MAFF, Local Authorities, Landowners, Sussex WT, Conservation groups & organisations
Develop a tree planting and management programme	Improved quality of river and bankside habitats. Enhanced traditional landscape.	Resources Costs Restricted access for maintenance	M	Agency, EN, Forestry Authority, MAFF, Landowners, Sussex WT, Conservation groups & organisations
Promotion of buffer strips along watercourses	Improved quality of river and bankside habitats. Enhanced traditional landscape.	Resources Costs	M	Agency, MAFF, EN, Landowners, Sussex WT, Conservation groups & organisations
Ensure production of habitat-focused WLMPs for Lewes Brooks and Offham Marshes SSSIs	Assured protection of sites of national conservation value.		L	Agency, MAFF, Landowners, EN, Sussex WT, Conservation groups and organisations
Identify opportunities for managed retreat of tidal defences	Improved habitat quality	Resources, flood risk	M	As above

Issue 10: Compliance with EU Standards and Agency Objectives for Water Quality

Background: Although the majority of watercourses in the LEAP area comply with EU Directives and the Agency's River Ecosystem (RE) targets and Water Quality objectives, some problem areas do exist which require investigation by the Agency. The AMP 2 Scheme proposed for Lewes STW is now under construction and includes pumping waste water flows to Newhaven together with provision for storm tank settlement before any storm discharge to the tidal Ouse.

The water industry's regulator Ofwat has now initiated AMP3, the next periodic review of water company prices for the period 2000-2005. The Agency has proposed a number of schemes for investment in this period and these are currently being discussed with the water companies and Ofwat.

The quality of discharges to the marine environment is of particular concern within the LEAP area. Portobello sewage treatment works was identified for improvement under AMP2; Newhaven, Portobello and Shoreham WWTWs discharge into the English Channel and they have high natural dispersion area (HNDA) status within UWWTD. "Raising the Quality" (September 1998) sets out Government thinking on future requirements for achieving environmental improvements for the period 2000 - 2005. Government has indicated the intention to remove all HNDAs and to adopt a precautionary approach by ensuring that secondary treatment should always be applied to all significant coastal discharges. In the LEAP area this will affect Newhaven/Seaford, Portobello and Shoreham WWTWs.

Combined sewer overflows (CSOs) are also the subject of negotiation under AMP3 and of particular concern to the Agency are some 15 CSOs in Lewes, discharging both to the Winterbourne Stream and the tidal River Ouse. These are known to cause water quality problems and they have been identified as a high priority for improvement; the Agency has advised Southern Water Services that we would wish to see the problems addressed at an early stage in the AMP 3 process.

Under the EU Freshwater Fisheries Directive, two sets of water quality standards based upon water chemistry are set out to protect cyprinids and salmonids. The Agency is seeking to move towards achieving guideline standards at both cyprinid and salmonid designated stretches by setting operational standards. High quality Sea Trout and Brown Trout fisheries exist within the two catchments and these are in need of further protection. Sea Trout mortalities have been recorded every summer for the last five years in the Adur catchment (Wineham Henfield and Partridge Green areas) due to the effects of poor water quality (see also Issue No. 6).

Potential pollution of surfacewaters and groundwaters from landfills within the LEAP area is also an issue for the Agency in relation to water quality standards and objectives (Issue Nos.25 & 26).

Issue No. 10	Compliance with EU Standards and Agency Objectives for Water Quality			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing		Continuing non-compliance and degradation in environmental quality		
Complete AMP2 commitments at Lewes STW	Improved water quality. Benefits to tourism and environment.	Cost		Agency SWS AMP2 ISSUE
Implement improvements for Lewes CSO	Improved water quality.	Cost	M	Agency SWS AMP3 ISSUE
Introduction of secondary treatment at Shoreham, Portobello and Newhaven STWs.	Benefits to tourism and environment. Achieve compliance with UWWTD.	Cost	H	Agency SWS AMP3 ISSUE
Move towards achieving guideline standards under the Freshwater Fisheries Directive	Improved water quality and fisheries.	Resources	L	Agency DETR

Issue 11: Intermittent Pollution of Watercourses

Background: Leakage and accidental spillage of oils and other polluting liquids can cause intermittent pollution of both surface and ground waters. In the LEAP area, pollution from certain industrial estates is of particular concern due to their proximity to surface waters. These include those at Avis Way in Newhaven, Bell Lane in Lewes, Burrall Road in Haywards Heath, and those adjacent to the Pookbourne stream in Burgess Hill. We propose a scoping study to identify the scale of the problem and prioritise areas for action. We will increase environmental understanding amongst businesses operating on industrial estates through the creation of partnership opportunities, such as the "Green Business Partnership" with ESCC at Avis Way Industrial Estate, Newhaven.

Sewage and pump-out discharges from houseboats within the Adur Estuary can cause pollution. The Adur Estuary is designated as a SSSI and thus the Agency has a duty to protect such sites of national conservation importance. We will increase the awareness of boat users within the estuary to reduce this source of intermittent pollution.

Occasional discharges from breakages in electric power cables supplying the rail network occur in the area. Oil is used for insulation of such cables and breakages can result in releases of substantial volumes of oil into the environment. Through liaison with Railtrack, and implementation of the Memorandum of Understanding signed by the Agency, we will seek to reduce this type of intermittent pollution.

Ruptures of domestic heating oil tanks are frequent causes of intermittent pollution which may impact on watercourses. These tanks are often poorly maintained and rarely bunded, making them a high risk source of oil pollution. A campaign aimed at raising awareness of the potential problems caused by these tanks will be undertaken by the Agency.

Issue No. 11	**Intermittent Pollution of Watercourses**			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Continued degradation of the environment		
Scoping study to prioritise action at industrial estates.	Reduce sources of intermittent pollution	Resources and costs	M	Agency, Industry
Explore potential to Control discharges from houseboats in the Adur Estuary.	Improve water quality in an area of national conservation importance	Resources	L	Agency, Boat users, Local Authorities, Port Authority
Further liaise with Railtrack to prevent oil pollution from electric power lines	Reduction in a source of intermittent pollution. Improvement in water quality.	Resources	L	Agency, Railtrack
Promote environmental awareness throughout business and the community	Reduction in sources of intermittent pollution. Potential cost-benefits to business through waste minimisation.	Resources	L	Agency, Industry, Business

Options for action	Advantages	Disadvantages	Cost	Potential Partners
Raise awareness of high pollution risks associated with domestic heating oil tanks	Reduce risk of oil pollution. Improvement in water quality	Resources Costs	L	Agency, Heating oil suppliers and customers

Issue 12: Poorly Maintained Private Sewage Treatment Facilities and Septic Tanks lead to Water Quality problems

Background: Many rural sites cause water quality problems with poorly maintained private sewage plants and illegal discharges from cess-pits and septic tanks. Opportunities now exist in rural areas for First Time Rural Sewerage Schemes to be developed with SWS and Local Authorities. The Agency has an arbitrating role if, after rejection, the applicant appeals to the Agency against the decision. A particular area of concern for the Agency is at Vale Bridge Road in Burgess Hill which has requested first time rural sewerage.

Issue No. 12	Poorly Maintained Private Sewage Treatment Facilities and Septic Tanks lead to Water Quality problems			
Options for action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Continued poor rural water quality		
Support the First Time Rural Sewerage Scheme at Vale Bridge Road	Improvement in environmental quality	Resources	L	Agency Public SWS Local Authorities

Issue 13: Increased Access to the Water Environment for Recreation must be Compatible with Flood Defence and Conservation Duties

Background: The Agency has a commitment to provide for and promote water recreation having regard to other environmental factors. This is particularly relevant in areas where the Agency owns or has control of land or water. Improvements for access can be achieved in association with the Agency's other activities, such as flood defence schemes. We need to identify the areas which are environmentally sensitive to existing or increased recreational activity, and those which can absorb increased activity in the future. The needs of conservation, flood defence and recreation have to be carefully balanced with each other and those of other users. Issues such as access for the disabled and public safety must also be taken into account. The Agency also

needs access to watercourses to maintain the flood defences under our control and access for beach management purposes (see also Issue Nos. 14 an 15). We are concerned at the potential risk of erosion and loss of integrity of floodbanks with increased use of embankments, particularly for cycleways and horseriding. We will use the outcome of our own research into the recreational use of floodbanks to guide us on the appropriate use of different types of floodbanks. We should establish and maintain liaison with organisations in relation to waterside access and recreation.

The Ouse Valley Project has been operating successfully since 1997. We need to consider the potential for a similar countryside management and access project for the River Adur. The development of a management strategy for the port of Shoreham should also help to reduce conflicts between the desire to increase recreational access to the harbour with other considerations.

Issue No. 13	**Increased Access to the Water Environment for Recreation must be Compatible with Flood Defence and Conservation Duties**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Recreational capacity over-reached		
Prepare management strategy for Shoreham Harbour in conjunction with Shoreham Maritime Proposals	Appropriate access optimised and integrated with other Strategies and Plans	Resources	L	Agency Local Authorities Shoreham Port Authority GOSE Shoreham Enterprise Landowners and all users
Prepare access strategy for Rivers Adur and Ouse to include opportunities for waterside recreation and recreation on the water	As above	Resources	M	Agency Local Authorities SDCB Ouse Valley Project CC EN Sussex WT British Canoe Union Landowners Other Users

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Use of river and coastal defence embankments for footpaths and cycleways	Increased access	Potential risk of erosion and loss of integrity of floodbanks and increased maintenance. Public Safety	M	As above
Promote access to watercourses in planning conditions for waterside development (where compatible with other uses)	Increased waterside access and conservation. Potential increased value to development	Public safety Security Costs of maintenance and management	M	Agency Developers LPAs Landowners
Increase liaison and education with boat launchers	Access secured for maintenance of sea defences	Resources	L	Boat users Agency
Prepare and implement Management Plans for Agency sites	Reduce conflict between recreational use, environmental needs and local community	Resources	L	Ouse Valley Project

Issue 14: Speeding Recreation Boats may be Accelerating Bank Erosion

Background: There is a public right of navigation on the tidal sections of both the rivers Adur and Ouse. The Agency may apply land drainage byelaws to control speed limits on the tidal stretches to reduce bank erosion. There is a particular concern that wash from speeding boats may be accelerating erosion of the banks of the River Ouse between Lewes and Newhaven. Therefore, there may be a need to further enforce speed limits to protect river banks.

Issue No. 14	Speeding of Recreation Boats are accelerating Bank Erosion			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Acceleration of bank erosion		

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Establish need for reduced boat speed limits for river bank sections being eroded by boat wash	Clarify need for further action	Cost	L	Agency Riparian landowners
Enforce speed limits for boats on affected sections through bylaws	Reduce bank erosion	Costs of monitoring and enforcement	L	Agency Local Authorities
Promote education and awareness to river users	Reduce bank erosion	Resources	L	Agency Boat users

CONSERVING THE LAND

Issue 15: Opportunities to Conserve Heritage in River Areas

Background: The Agency has a duty to protect and conserve heritage in areas under our responsibility and there maybe partnership opportunities to conserve the rich history of the two rivers. The Ouse, for example, contains a number of historic structures in the Balcombe area from the period when the river was navigable. Barges brought building materials up to Barcombe Ridge in the 1820s to build the railways viaduct. A number of mills also once existed in this Area. An assessment of the status of these structures of heritage value would focus strategy and resources on sites of high priority.

Issue No. 15	Opportunities to Conserve Heritage in River Areas			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Noting	Cost	Potential loss of heritage Accidental damage to legally protected (SAMs)		
		Scheduled Ancient Monuments		

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Identify and assess sites of heritage value, particularly in the Ouse, to prioritise areas of conservation importance	Conservation of sites of high heritage value	Resources Costs Accidental damage to legally protected (SAMs) Scheduled Ancient Monuments	L	Agency English Heritage Local Authorities
Increase awareness of heritage sites through education and interpretation	Increased protection of sites of high heritage value	Resources	L	Agency English Heritage Local Authorities Public

Issue 16: Standards of Protection Afforded by Sea Defences

Background: The South Downs Shoreline Management Plan which was published in 1996, encompasses *inter alia* the sea defences of the Adur and Ouse. The Plan considers Strategic Defence Options for each management unit. For all Adur and Ouse sea defence management units the preferred option is to "hold the line" in order to protect existing infrastructure and development.

Standards of protection are continually reviewed, and where agreed with MAFF to be cost effective and offer value for money, capital schemes are undertaken, subject to Agency expenditure constraints and priorities. Such schemes are undertaken to provide improved standards of protection from flooding from the sea. The Agency is currently promoting a sea defence scheme for Shoreham and Lancing to provide protection up to a 1 in 200 year standard. The Agency has recently embarked on a programme of Flood and Coastal Strategy Plans. These plans will determine priorities for future capital schemes, and drive beach management plans post-scheme.

The Agency is also concerned that new development, boat access ramps etc do not obstruct access for beach management purposes. This should be addressed in the strategy plans.

Issue No. 16	Standards of Protection Afforded by Sea Defences			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Increased risk of breaching of existing shingle embankment and flooding with significant risk to people and property.		
Forward strategy for improved sea defence	Higher standard of protection	Costs	H	Agency MAFF
Identify long term maintenance arrangements	Security of maintenance	Cost	L	Agency Local Authorities MAFF
Improve liaison and awareness of maintenance with other beach users, property owners and local authorities	Maintain standard of defence	Resources	L	Agency Property owners Fishermen Boat users and jet skiers Local Authorities

Issue 17: Standards and Maintenance of Tidal Embankments

Background: The current standard of land drainage and tidal protection to the low lying areas of the Adur and Ouse valleys rely as much on the existing tidal embankments as on the pumping stations and other control structures.

Maintenance dredging in these lower reaches has been carried out in the past and the silt was traditionally used for making up the embankments. This no longer takes place. Current levels of revenue expenditure are insufficient to maintain these defences in this way. Based on the Agency's system for prioritisation of capital and maintenance works, it is unlikely that significant maintenance works can be economically justified where these provide protection primarily to agricultural land. Similarly, capital schemes for the upgrading or replacement of these defences are unlikely to be economically viable unless domestic or commercial properties are protected. Many embankments are reaching the end of their useful life and options including repair, replacement and managed retreat need to be considered. The Agency has already commissioned a strategy study for the lower Ouse, and a number of these options and implications have been considered.

Issue No. 17	Standards and Maintenance of Tidal Embankments			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost Potential recreation of saltmarsh habitats through reversion	Increased risk of failure and breaching of existing flood embankment with increased risk of flooding to agricultural land, people and property. Saline intrusion and significant damage to existing farming and nature conservation interests. May conflict with WLMP proposals.		
Forward strategy for improved tidal embankments	Higher standard of protection	Cost, lost opportunity for habitat creation	M	Agency MAFF Landowners
Promote strategic review of all tidal embankments at risk in accordance with FDMM	Cost effective approach	Cost Resources	L	Agency Local Authorities MAFF
Promote managed realignment at Lewes Brooks	Potential Saltmarsh habitat creation	Potential impact on agriculture	L	Agency, MAFF, EN Landowners

Issue 18: Development Pressures and the Promotion of Sustainable Surface Water Management

Background: Careful consideration must be given to the implications of increased surface water run-off to watercourses, generated by additional impermeable areas from new development, so as to ensure flooding is not created or exacerbated.

It has been practice, where problems are identified, to store water run-off during heavy rain in 'balancing' or flood attenuation ponds to be released later. This reduces flood risk by limiting the rate of surface water run-off to watercourses and they can only work effectively if adequately maintained. The Agency is concerned at the proliferation of small ponds, each designed to reduce the peak flow from individual developments. There is a need to promote the strategic planning of surface water management.

Opportunities also exist for creative design appropriate to urban, suburban and rural environments which will enhance the conservation and recreational value of such features. For example, we will promote the use of wet ponds for surface water attenuation. The Agency will also encourage source control, where appropriate, with consideration of permeable surfaces and water reuse, together with other demand management techniques such as water-efficient equipment and appliances.

Issue No. 18	**Development Pressures and the Promotion of Sustainable Surface Water Management**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing		Increased flood risk		
Review management of existing flood attenuation ponds	Baseline information for future Strategy Identifies problems and indicates options for resolution	Resources Cost	L	Agency Local Authorities SWS
Develop Strategy for maintenance of ponds and systems	Improvement of flood defence integrity and amenity value	Resources Cost	M	Agency Local Authorities Public Developers SWS

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Develop Strategies for new development with local authorities	Reduction in pollution and flood risks Increased opportunities for nature conservation and recreation where appropriate	Resources Cost	M	Agency Local Authorities Developers Public Water companies
Promote source control	Early stage solution	Public perception Developers	L	As above
Promote wet ponds for surface water attenuation	Enhancement of conservation and recreation	Maintenance increased Loss of land for development	L	As above
Development of rain water harvesting techniques	Reduced demand on public water supply Reduced flood risk	Public acceptance	M	Local Authorities Developers Industry Agency Water companies
Educate and encourage best practice through publicity, seminars and workshops	Improved environment through education	Resources Cost	L	Agency Local Authorities Developers Public Water companies
Increase managed maintenance on rivers	Reduced flood risk	Conservation disturbance Cost	H	Local Authorities Agency Riparian Owners

Issue 19: The Need to Protect Floodplains

Background: There is a need to ensure the protection of floodplains from development and any landraising to ensure the natural functioning of rivers and their floodplains and that flood risk to property and land is not increased. The zoning of areas at risk to flooding from the sea must be forwarded and inappropriate development in such areas resisted. Effective liaison with Local Authorities is essential if floodplains are to be protected.

Issue No. 19	**The Need to Protect Floodplains**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing		Increased flood risk and risk to life		
Further promote floodplain protection to local authorities	No inappropriate development in floodplains	Resources	L	Agency Local Authorities
Complete and provide more detailed flood risk information to local authorities	More effective information for forward planning and development control	Resources	H	Agency Local Authorities
Ensure floodplain protection is identified in development plans and planning responses	More effective development control. Better support at Public Inquiry		L	Agency Local Authorities
Promote natural functioning of floodplains	Flood risk minimised Enhanced environment	Loss of perceived development land	L	As above Insurance companies
Educate and encourage best practice through publicity, seminars and workshops	Improved environment through education	Resources	L	Agency Local Authorities Developers Public Water companies

Issue 20: The Impact of the New Contaminated Land Regulations

Background: Land contamination may be present in many sites as a result of waste disposal, for example, closed landfill sites, or industrial use, such as gas works, petrol stations, scrapyards. Such sites may present a risk of harm to the environment as a result of their former contaminative uses. Such sites will require consideration when the new Contaminated Land Regulations are implemented shortly. These regulations will place a general duty on the Agency to seek the remediation of certain high risk contaminated land sites. We need to work in partnerships with other organisations, especially the local authorities, to address land contamination in an integrated way. In the Adur and Ouse area, there are a number of closed landfill sites which are known to present a high risk of harm to surface waters and this is discussed further in Issue No. 26. The catchment does not have a significant legacy of major industrial uses but the risk of pollution from previous gas works sites at Lewes and Shoreham Harbour will need to be addressed. There is a risk of potential pollution to groundwater from the Lewes site and a risk to the beach and public amenity from the Shoreham site. Both sites are subject to development proposals. We will need to review the environmental risks associated with other sites particularly petrol stations and scrapyards.

Issue No. 20	**The Impact of the New Contaminated Land Regulations**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	High risk of harm to environment		
Assess risk and extent of problem	Compliance with new Regulations Systematic approach	Cost Resources	M	Agency Local Authorities Landowners
Ensure any redevelopment of former gas works in Lewes and Shoreham Harbour sites fully remediates any contaminated land	Remediation and re-use of contaminated land	Cost	H	Agency, Local Authorities Developers

MANAGING WASTE

Issue 21: The Sustainable Management of Wastes must be Forwarded to Reduce the Impact of Waste on the Environment

Background: The Agency's principal aim is to contribute towards attaining the objective of sustainable development. For waste management, this means reducing the amount of waste produced, making the best use of the waste that is produced, reducing the impacts of wastes on the environment, and encouraging the movement up the 'waste hierarchy'. The waste hierarchy was established in the 1995 Government White Paper on sustainable waste management, 'Making Waste Work', and is as follows:

REDUCTION

REUSE

RECOVERY: recycling, composting, energy

DISPOSAL

The hierarchy does not aim to be prescriptive as the Best Practicable Environmental Option (BPEO) for particular types of waste may differ. The Agency will therefore promote the identification of the BPEO for each waste 'stream' through Life Cycle Analysis (LCA). At present some 97% of wastes from the LEAP area are sent to landfill. Landfill capacity in East Sussex, West Sussex and Brighton and Hove is also limited (see Issue No. 22). In order to achieve sustainable waste management, and to meet targets set out in *Making Waste Work*, levels of minimisation, reuse and recycling need to be increased for industrial, commercial and household wastes.

The Agency has a role to play in encouraging sustainable waste management practices in five key areas: regulation, influencing the market, planning, promotion, and data acquisition.

As the major component of household waste is putrescible matter, there is considerable scope for composting. Local Authorities are responsible for setting up home composting schemes, as well as developing more household waste recycling facilities. Proposals for composting facilities must always be compatible with the protection of the local environment, in relation to surface water runoff contamination, and emissions to air.

There is concern regarding the increases in waste generation that will arise from new proposals for housing and commercial/industrial development, and the need to ensure adequate provision of recycling facilities in conjunction with development, through local planning policy and planning conditions. We are promoting local initiatives with businesses, such as the Avis Way Industrial Estate waste minimisation project (with East Sussex County Council), and encouraging a greater understanding of waste

minimisation and recycling in the public and private sectors through seminars, educational leaflets, and our recently produced Waste Minimisation and Recycling Directory for Businesses in Sussex. We are also investigating opportunities for clinical waste minimisation at Bognor and Lewes hospitals. We aim to build on this work by establishing a partnership with Sussex Business link, local waste management businesses and Local Authorities, in order to encourage greater waste minimisation in a more strategic and co-ordinated way. We will also support local authorities in the inclusion of specific policies and conditions encouraging sustainable waste management in local authority development plans and planning consents.

In partnership with local authorities, we are also working to raise awareness and achieve waste minimisation in schools which adopt the Tidy Britain Group's 'Eco-Schools' standard.

Issue No. 21	**The Sustainable Management of Wastes must be forwarded to Reduce the Impact of Waste on the Environment**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Increased pressure on existing facilities Need for more sites in potentially sensitive areas Do not achieve Government sustainable waste management targets	-	-
Undertake education campaigns for public, business and public sector	Waste reduction /reuse/recycling Reduced costs to business, environmental benefits	Resources	L	Agency Local Authorities Industry Public sector
Promote recycling/ composting initiatives and facilities	Waste recycling Reduced landfill disposal	Cost	M	Local Authorities Public Private contractors Agency

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Promote adequate provision of recycling facilities in new proposals for housing and commercial/ industrial development	Waste recycling. Reduced landfill disposal	Land use planning	L	LPAs Developers
Evaluate impacts of existing waste minimisation and recycling campaigns	Assesses value for money, understand changes leading to good practice and better promotion of objectives in future	Resources	M	Local Authorities Public Industry Agency
Develop collaborative waste minimisation initiatives with business	Builds on work already undertaken. Encourages voluntary action. Reduced production of waste and resource use. Environmental benefit. Reduced costs to businesses	Resources	L	Agency Local Authorities Business and Industry
Work with schools on waste minimisation and education	Encourages good practice at an early age. Reduced waste. Environmental and financial benefits.	Resources	L	Agency Local Authorities Schools Tidy Britain Group

Issue 22: The Capacity of Existing Landfill Sites for the Disposal of Wastes will be Utilised Within Six Years

Background: As waste minimisation, reuse and recycling initiatives become established (Issue 19), the quantity of waste requiring final disposal should reduce. However, some wastes will always require landfilling. It is recognised that at current rates of disposal, the few licensed landfill sites in the LEAP area will be full in the next 6 years. Household waste from Rother District Council is also contracted to be sent to Pebsham Waste Derived Fuel (WDF) plant in the Cuckmere and Pevensey Levels LEAP area until 2007.

There are insufficient waste management facilities in the LEAP Area for the recovery or disposal of waste tyres, partly due to the large numbers of garages in the area. The nearest waste transfer station is in Worthing, but local landfill sites are licensed to dispose of only a restricted quantity of tyres due to inherent problems with 'floating' and fire hazards. This has resulted in a build up of tyres at scrap yards, vehicle dismantlers, tyre outlets, and flytipping. Other options for waste disposal and treatment include incineration and anaerobic digestion. Any such facility will require authorisation from the Agency.

There are also insufficient facilities for the management of commercial and industrial wastes in the Brighton and Hove area. As a result, this waste is transferred to other parts of the LEAP area (Shoreham, Burgess Hill, Sompting and Lewes), which is of concern for its conflict with the proximity principle, and this has also resulted in flytipping.

In addition, there is a shortage of facilities for managing clinical wastes. Some low level clinical waste is disposed at Beddingham landfill site near Lewes, but the majority is transported to London for incineration. This is also in conflict with the 'proximity principle' of disposing of wastes close to where they are generated. As well as requiring new disposal facilities, this is being tackled through an Agency project to try to ensure better segregation of clinical wastes at source to ensure that the waste going into the clinical waste stream actually is clinical waste.

Issue No. 22	**The Capacity of Existing Landfill Sites for the Disposal of Wastes will be utilised within six years**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing		Lack of disposal route Inappropriate waste storage Environmental impact		

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
Evaluate opportunities for new landfill sites	Meeting need for additional landfill space	Environmental Impacts	M	Local Authorities Landowners Agency
Evaluate opportunities for incineration	Capacity available in landfill for non-combustible wastes. Production of energy from waste.	Public perception Cost of incineration	M	Local Authorities Private Sector Agency
Promote waste tyre recovery and disposal facilities	Appropriate waste management	Resources	L	Local Authorities Private Sector Agency
Promote facilities for commercial/ industrial waste treatment/recovery/ disposal in Brighton and Hove	Proximity principle	Resources Public perception	L	Local Authorities Private Sector Agency
Promote opportunities for clinical waste minimisation	Reduced disposal costs	Potential for inappropriate waste disposal	M	Local Authorities Private Sector Agency

Issue 23: Illegal Waste Disposal (Fly Tipping) must be Controlled in Liaison with Local Authorities

Background: A particular problem of fly tipping has been identified at Mill Hill (Adur), Malthouse Lane (Burgess Hill), Maresfield Caravan site and land adjacent to railway lines. With the introduction in 1996 of the Landfill Tax, fly tipping was generally expected to increase although a lack of adequate data on the levels of fly tipping before the introduction of the Landfill Tax means that this is unlikely to be confirmed with accuracy. We have developed a protocol for fly tipping with Local Authorities and this provides clear guidance on those categories of flytipping to be dealt with by the Agency and those to be dealt with by Local Authorities.

Rubbish in watercourses is a particular concern associated with degradation of amenity and obstruction to flow which may exacerbate local flooding. This is particularly applicable where rubbish is washed down in flood flow, blocks culverts and screens, as has occurred in Lewes and Haywards Heath.

Issue No. 23	Illegal Waste Disposal (Fly Tipping) must be Controlled in Liaison with Local Authorities			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	No Cost	Increased risk of flooding and pollution. Habitat degradation		
Encourage public and landowners to report Take action against offenders	Reduced pollution risk Reduced flood risk	Resources Cost	L	Local Authorities Public Agency
Educate and increase public awareness	Reduced flood risk Improved amenity value Reduced operational costs in long term Reduced pollution risk	Resources Additional costs in short term	L	Local Authorities Agency Public, community residents' groups and schools Southern Water
Increase maintenance work on rivers	Reduced flood risk	Conservation disturbance Cost	M	Local Authorities Agency Internal Drainage Boards Riparian owners

Issue 24: Potential Increase in Land Application of Wastes

Background: The land application of waste, such as sewage sludge, to agricultural land has the potential to cause serious pollution and potential risk to health if not properly managed and controlled. This activity is currently carried out in the area and is likely to increase over the next few years due to increased sewage treatment, higher landfill costs and the cessation of sea disposal of sewage sludge since the end of 1998. In particular, Southern Water's proposals for a new sludge treatment centre at Portobello, to meet the requirements of the EU Urban Waste Water Treatment Directive will increase the potential for disposal of sludge to land in the area.

The Agency has responsibility for effectively enforcing regulations which allow the application of such wastes to agricultural land where beneficial effects can be demonstrated. The treatment and use of sewage sludge on land is subject to European and UK legislation and is controlled by regulators and also by industry codes of

practice and agreements between retailers and water companies. The sludge regulations are due to be revised in 1999 to require improved treatment of sewage sludge before application to land. This will include the phasing out of the use of untreated sludge for grassland and most crops by the end of 1999, with a full ban by the end of 2001. SWS has a sludge strategy for the treatment and use of sewage sludge to ensure directives and codes of practice are complied with. This will eliminate liquid sludges recycled to land. The exemption of industrial waste spread on land from waste management licensing and future guidelines for land spreading, are under review by the Government. There is concern regarding the long-term environmental capacity of the land to absorb these wastes. Careful monitoring and regulation is required to ensure the procedure does not represent a hazard to health via the food chain and that it is carried out without harming the environment, including the pollution of sensitive groundwater resources.

Issue No. 24	**Potential Increase in Land Application of Wastes**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	No Cost	Pollution risks Environmental capacity exceeded	-	-
Develop and implement a coherent strategy for regulation	Nutrients to agricultural land Sustainable waste management route Reduced pollution risk	Complex legislation Public perception Cost Resources	M	Agency Landowners/ Farmers Southern Water MAFF

Issue 25: Licensed Waste Management Sites not Meeting Environmental Targets

Background: Several licensed landfill sites in the LEAP area have difficulties with meeting environmental requirements for leachate management. The groundwater at the Washington Landfill site is vulnerable to pollution and the operator has been made aware of the situation and is investigating appropriate remediation options. The Beddingham landfill has breached its licence conditions in relation to leachate levels in groundwater around the site and this is being further investigated.

Issue No. 25	Licensed Waste Management Sites not Meeting Environmental Targets			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Pollution of surface and ground water		
Investigation into extent and nature of problems at specific sites	Clarification of precise nature and extent of problems	Cost	M	Agency Site operators
Remedial action where necessary	Reduction of pollution of ground and surface waters	Cost to licence holders	H	Agency Site operators

Issue 26: Potential Risk of Water Pollution from Closed Landfills

Background: Leachate from old closed and unlined landfills has the potential to cause significant environmental impact. Several sites are known to be presenting a high risk of harm to surface waters, including Freaks Lane landfill (Burgess Hill), Castlewood landfill, and Henfield brickworks landfill. The introduction of the contaminated land provisions of the Environment Act 1995 will require the Agency to identify and seek remediation of certain high risk contaminated land sites, to be known as 'special sites'.

Issue No. 26	Potential Risk of Water Pollution from Closed Landfills			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Continued risk of water pollution	-	-
Investigate pollution risk	Identification of scale of potential problem and options for action	Resources	L	Agency Local Authorities
Remedial action where necessary	Reduction of pollution	Cost to owner, LA or Agency	H	Agency, landowners, Local Authorities

Issue 27: Management of Port Wastes

Background: There are two major ports in the LEAP area which potentially involve the import of wastes from overseas or other parts of the UK, Shoreham and Newhaven, together with the lesser port of Brighton Marina. The ports themselves generate various wastes, including special wastes, through their activities of ship and boat handling, repair and maintenance. There are opportunities for partnerships with port authorities and companies to establish port waste management plans and clear procedures.

Issue No. 27	**Management of Port Wastes**			
Options for Action	**Advantages**	**Disadvantages**	**Cost**	**Potential Partners**
Do Nothing	Cost	Potential pollution risk	-	-
Establish formal partnerships for port waste management planning	Clarify procedures and responsibilities	Resources	L	Agency Port authorities
Establish memorandum and understanding between Agency and port authorities	Clarify procedures and responsibilities	Resources	L	Agency Port authorities

REGULATING MAJOR INDUSTRIES

There are no breaches of Air Quality Standards known to be caused by authorised IPC processes in the LEAP area. The new power station in Shoreham has received authorisation for IPC from the Agency. At present therefore, no issues are identified for the regulation of major industries in the LEAP area at the present time.

4.0 DEVELOPMENT PRESSURES

Land Use Planning: The Role of the Agency

4.1 It is widely acknowledged that the Town and Country Planning system has a key role in protecting the environment. The Agency supports Local Authorities and others, such as Regional Planning Conferences and Government offices, in developing land use planning policies to promote sustainable development and help secure the protection and enhancement of the environment. A high quality environment is crucial to achieving economic growth and regeneration and a better quality of life for local people. We comment on the appropriateness and scale of development in particular locations. Sustainable development does not mean, however, environmental protection at all costs. We believe achieving sustainable development involves finding ways to encourage environmentally compatible economic activity and discouraging or controlling environmentally damaging activities.

4.2 The Agency takes a proactive approach towards its involvement in the planning system and we consider this to be an integral part of our work to protect and enhance the environment. We are involved at all levels of the planning system. At a national level we liaise with DETR and other national organisations, and consult on new and revised legislation, Planning Policy Guidance and Circulars. At a regional level we liaise with Regional Government offices, and provide information and responses to Regional Planning Guidance. At the area level, the Agency promotes local liaison with county and district/borough councils with regard to development planning and development control.

4.3 The location, extent and design of development can influence the degree to which new development is sustainable. Whilst the Agency has powers to regulate some processes and substances which can impact on the environment, its powers to control development are limited. In considering impacts of new development, the Agency is therefore largely dependent on the planning system for the protection of the environment.

The Environment Agency and Forward Planning

4.4 The Environment Agency provides an integrated approach to the protection and enhancement of the environment. While we can influence some of the factors that have an impact on the well being of the environment, through our regulatory and operational activities, many are beyond our direct control. Land use change can have a significant impact on the environment.

4.5 The Town and Country planning system has a key role to play in protecting and enhancing the environment. Development plans set out the main considerations on which planning applications are decided. Policies and proposals contained within them are of primary importance for shaping land use change, and provide an opportunity to safeguard and enhance the environment and prevent future problems arising as a result of development.

4.6 The development plan process provides an important opportunity to progress towards sustainable development and growth. As a statutory consultee in the development plan preparation process the Agency recognises the importance of working with Local Planning Authorities (LPAs) to further the objective of contributing towards sustainable development.

4.7 The basic objectives of the Agency in advising on Development Plan Policies and Guidance are to:

- promote policies which contribute towards sustainable development
- balance the demands of development with the need to protect and enhance the environment.
- prevent (or control) the pollution of air, land and water
- reduce the demand for water, making the best use of current resources
- reduce the risk to people, the developed and natural environment from flooding
- conserve and enhance biodiversity
- promote the use of water and associated land for recreational purposes
- achieve reductions in waste through minimisation, reuse and recycling and improved standards of disposal

4.8 When required, the Agency will appear at Examinations in Public and Local Plan Inquiries to support Local Planning Authority (LPA) policies which promote sustainable development and support our aims and objectives.

The Environment Agency and Development Control

4.9 LPAs are required under Town and Country Planning legislation to consult the Agency on certain planning applications and have discretionary powers regarding the referral of others. The Agency would assess the implications of development on its interests and, where concerns are identified, advise the LPA to refuse the application or recommend conditions are imposed on any planning permission, to ensure that such concerns are addressed. Any objection would be supported at an Inquiry.

4.10 In assessing any planning application a detailed appraisal of the proposal is made by the Agency to identify any potential impacts upon the environment. The following in particular would be considered:

Table 2: Potential Impacts of Proposed Development considered by Agency

• impact on flooding due to obstruction to watercourses, infilling of floodplains and impedance to groundwater flow
• implications for the integrity of watercourse channels and flood defences
• impact on groundwater quality particularly where the site lies in an sensitive area with respect to groundwater protection
• impact on surface water quality, including the washing of silt into a watercourse
• possible derogation to spring fed watercourses, wetlands and water abstraction
• impact on the conservation of the natural water environment including wetlands and river corridors
• flood risk to the new development from rivers and the sea
• impact of increased surface water runoff from new development on flooding elsewhere
• waste management implications including location to former landfill sites
• implications of development on possible contaminated land
• impact on sewage treatment facilities and sewerage systems

4.11 In assessing the potential impacts of proposed developments on the environment we will use the following principles:

Precautionary Principle: When the exact effect (or whether there is any effect) of a potentially harmful emission into the environment is not known, a presumption exists against its release.

Polluter Pays Principle: Polluters should bear the full cost of prevention and minimisation of pollution, and of remedying environmental damage. This cost should be reflected in the cost of goods and services which cause pollution is their production, consumption or disposal.

Proximity Principle: Potential environmental damage should be contained and rectified as far as possible as close to the source of production. The principle seeks to avoid further environmental damage as a result of remediation (eg contaminated land) or existing problems (eg transportation/disposal of wastes).

National Planning Liaison Guidance by the Environment Agency

4.12 In March 1997 we produced a Manual to assist Local Authority planners in their day to day contact with the Agency. The Manual identifies the background for the effective liaison between ourselves and LPAs. It lists the types of development plans and other strategies requiring Agency consultation for the following reasons:

- in order to influence policies and proposals which seek to protect and enhance the environment;
- to provide us with an awareness of wider issues which may affect or influence our own plans or actions.

4.13 The Guidance also details the types of planning applications we wish to be consulted upon, the relevance to the Agency of each type of application, and explains the requirement for each consultation - statutory or advisory. Appendices 3 and 4 provide summary information from this Manual.

4.14 Specific requirements for the water environment are explained in '*Guidance Notes for Local Planning Authorities on Methods of Protecting the Water Environment through Development Plans*' (NRA) 1994. The Agency will shortly be updating this document and publishing other policy statements to cover the full range of our interests.

Sustainable Development and the Environment Agency

4.15 With increasing and often conflicting demands being placed on the environment, it is now widely accepted that a sustainable approach to growth and development is required if these demands are to be balanced with the need to protect and enhance the environment for now and the future. Our principal aim is "... *to protect and enhance the environment, taken as a whole, so as to make a positive contribution towards achieving sustainable development.*" Environment Act, 1995.

4.16 Sustainability is sometimes seen as being opposed to development. However, the Agency considers that development can be achieved in ways that are compatible with environmental protection and enhancement. In particular it must be recognised that a high environmental quality is crucial to achieving economic growth and regeneration and a better quality of life for the Area's population. There can be opportunities to maximise environmental benefits from development schemes, particularly with creative design and the application of sustainability principles.

4.17 Government guidance on '*The Environment Agency and Sustainable Development*' (1996) sets out what the Agency should do to contribute towards achieving sustainable development. We have further developed this guidance and produced a series of documents on different aspects of our work and sustainable development. Based on this guidance, we have identified sustainability principles for the Sussex Area as follows:

Table 3: Sustainability Principles for the Sussex Area

- maintain and improve, where possible, the quality of air, land and water through the control and prevention of pollution
- manage areas at risk from flooding to protect people and property
- manage water resources to balance the needs of society and the environment
- manage waste safely and encourage minimisation of waste and producer responsibility
- protect and enhance biodiversity
- protect, enhance and promote the water and waterside environment for appropriate amenity, navigation and recreational uses
- educate and inform organisations and the public to increase environmental awareness

4.18 Sustainable development is a key area of shared responsibility between the Agency and local authorities. A fundamental principle of sustainable development is that action at the local level is vital. The responsibility for implementation of this Local Agenda 21 (LA21) process lies principally with the District Councils. The Agency can contribute in many ways and this is explained later in Section 5 A Better Environment through Partnerships.

4.19 The Agency is developing new tools and techniques to better inform and contribute expert advice to the land use planning system with respect to the impact of development on the environment for those elements (air, land, water, biodiversity) of the environment within our remit. These tools and techniques can be applied to policy at the preparation stage of development plans; strategic locational planning decision-making; and site-specific development assessment. The Agency seeks to use such tools and techniques in close partnerships with local planning authorities in an iterative and interactive way. They include the following:

Environmental Capital: The Agency co-sponsored with the Countryside Agency, English Nature and English Heritage a new approach to environmental capital. This aims to identify what actually matters for sustainability based on a characterisation approach. It is hoped that this will help resolve the problems that were associated with categorising environmental capital into *"constant, critical and negotiable"*. West Sussex County Council and the District Councils are trialling this new approach as part of their continuing development of an environmental capacity methodology.

Environmental Capacity: The Agency is investigating how it can best contribute to the process. Emerging studies suggest that the Agency is best placed to take a lead on integrated environmental management and can contribute an integrated response to capacity studies for those elements of the environment within its remit. Clearly the decision-making is with the land use planners who have to balance the environmental, social and economic aspects of sustainable development.

4.20 The Agency promotes an interactive and iterative approach to capacity. The Agency is well placed to advise upon causes and consequences with management options. For example, we promote water demand management such as greywater recycling and water-efficient devices. The use of such options will change the impact of a housing development, and consequently the capacity of the receiving environment. We can also advise upon areas of degraded environment where enhancement would be beneficial and this would also contribute to capacity assessments.

Opportunities for Environmental Enhancement

4.21 There can be many opportunities for environmental enhancement through creative and sympathetic design of proposed developments. The Agency can advise on options and demonstrate practical examples. Generally, opportunities may include the following:

- restoration of rivers and wetlands degraded by engineering and urbanisation.
- improvements to river corridors: restoration of channels; sympathetic maintenance; creation of buffer zones, especially in arable areas; improvements to landscape character and visual amenity.
- restoration of functioning floodplains to improve ecological value and biodiversity, store and clean floodwaters and help balance water resources.
- promotion of demand management efficiencies: leakage control, metering, water-saving devices.
- assurance of good environmental practices through an accredited Environmental Management System (EMS) - EMAS and/or ISO 14001.
- reinstatement of flows or levels to rivers, wetlands and groundwater that have been depleted by overabstraction.
- where appropriate, initiatives for retaining runoff within the catchment and using greywater.
- minimisation of waste.
- initiatives to encourage development of brownfield sites.
- voluntary remediation.
- use of strategic environmental assessment (policies and geographical).
- provision of improved facilities, eg disabled persons fishing platforms, riverside footpaths/cycleways, water based recreation, where appropriate.

5.0 A BETTER ENVIRONMENT THROUGH PARTNERSHIP

Introduction

5.1 Government recognised that it will require the active co-operation of all sections of society to achieve sustainable development.

> *"Because the environment is shared, collective action is necessary"*
> UK Strategy for Sustainable Development 1994

In the recent consultation paper on a revised UK Strategy, Government has confirmed that it is seeking to further encourage public participation in decision-making including involving local communities in identifying problems and opportunities for the environment.

5.2 Government guidance on the Agency's 'Contribution to Sustainable Development' specifically identifies the role of the Agency in building, supporting and developing partnerships, as a key means of delivering the Agency's objectives. The Agency, therefore, seeks to develop close and responsive relationships with the public, local authorities, business, industry, environmental and community groups. Partnership may be achieved through various arrangements such as funding, education, shared resources and information exchange. LEAPs offer opportunities for identifying and developing partnerships and monitoring achievements in the local environment.

5.3 At the Earth Summit in Rio de Janeiro, 1992, it was agreed by Governments that action at a local level is crucial to help achieve sustainable development. Local Agenda 21 (LA21) is about local issues being resolved by local people, and is designed to promote the involvement and responsibility of us all. The concept of *"think global, act local"* is fundamental to the concept of LA21, but also perhaps the greatest challenge for implementation.

5.4 The need to more fully address the social element of the sustainable development agenda has stimulated more innovative and participatory approaches to both LA21 and the preparation of development plans. For example, East Sussex CC has explored ways of achieving 'bottom-up' community involvement and West Sussex CC is currently identifying choices and consequences with increased stakeholder involvement for continuous testing of development options. The district councils are also encouraging more community participation in development plan preparation, for example, with citizens' juries, community visioning and focus groups.

5.5 The Agency can contribute to these initiatives with targeted information and expert advice. This may be particularly useful when considering the consequences of choices. We are also keen to form partnerships with local authorities to prepare state of the environment report (SOERs) which can form the basis for many studies with different applications.

5.6 Responsibility for the Local Agenda 21 process lies principally with district councils, who are required to create and co-ordinate partnerships between all sectors of the community, and a framework within which local communities can discuss and reach consensus on the identification and resolution of environmental problems. The Government's aim is for all local authorities to have prepared a LA21 Strategy by the end of 1999. Issues raised by the LA21 process can include concerns, such as sustainable water resources, where the Agency is the key responsible organisation or others, such as air quality, where the Agency has a shared responsibility.

Local Partnership Initiatives

5.7 Local authorities often play a lead role in the promotion of partnership initiatives, through Agenda 21 and otherwise. A wide variety of partnership initiatives presently exist in the LEAP area, many combining economic, social and environmental objectives. Main themes include:

- encouraging sustainable waste management within industry and the local community through the development of waste minimisation, recycling and composting projects;
- encouraging the use of more sustainable methods of transport, through promotion of environmental awareness of, for example, low pollution fuels and fuel efficient transport, and the development of community transport schemes;
- encouraging energy and water conservation within industry and the local community;
- encouraging sustainable land management practices and promoting the local farming economy with 'buy locally' campaigns;
- use of specific campaigns, community newspapers, leaflets and exhibitions to provide information on sustainable living, ensure that all sections of the community are encouraged to participate in decision making, obtain feedback from the local community on what is important to them and provide information on progress towards sustainability.

Strategic Links with other Statutory Organisations

5.8 At a strategic level, the Agency has already established collaborative arrangements with, for example, English Nature, local authority associations, National Park Authorities, and a number of organisations in respect of environmental research and development.

Involvement of the Agency in Local Partnership Initiatives

5.9 **Air Quality:** The Agency and local authorities share responsibility for air quality, and, for example, we are working together through the Sussex AQ Steering Group. Local authorities are responsible for producing and implementing Local Air Quality Management Plans, where necessary, and we are committed to assist them in this respect.

5.10 **Water Resources:** We are working with all the Water Companies in the south-east to prepare a sustainable strategy for water management over the next 30 years. We wish to work closely with local authorities, developers and the public to promote demand management options such as water saving devices, recycling and other creative design options.

5.11 **Biodiversity:** The Agency is working with English Nature, East Sussex County Council, West Sussex County Council, the Farming and Wildlife Advisory Group, RSPB and Sussex Wildlife Trust to maintain and enhance the natural resources in the area through the Sussex Biodiversity Action Plan, published in July 1998. Also, for example, we have also worked collaboratively with West Sussex County Council, East Sussex County Council, Sussex Wildlife Trust, English Nature and others in the development of the Biodiversity Records Centre and the Sussex Environmental Survey Directory. Further opportunities exist for partnership in interpreting survey information into management options and actions.

5.12 **Integrated River-Basin Management and Freshwater Fisheries:** Collaborative projects are being undertaken for the Ouse and Adur river valleys. The Ouse Valley Project was set up in April 1997 as a partnership between the Agency and the Sussex Downs Conservation Board with additional funding and support from the Countryside Agency, East Sussex County Council, English Nature, Lewes District Council and the Sports Council. The Project aims to conserve and enhance the nature conservation, landscape and amenity value of the Ouse Valley. The Adur Valley Project developed a leisure and conservation strategy for the River Adur Valley. The Agency and Adur District Council are investigating opportunities for another collaborative project. Collaborative initiatives with the Sussex Ouse Conservation Society and the Ouse Anglers and Preservation Society are underway on the lower river Ouse to enhance and conserve the catchments sea trout stocks. A sea trout strategy for the river Ouse was developed in 1996. Current projects include enhancing the passage of migratory fish through the lower river, habitat enhancement and stock description.

5.13 **Land:** We wish to work closely with both local authorities and developers to ensure that new development meets with sustainable principles of surface water management.

5.14 **Waste:** The Agency is particularly interested to encourage partnership opportunities with local authorities, business and other groups to achieve waste

minimisation. We are working collaboratively with East Sussex County Council and industry to encourage waste minimisation on the Avis Way Industrial Estate in Newhaven through the *'Green for Growth'* Initiative.

5.15 The Agency also attends the following groups whose broad remit is to promote sustainable waste management: West Sussex Waste Management Liaison Forum, West Sussex Recycling Forum, Sussex Business Environment Forum, South East Regional Recycling Forum, East Sussex Recycling Forum.

5.16 **Education:** We recognise that broad-based education covering the community, educational and industrial sectors will result in a more informed society that is better able to understand the environment, its needs, and the impact of society's activities upon it. The Agency's *Education Strategy Green Shoots* includes the following objectives:

- help educate young people through teaching aids and other initiatives;
- educate industry and business through consultation, collaborative activities and targeted campaigns to promote pollution prevention rather than its remediation;
- raise public awareness or environmental issues to encourage responsibility for the environment and its challenges.

5.17 The Agency, at a national level, supports the Eco-schools initiative as auditors and technical assessors. In the LEAP area, Local authorities are actively involved in the initiative at present and, for example, pupils lead a forum for the year with an environment-related project, such as waste minimisation.

5.18 **Information:** We provide a wide range of information to all sectors of society, and in addition give many talks and presentation. The LEAP is a practical example of the material we publish which can assist in raising public awareness and understanding of environmental issues. We all have a role to play, however, in raising awareness of the importance of issues facing our local environment.

Future Partnership Opportunities

5.19 The Agency seeks to actively become involved in partnership initiatives at both strategic and local levels to achieve the objectives of sustainable development. Partnerships are regarded as a key mechanism for meeting the Agency's objectives. A partnership approach will achieve more towards a common purpose than the partners could achieve if acting independently. We have much to offer our partners – expertise, resources, credibility. A successful partnership will bring benefits to the environment and to each of the partners, not only in terms of consolidating information but also turning that information into management options and actions.

5.20 External Funding

In partnership with others, the Agency is keen to maximise the amount of external funding which is spent on the environment in general. Like other organisations, there are many worthy initiatives we would like to progress but are constrained by the ever-increasing competing priorities on our budgets. Many external funding streams, for example UK Government and European Funding, offer opportunities to help ensure sustainable improvement in the quality of the environment as a whole. With others we plan to fully explore and utilise these where appropriate. Working in partnership with those who share similar objectives should hopefully increase our and other organisations' chances of securing funding to the benefit of the environment.

Not only are we interested in obtaining external funding but the Agency also actively seeks to influence these substantial spending programmes so as to maximise environment gain and contribute towards the achievement of sustainable development.

APPENDIX 1:

DUTIES, POWERS AND INTERESTS OF THE ENVIRONMENT AGENCY

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 the Agency's work is advisory, with the relevant powers resting with other bodies such as local planning authorities. The following table therefore summarises the Agency's duties, powers and interests and their relationship to land use planning in Southern Region.

Water Resources

The Agency has duties to:

- Conserve, redistribute, augment and secure the proper use of water resources.
- 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.
- Determine water abstraction and impoundment licences on application.
- Publish information on actual and prospective demands for water and available resources.
- Maintain public registers of licences for abstraction and improvement.
- Promote sustainability.

The Agency has powers to:

- Revoke or vary existing licences with the consent of the licence holder. If no consent is given the matter is referred to the Secretary of State to determine. Compensation is normally payable.
- Monitor and enforce abstraction and impoundment licence conditions.

The Agency has an interest (but no powers) in:

- 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.

Partnership

- 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 will be needed in the future and supports a twin track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water-conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.

Flood Defence

Agency Duty

- The Agency has a duty to exercise general supervision over all matters relating to land drainage and flood defence throughout each catchment. The principal aim is to provide effective defence and warning systems to protect people and property against flooding from rivers and the sea.

The Agency has powers to:

- Control, through land drainage consents, development within 8m of main river (15 m on a tidal main river) (Water Resources Act, 1991 Section 109) or construction of a structure that would affect the flow of an ordinary watercourse (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 warnings relating to main rivers to the public, Local Authorities and the police.
- Control through Land Drainage Bylaws erections, excavations, etc which may affect sea defences.
- Supervise the maintenance of tidal flood defences within the Agency's jurisdiction. (Note: Many of the sea defences within the Southern Region are controlled by Local Authorities).
- Maintain and operate flood control structures.

The Agency has an interest (but no powers) in:

- Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by Local Planning Authorities.
- Installation of surface water source control measures eg 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.

Partnership

- As a statutory consultee on planning applications the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts of proposed flood plain development.
- The Agency advises solicitors on potential flood risk during property searches for prospective purchasers.

- 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.

Water Quality

Agency Duty

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

The Agency has powers to:

- 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.
- Issue 'works notices' where action is required to reduce the risk of pollution.
- Prosecute polluters and recover the costs of clean-up operations.

The Agency has an interest (but no powers) in:

- The control of run off from roads and highways. This is a Highways Agency duty.
- The greater use of source-control measures to reduce pollution by surface-water run off.
- Prevention and education campaigns to reduce pollution incidents.

Partnership

- 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

Agency Duty

- The Agency has a duty to implement Part 1 of the Environmental Protection Act 1990.

The Agency has powers to:

- 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.

The Agency has an interest (but no powers) in:

- The vast number of smaller industrial processes which are controlled by Local Authorities.
- Control over vehicular emissions and transport planning.

Partnership

- 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.
- The Agency wishes to liaise with Local Authorities in the production of their Air Quality Management Plans.
- The Agency will advise and contribute to the government's National Air Quality Strategy.

Radio-active Substances

Agency Duty

- The Agency has a duty under the Radio-active Substances Act 1993 to regulate the use of radio-active materials and the disposal of radio-active waste.

The Agency has powers to:

- To issue certificates to users of radio-active materials and disposers of radio-active waste, with an overall objective of protecting members of the public.

The Agency has an interest (but no powers) in:

- The health effects of radiation.

Partnership

- The Agency will work with users of the radio-active materials to ensure that radio-active wastes are not unnecessarily created, and that they are safely and appropriately disposed of.
- The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites.
- The Agency will work with the Health and Safety Executive on worker protection issues at non-nuclear sites.

Waste Management

Agency Duty

- 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:

- Vary waste management licence conditions.
- Suspend and revoke licences.
- Investigate and prosecute illegal waste management operations.

The Agency has an interest (but no powers) in:

- 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.

Partnership

- The Agency will work with waste producers, the waste-management industry and Local Authorities to reduce the amount of waste produced, increase re-use and recycling and improve standards of disposal.

Contaminated Land

Agency Duty

- 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:

- 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.

The Agency has an interest (but no powers) in:

- Securing with others, including Local Authorities, landowners and developers, the safe remediation of contaminated land.

Partnership

- The Agency supports land remediation and will promote this with developers and Local Authorities and other stakeholders.

Conservation

Agency Duty

- The Agency will further conserve the environment, 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:

- Exploit opportunities for furthering and promoting conservation with regard to water management and pollution control. The Agency has no direct conservation powers.

The Agency has an interest (but no powers) in:

- 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.

Partnership

- 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

Agency Duty

- 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:

- Further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution control powers.

The Agency has an interest (but no powers) in:

- The landscape impact of new development, particularly within river corridors. This is controlled by Local Planning Authorities.

Partnership

- 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

Agency Duty

- 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:

- Promote its archaeological objectives through the exercise of its water-management and pollution-control powers and duties.

The Agency has an interest (but no powers) in:

- Direct protection or management of sites of archaeological or heritage interest. This is carried out by LPAs, County Archaeologists and English Heritage.

Partnership

- 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.

Fisheries

Agency Duty

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

The Agency has powers to:

- 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.

The Agency has an interest (but no powers) in:

- The determination of planning applications which could affect fisheries.

Partnership

- Many development schemes have significant implications for fisheries.
- The Agency will work with anglers, riparian owners, developers and Local Authorities to protect fisheries.

Recreation

Agency Duty

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

The Agency has powers to:

- Contribute towards recreation through the exercise of its statutory powers and duties in water management.

The Agency has an interest (but no powers) in:

- Promotion of water sports. This is carried out by the English Sports Council and other sports bodies.

Partnership

- The Agency will work with the Countryside Agency, the English Sports Council, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.

Navigation

Agency Duty

- None in Adur and Ouse catchments.

The Agency has powers to:

- None in Adur and Ouse catchments.

The Agency has an interest (but no powers) in:

- The management and operation of navigations within the region.

Partnership

- The Agency will work with British Waterways, other navigation authorities and navigation users to improve navigations generally as valuable environmental, recreational, commercial and heritage resources.

APPENDIX 2

ORGANISATIONS CONTACTED FOR PRELIMINARY CONSULTATION

Adur District Council
Brighton & Hove Council
Business in the Community
Council for the Protection of Rural England
Country Landowners Association
Countryside Agency
East Sussex County Council
English Heritage
English Nature
Farming and Rural Conservation Agency (on behalf of MAFF)
Forestry Commission
Horsham District Council
Lewes District Council
Mid Sussex District Council
National Farmers Union
National Society for Clean Air
Railway Land Wildlife Trust
Rother District Council
Royal Society for the Protection of Birds
South East Water
Southern Water Services
Sussex Area Environment Group
Sussex Downs Conservation Board
Sussex Sea Fisheries Committee
Sussex Wildlife Trust
The Inland Waterways Association
The Port of Shoreham
Wealden District Council
West Sussex County Council

APPENDIX 3

TYPES OF PLAN REQUIRING ENVIRONMENT AGENCY CONSULTATION

1. **STRUCTURE PLAN**: Statutory consultation. Provides an opportunity for the Agency's concerns and priorities to be reflected as policies and guidance at a strategic level.

2. **UNITARY DEVELOPMENT PLAN**: Statutory consultation. Provides an opportunity for the Agency's concerns and priorities to be reflected at both strategic and local level, and provides the opportunity to influence the type, location and scale of new development.

3. **LOCAL PLAN**: Statutory consultation. Provides an opportunity for the Agency's concerns and priorities to be reflected as policies and guidance at a local level and to influence type, location and scale of new development. Provides an important link to the development control process and the Agency's LEAPs.

4. **MINERALS LOCAL PLAN**: Statutory consultation. Opportunity to influence location for new mineral extraction sites, as well as policies relating to the operation and aftercare of the sites.

5. **WASTE LOCAL PLAN**: Statutory consultation. Opportunity to influence location for new waste sites, as well as policies relating to the operation and aftercare of the sites.

6. **AIR QUALITY MANAGEMENT PLAN**: Statutory consultation. To assist in identification/regulation of polluting processes.

7. **DEVELOPMENT BRIEFS**: To identify constraints on new development and requirements to protect and enhance the environment.

8. **WASTE RECYCLING PLAN**: Statutory consultation. Opportunity to influence location and management of sites.

9. **SHORELINE MANAGEMENT PLAN**: Produced on behalf of coastal bodies to ensure an agreed and co-ordinated management of coastal protection and sea defences.

10. **COASTAL ZONE MANAGEMENT PLAN**: Opportunity to address issues relevant to the Agency's interests with other organisations to ensure a co-ordinated and agreed approach to the overall management of the coastal zone.

11. **LOCAL STRATEGIES** including those for: the coast; the landscape; the countryside; environmental issues; rural areas; conservation; transportation. To influence issues relevant to the Agency

12. **NATIONAL PARK MANAGEMENT PLAN**: Statutory consultation. To consider management issues relevant to the Agency's interests.

13. **AONB MANAGEMENT PLAN**: Statutory Consultation. To consider management issues relevant to the Agency's interests.

APPENDIX 4:

DEVELOPMENTS REQUIRING ENVIRONMENT AGENCY CONSULTATION

General

1. Development within or adjacent to any watercourse or which includes a discharge to a watercourse.
2. Development including landraising, in areas at risk of flooding from rivers including tidal lengths, and the sea.
3. Development on, under or adjacent to any flood bank, sea defence or other flood control structure.
4. Development which may affect an aquatic/wetland site of conservation interest.
5. Development of contaminated land e.g. gas works, historic industrial use, bulk fuel storage, chemical production and landfill.
6. Development involving the disposal of sewage other than to a public sewer, including the use of septic tanks, cesspits, private sewers and private sewage treatment works.
7. Development which could affect groundwater protection zones.
8. Development which could exacerbate existing sewerage or sewage disposal problems.
9. Development within 250 metres of land which is or has, at any time in the 30 years before, been used for the deposit of refuse or waste and has been notified by the Agency.
10. Development on the site of or within 500 metres (measured from site boundary) of a process subject to Integrated Pollution Control, or subject to the Control of Industrial Air Pollution (registration of Works) Regulations 1989.
11. Development involving the raising or reclamation of land.
12. Development which falls within the Environmental Assessment Regulations 1988.

Specific

13. Residential, industrial or commercial developments greater than 0.5 hectares in area or which incorporate an access road.
14. Major infrastructure schemes e.g. highways, railways, power stations, wind farms, airports, tunnels, oil refineries, pipelines and any associated facilities.
15. Waste management operations including landfill, waste transfer stations, incinerators, scrap yards, solvent recovery plants, baling and re-cycling plants.
16. Mineral workings and exploratory works to include oil and gas exploration and land restoration projects.
17. Petrol filling stations or other bulk storage facilities for petroleum products and chemicals including hazardous substances, fertilisers and pesticides (above or below ground).
18. Vehicle parks including plant hire and transport depots.

19. Agricultural developments to include intensive livestock and poultry units, chemical and fertiliser storage, the making and storage of silage and the storage and disposal of manure and effluents.
20. Kennels, catteries, stables, etc.
21. Camping and caravan sites.
22. Timber treatment plants.
23. Cemeteries and crematoriums.
24. Fish farming activities, fish stocking or relocating of fish or works which will restrict the movement of fish.
25. Water-based recreation facilities or developments affecting access to water or waterside areas.
26. Ponds, lakes and reservoirs, including water storage for irrigation.
27. Golf courses.
28. Swimming pools.
29. Forestry activities.

APPENDIX 5:

FURTHER INFORMATION

Further information may be obtained from the following publications which have been produced by the Environment Agency:

An Environmental Strategy for the Millennium and Beyond. Bristol, 1997

Environment Agency Corporate Plan 1998-99. Our Forward Look to 2000-02. Bristol, 1998

Fishing in the South. Southern Region, Worthing.

Guidance for the Control of Invasive Plants near Watercourses. Bristol.

Money for nothing - your waste tips for free. Bristol, 1998.

Policy and Practice for the Protection of Floodplains. Bristol, 1997

Policy and Practice for the Protection of Groundwater. Bristol, 1998

Progress in Water Supply Planning. The Environment Agency's Review of Water Company Water Resource Plans. Bristol, 1998

Saving Water: On the Right Track. Bristol, 1998

Saving Water: Taking Action. Bristol, 1998

Sustaining Our Resources. Southern Region. Worthing, 1997

The Agency's Contribution to Sustainable Development. Bristol, 1997

Viewpoints on the Environment. Bristol, 1997

Waste Minimisation and Waste Management. Bristol, 1997

Water Related Recreation Strategy for the Southern Region. Consultation Draft. Southern Region/English Sports Council. Worthing, 1997

GLOSSARY

Abstraction	Removal of water from surface water or groundwater, usually by pumping.
Abstraction Licence	Licence issued by the Environment Agency under Section 38 of the Water Resources Act 1991 to permit water to be abstracted.
Above Ordnance Datum	Height above mean sea level (Ordnance Survey)
Abstraction Licence	Licence issued by the Environment Agency under Section 38 of the Water Resources Act 1991 to permit water to be abstracted.
Asset Management Plan	Asset Management Plans can be considered as the means by which the water undertakers plan the work required and the capital expenditure necessary, for improvements and maintenance of the water supply, sewage treatment works and sewerage systems. These are drawn up through consultations with the Agency and other bodies to cover a five year period. Asset Management Plans must be agreed by the Department of the Environment Transport and Regions, and OFWAT.
Aquifer	A layer of underground porous rock which contains water and allows water to flow through it.
Area of Outstanding Natural Beauty	Areas of Outstanding Natural Beauty are designated under the National Parks and Access to the Countryside Act 1949 by the Countryside Agency. Their primary purpose is to conserve natural beauty.
Biochemical Oxygen Demand	A measure of the amount of oxygen in water during the breakdown of organic matter.
Biodiversity Action Plan	Nationally, a Biodiversity Action Plan (BAP) was produced in 1995 by the UK Biodiversity Steering Group as part of the Government's commitment to conserving biodiversity made at the "Earth Summit" in Rio de Janeiro. The plan contains costed targets and proposed actions for over 100 species and 14 habitats. Local Biodiversity Action Plans have now been

	produced at a county level (e.g. the Sussex BAP) which focus upon the habitats and species plans listed in the national BAP, relevant to that particular area.
Catchment	The total area of land which contributes surface water to a specified watercourse or water body.
Coastal Protection	Natural or man-made features protecting land over 5m AOD contour
Combined Sewer Overflow	An overflow structure which allows discharge from the sewerage system to a watercourse during wet weather conditions.
Controlled Waters	Defined by the Water Resources Act 1991 Section 104. They included groundwaters, inland waters and estuaries.
Cumecs	Cubic metres per second.
Cyprinid	Family: *Cyprinidae*. Coarse fish belonging to the carp family.
Discharge Consent	A statutory consent issued by the Environment Agency under Schedule 10 of the Water Resources Act 1991 to indicate any limits and conditions on the discharge of an effluent to a controlled water.
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 a water. It is used to classify waters.
Dry Weather Flow	Average daily flow in dry weather including trade effluent and an allowance for infiltration, in litres per day.
Effective Rainfall	The rain remaining as runoff after all losses by evaporation, interception and infiltration have been allowed for.
Environmentally Sensitive Area	Area designated under law as being particularly desirable to conserve, protect or enhance, for example by the adoption of particular agricultural methods.

Eutrophication	The enrichment of waters by inorganic plant nutrients. Normally referred to when nutrient enrichment arises from human actions e.g. from agricultural run-off or from sewage effluent
Floodplain	This includes all land adjacent to a watercourse and the sea over which water flows or would flow, but for flood defences, in times of flood.
Fly Tipping	The unregulated and, hence, illegal, dumping of waste.
General Quality Assessment	A scheme which identifies sets of standards for the consistent measurement of water quality irrespective of uses applying to a river stretch.
Green Belt	A zone of designated countryside immediately adjacent to a town or city, defined in development plans for the purpose of restricting outward expansion of urban areas, and preventing coalescence of settlements.
Groundwater	Water which is contained in underground rocks (aquifers).
Greenhouse Gas	Natural and man-made gases which influence the greenhouse effect. Gases include carbon dioxide, methane, ozone and chlorofluorocarbons.
Global warming	The rise in the temperature of the globe due to the effects of greenhouse gases which cause the greenhouse effect.
Habitat Action Plan	Conservation Action Plans for specific habitats as documented in both national and local Biodiversity Action Plans.
Heritage Coast	Stretches of the most undeveloped coastline, designated by the Countryside Agency, in order to protect and conserve the coast's vulnerable beauty, and enhance people's enjoyment of the coast without risking its conservation.
High Natural Dispersion Area	Coastal or estuarine areas which have been identified by the DETR as having high natural dispersion characteristics.

Hydrograph	The graph of groundwater levels, river levels, or river flow.
Internal Drainage Boards	Autonomous public bodies under the control of board members (including those elected by agricultural ratepayers and those nominated by local authorities), with responsibilities and powers for flood defence on ordinary watercourses (non-Main Rivers) under the Land Drainage Act.
Landfill Tax	A levy per tonne or cubic metre of waste sent to landfill, used to encourage the use of recycling and waste minimisation.
Local Nature Reserve	Areas of local conservation importance as designated by Local Authorities (and in consultation with English Nature) under section 21 of the National Parks and Access to the Countryside Act 1949.
Macroinvertebrate	Animals lacking a backbone which are retained on a 0.5mm sieve.
Main River	All watercourses are designated as either 'Main River' (defined in maps held by the EA and MAFF) or 'ordinary watercourses' ('non-Main River'). Main Rivers include all watercourses which contribute significantly to catchment drainage, although ordinary watercourses may be significant locally. The EA has powers to carry out works to protect land and property from flooding by improving drainage of Main Rivers only, under the Water Resources Act 1991. Local authorities (and in some areas Internal Drainage Boards) have powers for flood defences on ordinary watercourses, and the EA has a supervisory role.
Mld	Megalitres (million litres) per day.
µg/l	Micrograms per litre.
mg/l	Milligrams per litre.

National Nature Reserve	An area of land designated by English Nature under Section 35 of the Wildlife and Countryside Act 1981. They are managed by, or on behalf of, English Nature specifically for nature conservation purposes.
Nitrate Vulnerable Zones	Areas containing waters which are particularly susceptible to nitrate pollution, as designated under the EU Nitrates Directive .
PM_{10}	Particulate matter smaller than 10 microns in diameter.
Potable Water	Water of suitable quality for drinking.
Prescribed Flow Condition	A condition attached to an abstraction licence such that if the river flow is less than a given flow, abstraction must cease until flows are restored.
Ramsar Sites	Internationally important wetland sites adopted from the Ramsar Convention on Wetlands of International Importance especially as waterfowl habitats (1971) and ratified by the UK government in 1976.
Return Period	The return period of a flood. Flood events are described in terms of the frequency at which, on average, a certain severity of flood is exceeded. This is usually expressed as a return period in years, e.g. 1 in 100 years.
Riparian Owner	A person or organisation with property rights on a river bank.
River Corridor	Land which has visual, physical or ecological links to a watercourse and which is dependent on the quality or level of the water within the channel.
River Quality Objective	The level of water quality that a river should achieve in order to be suitable for its agreed uses.
Salmonid	Family: *Salmonidae*. Game fish including salmon, sea trout and trout.

Sea Defences	Natural or man-made features protecting land below 5m AOD contour.
Site of Nature Conservation Importance	Site of local nature conservation importance as designated by Local Authorities for planning purposes
Site of Special Scientific Interest	A site given statutory designation and protection by English Nature because it is particularly important, on account of its nature conservation value under the Wildlife and Countryside Act 1981 as amended.
Special Area for Conservation	Internationally important nature conservation site designated under the EU Habitats Directive (92/43/EEC). All SACs are also SSSIs.
Special Protection Area	Internationally important nature conservation site designated under the EU Wild Birds Directive (79/409/EEC). All SPAs are also SSSIs.
Species Action Plans	Conservation Action Plans for specific species, as documented in both national and local Biodiversity Action Plans
Statutory Water Quality Objectives	Water Quality objectives set by the Secretary of State for the Environment, in relation to controlled waters.
Strata	Layers of rock, including unconsolidated materials such as sands and gravel.
Sustainable development	'Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs' (definition from World Commission on Environment and Development, 1987. Our Common Future - The Brundtland Report).

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

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