

local environment agency plan



ENVIRONMENT AGENCY

EAST HAMPSHIRE CONSULTATION DRAFT JULY 1999

NATIONAL LIBRARY &
INFORMATION SERVICE

AMAZON REGION

Knowledge is power and the more you know, the more you can do.
Derek Giddens
Preston College, Preston



ENVIRONMENT
AGENCY

YOUR VIEWS

With this Consultation Draft LEAP the Agency hopes to establish the views of the public and other external organisations regarding the relative importance of the identified issues. It is likely that new issues will be raised in this process and these will be considered by the Agency in formulating a Final Plan for the East Hampshire LEAP area.

The Agency would welcome your views on the following:

- Are all the issues valid?
- Have any issues been missed out?
- Do you agree with the ranking of the issues?

The ranked list of issues represents the priorities of the Hampshire Area Environment Group.

- Which issues should be moved up or down the ranking?
- Have you any other suggestions for actions?
- Can your organisation help complete any of the actions?

Please fill in the questionnaire enclosed and send it to the address below by 11th October 1999

Please send your written comments to:

Customer Services
Environment Agency
Hampshire and Isle of Wight Office
Colvedene Court
Colden Common
Winchester
Hampshire
SO21 1WP
Tele: 01962 713267
Fax: 01962 841573

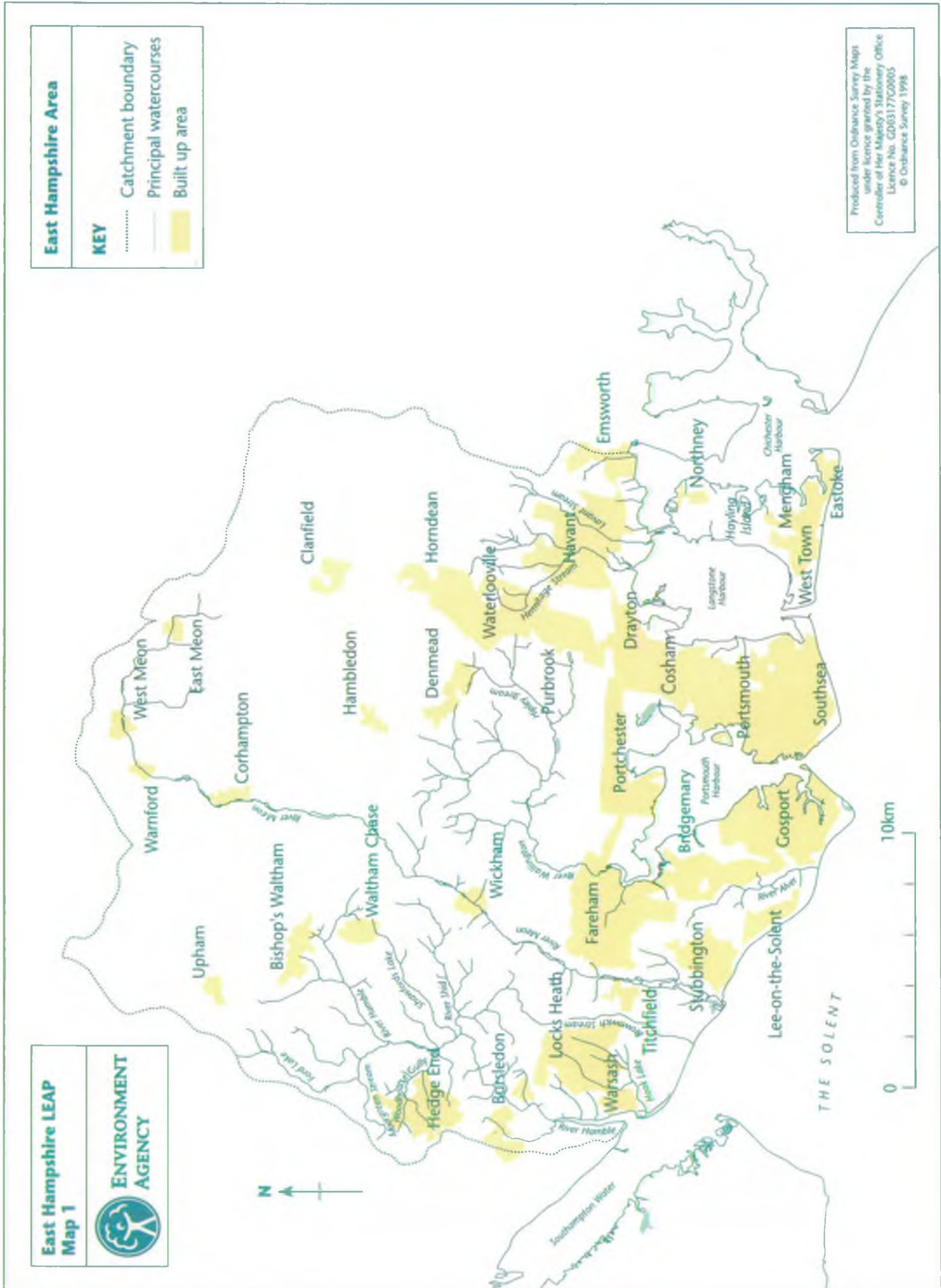
Privacy Note

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.



Catchment Overview



East Hampshire Area Key Details

General

Area (sq km) 570.99

Administrative Details

Local Authorities within Leap Area: Size (km²)

Chichester	14
East Hampshire	83
Eastleigh	34
Fareham	79
Gosport	27
Havant	55
Winchester	239

Unitary Authorities

Southampton	1
City of Portsmouth	39

Water Resources

Average Annual Rainfall 900mm/yr

Licensed Abstractions

Groundwater (MI/Yr)	87,530
Surface Water (MI/Yr)	4,298

Flood Defence

	Length (km)
Coastline including main tidal waters	165.3

Main River including tidal lengths	160.0
------------------------------------	-------

Sea Defences Agency responsibility	4.9
------------------------------------	-----

Tidal banks Agency responsibility	23.8
-----------------------------------	------

Conservation

Sites of Special Scientific Interest	24
Water Dependent National Nature Reserves	1
Ramsar to Special Protection Areas	3
Water dependent Special Areas of Conservation	2

Water Quality

River ecosystem classification between 1995 and 1997 Class

RE1	4
RE2	13
RE3	10
RE4	2
RE5	4

Number of EC

Designated Bathing Waters	8
---------------------------	---

Achieved Mandatory Standards	8
------------------------------	---

Achieved guideline Standards	6
------------------------------	---

Fisheries

Length of EC Designated Fisheries (km):	24.4
---	------

Cyprinid	0
Salmonid	14.4km

Pollution Prevention and Control

Licensed Waste Sites	62
Process Industry Regulation	11
Radioactive Substance Regulation	10

Pollution incidents 1997-1998	284
-------------------------------	-----

CONTENTS

FOREWORD..... II

1. INTRODUCTION..... 1

THE ENVIRONMENT AGENCY 1

LOCAL ENVIRONMENT AGENCY PLANS 2

2. ENVIRONMENTAL OVERVIEW OF EAST HAMPSHIRE..... 4

INTRODUCTION 4

GEOLOGY AND TOPOGRAPHY 4

HYDROGEOLOGY AND THE RIVER SYSTEMS 5

WATER QUALITY 5

LANDSCAPE, WILDLIFE AND CULTURAL HERITAGE 5

AIR QUALITY 6

POPULATION AND INDUSTRY 6

ADMINISTRATION 6

3. ENVIRONMENTAL ISSUES AND OPTIONS FOR ACTION 7

INTRODUCTION 7

CLASSIFICATION OF ISSUES 7

PROPOSED ACTIONS 7

4. A BETTER ENVIRONMENT THROUGH PARTNERSHIP 33

THE PARTNERSHIP APPROACH 33

LEAP PLAN 34

LIAISON WITH LOCAL AUTHORITIES 34

AREA ENVIRONMENT GROUP (AEG) 35

APPENDIX 1: CONSULTATION..... 36

APPENDIX 2: GLOSSARY..... 37

HO

DOC



ENVIRONMENT AGENCY

Information Services Unit

Please return or renew this item by the due date

Due Date

~~20/02/07~~

FOREWORD

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

Local Environment Agency Plans (LEAPs) aim to provide a means for setting priorities, solving and protecting and improving the environment in a co-ordinated way for the next five years. The East Hampshire LEAP Consultation Draft gives everyone interested in the environment of the area an opportunity to be actively involved in making a difference to its future.

This LEAP examines local issues and considers the stresses and strains on an area that has some of Europe's highest conservation designations alongside areas of high urban and industrial development. It provides a focus for all participants to undertake and achieve environmental enhancement in a sustainable manner and includes the identification of partnership opportunities.

This plan represents a shared vision for the future and will play a vital 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 like to thank you for your time spent studying this plan and welcome any comments you wish to make about it. Your responses to this consultation exercise will be considered and where appropriate, incorporated into the final action plan – the LEAP identifying how the Agency will enhance the environment of the East Hampshire LEAP area during the next five years.

Peter Quarmby

Hampshire and Isle of Wight Area Manager

1. INTRODUCTION

1.1 THE ENVIRONMENT AGENCY

The Environment Agency's overall vision is:

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

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

At the heart of sustainable development is the integration of human needs with 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.

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.

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.

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 concerns', which are used for the Agency's planning processes. These can be summarised as:

1. Addressing climate change - helping to ensure that greenhouse gas emissions meet their required targets
2. Improving Air Quality - ensure that our air is of a quality that is not affected by discharges from major industries
3. Managing Water Resources - ensure that our water resources are properly managed to provide water for all reasonable needs without harming the environment
4. Conserving and Enhancing Biodiversity - ensure that our wildlife is protected and their habitat increased
5. Managing Fisheries - ensure that our diverse and invaluable fisheries are protected and their habitats increased
6. Delivering integrated river basin management - ensure that all controlled waters are of sustainable quality for their different uses; that land and property is protected from flooding; and that opportunities for people to enjoy the water environment are protected and improved

7. Conserving the land - ensure that our land is conserved and protected from contamination, and encouraging the clean-up of contaminated land where it threatens water resources
8. Managing waste - ensure that our waste is managed safely
9. Regulating major industries - ensure that adverse effects on air, land and the water environment are minimised

1.2 LOCAL ENVIRONMENT AGENCY PLANS

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

LEAPs help the Agency to identify and assess, prioritise and solve local environmental issues grouped around the nine environmental concerns, taking into account the views of local stakeholders. The outcome of the process is a local programme of integrated action for environmental improvement.

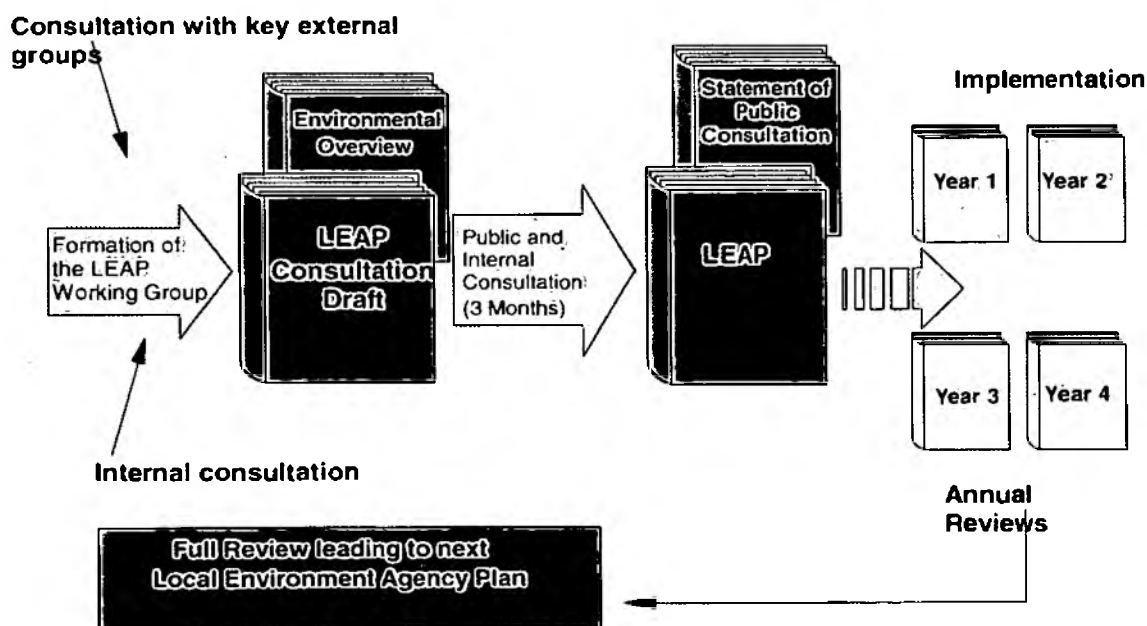
LEAPs replace the Catchment Management Plans which were produced by the former National Rivers Authority and build on their success by covering all the Agency's functions.

1.2.1 The LEAP Process

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.

Figure 1

THE LEAP PROCESS



1.2.2 LEAP Consultation Draft

The East Hampshire 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/improve the local environment. This document is the main focus for public consultation. The issues and options for action put forward to address those issues have been structured around the Agency's nine principal environmental concerns.

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 East Hampshire Environmental Overview supports this Consultation Draft and provides the background to the issues.

The publication 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 by 10th September 1999. At the end of the consultation period a Statement on Public Consultation will be produced which will give the results of the process.

1.2.3 LEAP Plan

The final LEAP Plan will take into account the results of consultation and will be produced in early 2000. It will contain a list of 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.

Annual Review

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 improve the local environment further.

2. ENVIRONMENTAL OVERVIEW OF EAST HAMPSHIRE

2.1 INTRODUCTION

The East Hampshire LEAP area is defined as the surface catchments of the rivers Meon, Hamble and Wallington (in addition to several smaller watercourses). It extends from the Hamble estuary in the west to Emsworth and Hayling Island in the east, and incorporates Portsmouth harbour, Langstone harbour and part of Chichester harbour. The main towns within the LEAP area are Portsmouth, Havant, Fareham, Gosport and Horndean, situated along the southern coastal strip. The Chalk Downs to the north are predominantly rural.

By virtue of its location, geology and cultural heritage, East Hampshire has a great diversity of landscape, flora and fauna. The wildlife importance of the coastline in particular is recognised at the national and international level through the system of nature conservation designations.

The Agency's vision for East Hampshire is of an area:

- that is recognised for the environmental character and special qualities of its principal river valleys, as well as the coast;
- whose population recognises the importance of the environment to economic and social well-being;
- in which the principles of sustainable development are applied to key issues, such as the incorporation of major new housing development, waste management, and transport.

The issues that need to be addressed in order to realise this vision are set out in Section 3. The remainder of this section sets the broader context, by providing a summary of the Environmental Overview.

2.2 GEOLOGY AND TOPOGRAPHY

The geology of this area is folded along east-west trending axes. The higher land to the north of Bishop's Waltham and Horndean (about half the LEAP area) is underlain by Chalk. To the south, the Chalk dips below Tertiary strata (sands, silts and clays) and outcrops to the south in the Portsdown Anticline. The Chalk is the main hydrogeological feature of the catchment and gives rise to many streams and other water features.

2.3 HYDROGEOLOGY AND THE RIVER SYSTEMS

The area's main watercourses are the Rivers Hamble and Meon to the west, and the Wallington to the east. In addition, several small watercourses feed into the three large harbours of Portsmouth, Langstone and Chichester and into the Solent.

The main hydrogeological feature of the area is the Hampshire Chalk block. Many streams rise as springs at the southern margin of the Chalk where it is overlain by Tertiary sands and clays. The Chalk is extremely permeable, most rainfall either evaporates or percolates into the groundwater system and aquifer storage gives rivers a stable flow regime which peaks in Spring, when groundwater levels are high, and recedes to a minimum in late Autumn.

The swallow-holes in the Chalk in the Lovedean, Cowplain, Horndean and Rowlands Castle area are in direct connection with the Havant and Bedhampton springs and need to be protected against contamination, as these springs are used for potable water supply for Portsmouth and surrounding area.

2.4 WATER QUALITY

The River Meon can be considered a true Chalk stream and has relatively stable chemical and physical properties due to the long residence time of the water in the Chalk aquifer. The river is heavily managed and drains a mainly rural, agricultural catchment.

The Rivers Wallington and Hamble also drain mainly agricultural catchments. Water quality in the River Hamble and its tributaries has improved markedly in recent years, mainly as a result of investment in a new sewage works at Bishops Waltham, but also because of farm campaigns to improve the water quality of agricultural run-off.

The remainder of the area's streams are found in the heavily populated coastal areas. Water quality varies although it is predominantly of good quality. The main water quality problems in the area are due to the urban pressures of diffuse run-off, storm overflows or industrial inputs. Due to the small size of many of these catchments, low flows also contribute to water quality problems.

2.5 LANDSCAPE, WILDLIFE AND CULTURAL HERITAGE

The northern part of the catchment is a predominantly rural, rolling landscape. In contrast, the south of the catchment consists of a largely flat and heavily urbanised coastal strip. The coastal area (comprising broad enclosed tidal harbours, estuaries and open coastline) has significant nature conservation interest with extensive salt marsh and mudflats, coastal grazing marsh, saline lagoons, vegetated sand dunes and shingle. Large areas are designated as both European and internationally important sites for wildlife. The reed beds and associated wetland habitats at Titchfield Haven are a National Nature Reserve. The rivers of the LEAP area are also important habitats, particular the Meon (a Chalk river) and the Hamble. The floodplains of these rivers support areas of wet grassland.

The area's archaeological heritage gives an insight into the lives and livelihoods of the people who lived in East Hampshire through the centuries. The Chalk Downs are a surviving prehistoric landscape. Historic farmsteads, barns and cottages exhibit traditional shapes and cladding of local material. The City of Portsmouth has a long naval history and contains many buildings and structures associated with its defence through the ages. The river valleys also contain important built structures, such as the water mills at Bursledon, Wickham and Durley, and remains associated with the management of traditional water meadows.

2.6 AIR QUALITY

Air quality in the East Hampshire LEAP area is generally good. Portsmouth has the worst air quality in the area, with traffic being the main cause. Portsmouth City Council has been using nitrogen dioxide diffusion tubes for a few years and has also used a mobile laboratory to measure concentrations of other pollutants.

2.7 POPULATION AND INDUSTRY

The resident population of the LEAP area is approximately 600,000. Industry is concentrated in the urban coastal strip, especially around Portsmouth Harbour and its commercial port. Away from the coast the area is predominantly rural with arable and mixed farming. Watercress is grown in the Chalk valley of the River Meon.

2.8 ADMINISTRATION

The East Hampshire LEAP area falls entirely within the County of Hampshire. The majority of the area lies within the administrative boundaries of Winchester and Portsmouth City Councils and East Hampshire District Council, although parts of Havant, Fareham, Gosport, and Eastleigh Borough Council areas fall within the LEAP area.

3. ENVIRONMENTAL ISSUES AND OPTIONS FOR ACTION

3.1 INTRODUCTION

This section of the LEAP Consultation Draft details the environmental issues that the Agency considers need to be addressed within the Agency's future Action Plan for the area. This preliminary list of issues has been identified by examining the current state of the area's environment and the pressures upon it. A copy of the Environmental Overview, which provides the background to the issues, can be obtained from the Agency on request.

The Area Environment Group (AEG), whose members represent a wide range of interests in the County, helped to define the issues. Discussion meetings were also held with Hampshire County Council and English Nature, and the Agency invited comment by correspondence with other organisations that have a specific interest in the area (see Appendix 1). Comments and ideas have been incorporated wherever possible and the Agency is grateful for the contribution of the time and effort from respondents and consultees.

This Consultation Draft is intended to encourage debate and to seek your views on the environmental issues that face the area. Many of the issues are inter-related and this reflects the need for integrated environmental management.

3.2 CLASSIFICATION OF ISSUES

The issues are not arranged in any particular order of relative importance but have been grouped in accordance with the Agency's 'environmental concerns', as outlined in Section 1.

The Environmental Overview makes reference to a number of additional issues that have not been brought forward into the Consultation Draft. These are:

- not directly relevant to the Agency's responsibilities, but could be addressed by other organisations (e.g. the Local Authorities); or
- matters which can be addressed by the Agency through its day to day responsibilities, such as regulating water abstraction licences, issuing discharge consents, and responding to planning applications.

3.3 PROPOSED ACTIONS

The following section gives a brief explanation of each issue and suggests potential options for action to address the issue. The advantages and disadvantages of each option are identified, together with the likely cost to the Agency and potential partners.

The potential cost to the Agency of each action has been categorised as either:

- High (H – above £250,000); or
- Medium (M - £50,000 - £250,000); or
- Low (L – below £50,000).

Whilst the cost of a “Do Nothing” option is shown to be nil, this can be misleading. In many cases the issue will need to be addressed at some time in the future, possibly at higher cost.

ISSUES SUMMARY

Environment Agency Concern*	Issue
Addressing Climate Change	1. The need for the sustainable management of landfill gas to minimise the effects on climate change
Improving Air Quality	2. The odour problem at Ryvan Chemical plant
Managing Water Resources	3. Groundwater abstraction for public water supply poses a risk to river flows and The Moors Site of Special Scientific Interest
	4. Summer abstraction from watercourses is contributing to low river flows
	5. The impact of exploiting the Upper Greensand aquifer is not fully understood
	6. The hydrometric monitoring network in the LEAP area is incomplete
Enhancing Biodiversity	7. Certain key species and habitats are especially threatened
	8. Significant sections of rivers have been damaged by insensitive management
Managing Freshwater Fisheries	9. Lack of public angling facilities
Delivering Integrated River-Basin Management- flood defence	10. A sustainable coastal defence strategy is required

* From: An Environment Strategy for the Millennium and Beyond (Environment Agency 1997)

Environment Agency Concern*	Issue
Delivering Integrated River-Basin Management- water quality	11. Development proposed in the upper areas of sub-catchments has the potential to increase flood risk downstream
	12. Piecemeal management of coastal defences at Hayling Island is environmentally damaging and ineffectual
	13. The Havant and Bedhampton Springs, critical for water supply, are vulnerable to pollution
	14. Diffuse pollution of watercourses occurs from developed areas and agricultural activities
	15. The potential effects of watercress farms on the River Meon require investigation
	16. The effects of Combined Stormwater Overflows are unknown
	17. The environment effects of Tributyl Tin (TBT) and alternative anti-fouling paints used on boats are unknown
	18. The Environment Agency currently has no formal contingency plan for oil and chemical pollution incidents in the marine environment
Delivering Integrated River-Basin Management- recreation	20. Intensive recreational use of the coastal strip, estuary and river valleys has the potential to result in damage and disturbance to nature conservation interests and people's enjoyment of the environment
Conserving the Land	21. The significant amount of contaminated land in the LEAP area will have resource implications under new legislation
Managing Waste	22. The environmental cost of waste disposal is significant
Regulating Major Industries	<i>No issues identified</i>

1. The need for the sustainable management of landfill gas to minimise the effects on climate change

Landfill gas is generated by the decomposition of organic waste within landfill sites. Whilst it contains many trace elements which give it odour, the most significant components of landfill gas are carbon dioxide and methane. Methane is a flammable, asphyxiate and powerful greenhouse gas. There are former and current landfill sites in the LEAP area that contribute to the greenhouse gases in the atmosphere.

The UK Climate Change Impacts Review Group (CCIRG) indicates the following possible changes for Southern England:

- a rise in temperature at the rate of about 0.2°C per decade;
- winter precipitation will increase while summer precipitation will decrease;
- potential evapotranspiration will increase;
- sea level will rise at the rate of about 5mm per year or 500mm per century.

This could mean that riverine floods are likely to become more frequent. A rise in sea level creates an increased risk of coastal flooding and overtopping of coastal defences. This risk would be further increased if storm frequencies increase (see Issue 10).

Rising sea levels will also reduce the extent of the intertidal zone, and associated habitats, between the high tide level and sea defences (a process known as 'coastal squeeze') (see Issue 10). It is difficult to assess what the impact on groundwater recharge will be. However, climate change may result in lower river flows, and consequent lack of dilution for discharges during the summer months.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	No resource demand	Landfill gas will be emitted to atmosphere contributing to greenhouse gas emissions	Nil	-
Analyse the information on landfill gas emissions from landfill sites and prioritise sites where gas can be flared or used as a fuel to produce energy.	Highlights those sites where action will be most beneficial in reducing the amount of methane emitted to atmosphere	Resource demand	L	Local authorities Landfill operators
Use Waste Management Licence conditions to encourage operators of key sites to manage the enclosed flaring or energy recovery from landfill gas	Partnership approach to solving an environmental problem	Resource demand. Possibility that Agency could be challenged through an appeal to Secretary of State	L	Local authorities Landfill operators

2. The odour problem at Ryvan chemical plant

The Agency has received complaints from the public about the unpleasant odour emanating from the Ryvan chemical plant at Hedge End. This on-going problem needs to be addressed to reduce nuisance to the public.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Continued nuisance to the public	Nil	-
Work with the company to develop a strategy to reduce odours	Reduction in nuisance to the public		L	Ryvan Chemical Company

3. Groundwater abstraction for public water supply poses a risk to river flows and to the Moors Site of Special Scientific Interest

The Rivers Meon and Hamble have been recognised by the Agency as suffering from low flows caused by abstraction for public water supply.

Although flows on the river Meon are not heavily depleted by Public Water supply abstraction, if the licences at Soberton and West Street were used at their maximum abstraction rates, there could be a significant impact. Negotiations with Portsmouth Water should ensure that the licences are capped, which will protect the River Meon from depletion in the future.

Hoe Pumping Station is adjacent to The Moors SSSI at Bishops Waltham. Hoe is only used as a stand-by source but when it is used, water levels and river flows on The Moors decline dramatically. The Moors was identified in the Agency's National Environment Programme which has been approved by the Government. As a result, Hoe Pumping Station will be closed by 2003.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Potential for full exploitation of licences, which could result in adverse environmental effects	Nil	
Promote the incorporation of water conservation measures in new development	Reduction in volume of water abstracted	None identified	Low	Portsmouth Water Plc
Implement the proposals to cease abstraction at Hoe Pumping Station	Protect The Moors SSSI and flows in the river Hamble	Potentially high replacement cost for the water company	Low	Portsmouth Water Plc
Reduce the licensed abstraction at Soberton in order to alleviate the low flow problems on the River Meon	Protection of flows on the River Meon	None identified	Low	Portsmouth Water Plc

4. Summer abstraction from watercourses is contributing to low river flows

The Regional Licensing Policy clearly states that there is a presumption against summer abstractions from surface water unless winter storage is provided. Licences that were issued before clear policies were developed permitted summer abstraction from watercourses. Many of these licences were issued in the 1960s as Licences of Right with no flow conditions and no assessment of environmental impact.

Where these licences are unsustainable, the DETR licensing review gives scope for reducing or curtailing the licence. All damaging summer abstractions from surface water should be identified and solutions investigated. Wherever possible this should be achieved by negotiations with licence holders. Although payment of compensation for revoking licences has always presented a problem in taking action, after 2012 compensation will no longer be paid.

Unlicensed trickle irrigation causes problems in the south of the LEAP area, where significant volumes of water are abstracted with no form of control. This causes derogation of the environment and of other licences. The DETR licensing review will make trickle irrigation licensable over a transitional period.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Potential for full exploitation of licences, which could result in adverse environmental effects	Nil	Spray irrigators
Curtailment of Licences of Right that are known to cause problems and the issuing of modern and sustainable conditions	Reduction of environmental impacts	Additional pumping needed at existing or new sources which could have new adverse impacts	H	PW Plc
Introduce licensing for trickle irrigation	Increased control of summer abstraction rates. Protection of licensed abstractions	Potentially high cost to trickle irrigators	L	Spray irrigators

5. The potential impact of exploiting the Upper Greensand aquifer is not fully understood

With policy restrictions on abstraction from the Chalk, abstraction from the Upper Greensand in the north eastern part of the LEAP area may be seen as an alternative. An application has recently been made to increase abstraction from the Upper Greensand aquifer for spray irrigation of grass. This is of concern to the Agency as little is known about the Upper Greensand aquifer and its interaction with the Chalk aquifer.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Continued uncertainty about the effects of additional abstraction on existing abstraction rights	-	-
Assess the implications of abstraction from the Upper Greensand aquifer, based on borehole investigations	Would facilitate the development of an appropriate policy towards the Upper Greensand	Time and resources	H	Abstractors

6. The hydrometric monitoring network in the LEAP area is inadequate

The groundwater monitoring network in East Hampshire is well developed but contains many shallow wells which dry out in the summer. Records from these wells are often incomplete and the observation wells need replacing with deeper, purpose-drilled observation boreholes.

There is a small outcrop of Chalk in the south of the LEAP area at Portsdown Hill, but only four observation boreholes. This makes assessment of groundwater flow direction difficult. Knowledge of groundwater flow is vital in protecting adjacent Public Water supply sources at Maindell and Havant & Bedhampton. It also makes it hard to predict the interaction of rivers flowing over the outcrop with the Chalk aquifer

Measurement of river flow is vital to the management of water resources. Mislingsford Gauging Station is not operating properly and needs further assessment and work to improve it.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Ineffectual flow gauging of the River Meon		
Investigate ways of improving flow gauging at Mislingsford	Would improve understanding	Time and resources	H	None identified
Drill new observation boreholes	Improved understanding of aquifers	Time and resources	H	None identified

7. Certain key species and habitats are especially threatened

The Environment Agency plays a key role in helping to conserve and enhance biodiversity for the benefit of present and future generations. The Agency has specific responsibilities for a number of species and habitats under both the national and Hampshire Biodiversity Action Plans (BAPs). Under the national BAP, the Agency is the lead agency for one habitat (chalk streams) and 13 species. The Meon is a chalk stream habitat and, in addition, a number of species for which the Agency is lead agency are either known to be present in the LEAP area or for which the LEAP area provides suitable habitat. These are: otter; water vole; southern damselfly; white clawed crayfish; and wetland and river molluscs (fine lined pea mussel and Desmoulin's whorl snail).

Pipistrelle bat, for which English Nature is the lead agency, and bittern, for which the RSPB is the lead agency, are also considered to be a priority for action by the Environment Agency.

The wetlands of East Hampshire are of particular concern to the Agency. The post war years have seen a reduction in the extent of wetland areas, possibly due to increased abstraction, and a reduction in the biodiversity of the remaining areas as a result of agricultural intensification.

Options for Action	Advantages	Disadvantages	Financial Cost of Option	Potential Partners
No action (do nothing)	None	Missed opportunities for enhancement		
Implement the habitat action plan for River Meon	Improve the habitat of the Meon.	None	L/M	Hants Biodiversity Partnership
Implement species action plans for otter, water vole, southern damselfly and white clawed crayfish.	Contribute to enhancement of biodiversity in the East Hampshire area	None	L/M	Hants Biodiversity Partnership
Produce species action plans for fine lined pea mussel and Desmoulin's whorl snail	Contribute to enhancement of biodiversity in the East Hampshire area	None	L/M	Hants Biodiversity Partnership
Work with English Nature and RSPB on action plans for bittern and pipistrelle bat.	Contribute to enhancement of biodiversity in the East Hampshire area	None	L	Hants Biodiversity Partnership
Work with MAFF and English Nature to promote agricultural incentive schemes to maintain, restore and increase the area of wetland grassland habitats	Maintain and increase this habitat in the LEAP area	None	L	EN, MAFF

8. Significant sections of rivers have been damaged by insensitive management

Substantial work has been undertaken on the rivers in the LEAP area to increase their drainage capacity and to allow access for fishing. This has had detrimental effects on the biodiversity and landscape of river corridors and the continuity between in-stream and floodplain habitats. Some work has already been undertaken on improving rivers in the area (for example restoration work on the Hermitage stream). However, there is the potential for improving other rivers in the area (for example by restoring natural meanders).

Hampshire County Council has undertaken a landscape assessment of the county, including the East Hampshire LEAP area. With the exception of the River Meon, however, there is a lack of detailed landscape assessment information relating to the river corridors of the LEAP area. Consequently, the Agency cannot take potential impacts on landscape character into consideration when carrying out works on rivers. Landscape assessments could also be used to identify enhancement projects to improve the character of river corridors.

Options for Action	Advantages	Disadvantages	Financial Cost of Option	Potential Partners
No action (do nothing)	None	Missed opportunities for enhancing the landscape and nature conservation value of rivers		
Undertake detailed landscape assessments for river corridors	Agency has sufficient information to assess impacts on landscape as part of day to day activities. Enhancements can be identified.	Time and resources	M	Local authorities
Work with flood defence and fisheries to promote the inclusion of biodiversity objectives to river engineering projects	Improve landscape and nature conservation value of rivers	None	L	
Identify and undertake projects to restore over-engineered rivers.	Improve landscape and nature conservation value of rivers	None	M/H	English Nature, landowners Local authorities

9. Lack of public angling facilities

Most of the area's fishing lakes and river fisheries are owned/managed by fishing clubs or syndicates. As a result, there are few public waters that can be fished.

Options for Action	Advantages	Disadvantages	Cost	Potential partners
No action (do nothing)	None	Continued lack of fishing opportunities	Nil	
Work in partnership to create a new or enhance an existing public fishing lake within reach of the urban population	Provision of a facility that could be used to promote angling. If designed and landscaped properly, it could also provide a significant public amenity	None identified	M	Portsmouth Angling Club Local authorities
Work with developers create a new coarse fishery associated new balancing ponds in the upper catchment.	Provision of a public amenity Could be developed to provide a dual flood defence/ fishery facility associated with the River Wallington	None identified	M/H	Local authorities Developers

10. A sustainable coastal defence strategy is required

Much of the East Hampshire coastline is at or below sea level, including built up areas (such as Portsmouth and Hayling Island) and important conservation sites (such as Farlington marshes, Titchfield Haven NNR and saline lagoons in Portsmouth harbour). These areas are protected by sea defences, without which considerable loss and damage would occur to property, land and nature conservation interest.

The seaward side of the flood defences comprises intertidal habitats, principally saltmarshes and mudflats. These habitats are located in Chichester harbour, Portsmouth harbour, Langstone harbour and in the Hamble estuary. They have been identified as high nature conservation value (of national and international importance) for wintering and migrating bird species, plant assemblages and invertebrates. Large areas have been designated as SSSI and are included within cSAC, SPA and Ramsar sites.

The strategy for management of the East Hampshire coastline is recommended in the East Solent and Western Solent / Southampton Water Shoreline Management Plans. The preferred option in the majority of Management Units is Hold the Line (ie maintain the sea defences). However, this strategy raises two issues relating to the sustainability of the coastal defence strategy as discussed below.

- (i) Flood defence structures deteriorate over time as a result of storm action as well as from normal wear and tear, and thus need to be periodically reviewed. The difficulty and expense of maintaining sea defences is likely to increase as a consequence of rising sea levels, natural subsidence of the coastal plain and the likely increased frequency of storm events as a result of climate change. The continued maintenance of sea defences for the protection of important conservation sites may be difficult to justify on a financial basis since their economic value is limited.
- (ii) It appears that the extent of intertidal habitats, on the seaward side of sea defences, is diminishing in size. The principal cause of loss is thought to be rising sea levels resulting in "coastal squeeze". With rising sea level, intertidal habitats would naturally migrate inland. Where this process is prevented by "hard" sea defences (such as sea walls), saltmarsh and mudflats of national and international importance (and protected under European legislation) are squeezed and ultimately disappear. This is of particular relevance to the Agency since the Habitats Regulations invest a number of responsibilities in the Agency as a "Competent Authority" to assist in maintaining the "favourable conservation status" of sites afforded statutory protection under the Habitats Directive and Wild Birds Directive. Compensatory habitat may need to be created to replace areas of habitat lost.

The ability of Agency to address these issues is hindered by inadequate understanding of both natural coastal processes and the impact of human activity (in particular land reclamation and dredging) on the coastal area.

Reclamation of land (e.g. at Portsea Island) is often carried out to provide sites for development, both commercial and residential, there being a demand in both sectors for waterside locations. This reclamation not only may affect the tidal patterns within the harbour but will also result in the need for additional property to be protected against flooding.

Dredging is carried out on a routine basis by port authorities to keep open shipping channels to harbours. Generally dredging is detrimental to flood defence as erosion of adjacent mudflats, which are an essential element of some lengths of defence, is likely to increase and there will be loss of the material from the system. The impact of dredging on the natural coastal processes that maintain the intertidal habitats may also be a contributory factor in the reduction in these habitats.

One of the first actions towards the preparation of a sustainable coastal management strategy is to undertake a study to improve understanding of coastal processes. From this basis, the feasibility of "managed retreat" and saltmarsh regeneration following should be investigated.

Managed retreat involves setting back the line of actively maintained defence to a new line inland of the original. This option provides opportunities for the creation of new intertidal habitats further inland of the current sea defences. However, the land use on the other side of the sea defences from Portsmouth and Langstone harbours and the Hamble estuary is principally urban, and the opportunities for managed retreat are limited.

Dredged material from the harbours could be used to regenerate the mudflats which are gradually diminishing due to rising sea levels. Whilst this option may give rise to nature conservation benefits, because it retains the sediment within the estuarine system, its wider environmental effects are not fully understood. In particular, the Agency is concerned about the effects on water quality (and consequently biodiversity), because of the potentially contaminated nature of the dredged material, which may contain TBTs (see Issue 17). The dredging process can also lead to an increase in suspended solids and a reduction in dissolved oxygen, affecting water quality. Toxins previously fixed in anaerobic silt can also be released into the overlying water column.

Based on these studies and research, a sustainable coastal management strategy should be developed.

Options	Advantages	Disadvantages	Financial cost of option	Potential Partners
No action (do nothing)	Short term cost savings.	Lack of understanding of coastal processes to inform coastal flood defence strategy, and possible increased risk to lives and property.	L in short term H in long term	
Undertake study of coastal physical processes within the Solent and its harbours	Would help to inform the Agency's long term strategy for sea defence, including managed retreat.	Possible delay of major flood defence works until study completed	M	Local authorities English Nature
Assess the impacts of sea level rise on intertidal habitats in the LEAP area	Allows impacts to be understood so that need for compensatory habitats can be assessed	None	L/M	English Nature, MAFF
Identify areas where managed retreat may be possible	Opportunity to increase area of intertidal habitats	Loss of other land uses/habitats	M	Local authorities
Research into whether it is possible to recreate intertidal habitats	Opportunity to create intertidal habitats	None identified	M/H	English Nature, MAFF
Produce internal Agency guidance on the management of dredging	Policy development ensures consistency of approach to environmental protection	Time and resources	L/M	English Nature MAFF Portsmouth Commercial Port Queen's Harbour Master
Assess impact of mudflat recharge using sediment	Would allow informed decisions about dredging management	Time and resources	L/M	English Nature
Promotion of saltmarsh regeneration schemes where applicable	Opportunity to contribute to halting the current decline in habitat area	Due to sea level rise, unlikely to completely halt decline in habitat	L	English Nature
Based on studies and research, develop a sustainable strategy for sea defence for each vulnerable stretch of coastline	Would assist the Agency and other responsible authorities in managing sea defences in an economical and environmentally acceptable manner.	Increasing pressures on the coastal environment.	H	English Nature, Local authorities

11. Development proposed in the upper areas of sub-catchments has the potential to increase flood risk downstream

Unless carefully controlled, development in the upper parts of sub-catchments can accelerate the speed of run-off and increase the risk of flooding downstream. These problems are already occurring in the Hamble and the Meon sub-catchments where development has taken place. Further development to the south east of Eastleigh would exacerbate this situation, and large-scale development to the west of Waterlooville could increase the risk of flooding from the River Wallington.

Flood retention lakes, such as those constructed at Whitely, can be used to enhance habitats and provide an amenity, as well as ensure effective mitigation against flooding. They are costly to develop, however, and it is necessary to ensure that the costs are borne by developers. To be effective in the long term, it is imperative that flood attenuation measures are properly maintained – preferably under the supervision of a competent authority, such as the Agency or the local authority.

Options for Action	Advantages	Disadvantages	Financial cost of option	Potential Partners
No action (do nothing)	None	Development in upper areas of catchments will increase the risk of flooding downstream	L in short term H in long term	
Seek to prevent inappropriate development through planning policy and development control	Would help to ensure that there is no further increase in flood risk	Agency comments may be ignored	L	Local authorities
Carry out comprehensive studies to develop an integrated strategy for development and river engineering.	Would permit development, improved flood defence and environmental and amenity benefits		M	Local authorities, Developers, English Nature, the public

12. Piecemeal management of coastal defences at Hayling Island is environmentally damaging and ineffectual

The Agency has produced a draft strategy plan for Hayling Island to address this issue. Following consultation with all interested parties, the Agency will seek to implement the strategy in partnership with frontages, district councils and conservation organisations.

13. The Havant and Bedhampton Springs, critical for water supply, are vulnerable to pollution

Swallow holes in the Rowlands Castle and Horndean area have a direct connection with the Havant and Bedhampton Springs to the south. These springs are utilised as a major public water supply for the Portsmouth area. The springs are supplied from a large catchment, in which there is considerable potential for pollution (for example from domestic heating oil).

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Continued threat of pollution	-	
Responses to planning applications	Effective regulatory system	None	L	Portsmouth Water Plc Local authorities
Implementation of Groundwater Protection Zones	Relates specific areas to actual risk	Effective dissemination must be assured	L	Portsmouth Water Plc Local authorities
Implement Notices under the Groundwater Regulations 1998	Potentially very effective	Time and resources	H	Local authorities
Undertake hazard mapping	Pro-active management	Time and resources	M	Portsmouth Water Plc Universities

14. Diffuse pollution of watercourses from developed areas and intensive agriculture

The following inputs are known to have an adverse effect on the area's water quality:

- possible leaching/pollution from former landfill sites;
- potential pollution of groundwater and surface watercourses from leakage of septic tanks (domestic effluent is discharged to septic tanks in rural areas);
- diffuse pollution from urban land uses (mainly industrial estates) and construction sites;
- pollution of surface watercourses and groundwater from pesticides, nitrates and diffuse pollution sources from agricultural intensification

The Agency monitors fresh watercourses to determine whether 'River Quality Objectives' (RQOs), which are tied to the potential uses of the water, are being met. Whilst not statutory, RQOs provide a basis for water quality planning and for investment targeting.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No Action (Do Nothing)	-	Continued problem of diffuse pollution	Nil	-
Continue monitoring and assessing water quality	Provides a consistent method for achieving water quality improvements		L/M	
Influencing and promotion of best practice	Implementation of good engineering features. Amelioration of rapid run-off environmental gain	Cost and land availability	M/H	Local authorities Highways Authority Farmers & NFU Land Owners
Pollution Prevention Campaigns	Raises awareness of causes of pollution. Highlights potential means to deal with them	Time and resources	L/M	Local authorities Highways Authority Farmers & NFU Land Owners
Promote agri-environment schemes such as Countryside Stewardship to create buffer strips and more sympathetic land management practices.	Reduce pollution of water courses by promotion of sympathetic land management practices.	Time and resources.	L/M	MAFF, EN

15. The potential effects of watercress farms on the River Meon require investigation

Although most of the watercress farms on the River Meon have taken measures to ensure their discharges meet the consents set by the Agency, it is known that water quality problems have arisen from the following operations:

- crop harvesting;
- bed cleaning;
- fertilisation practices;
- chemical / pesticide use and storage; and
- produce preparation.

In addition, derelict cress farms could be restored to improve their importance for biodiversity

The Agency needs to establish the impact of these operations and ensure that appropriate environmental mitigation measures are in place.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Possible adverse impact on the water environment	-	-
Assess the effects of the watercress industry both generically and site specifically	Highlights the impact of the industry and allows informed decisions to be made about environmental protection	May take a long time to assess each impact of the industry	M	Producers, NFU, Watercress Growers Association, Horticultural Development Council
Ensure mitigation measures are implemented	Reduces the impact of the industry on the environment	May take a long time to implement good practice and ensure compliance	M	Producers, NFU, Watercress Growers Association, Horticultural Development Council, retailers
Assess the feasibility of restoring derelict cress farms to improve their value for biodiversity	Enhances the biodiversity value of the Meon	Time and resources.	M	EN

16. The effects of Combined Stormwater Overflows are unknown

Combined sewer overflows (CSOs) discharge water from sewerage systems that take both surface and foul drainage during intense and/or prolonged rainfall events. These discharges are designed to alleviate pressure on the sewerage system and any subsequent sewage treatment works. Although any foul drainage is diluted by surface water run-off, only screening is normally required for these discharges. The impact of these discharges on designated bathing waters needs to be addressed to help ensure compliance with the EC Bathing Water Directive.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)		Possible non-compliance with the EC Bathing Water Directive. Aesthetic problems may also occur	-	-
Assess and target CSOs	Feed information into the Asset Management Planning (AMP) process for possible future investment	Resources	L/M	Southern Water services Ltd. Sewerage undertakers
Undertake monitoring	Allows informed decisions to be made about future investment	Resources	M	Southern Water services Ltd. Sewerage undertakers

17. The environmental effects of Tributyl Tin (TBT) and alternative anti-fouling paints used on boats, are unknown

Tributyl Tin (TBT) is used as an anti-fouling paint on vessels over 25m in length and on MOD vessels. Due to concerns over environmental impacts, its use has been banned on vessels under 25m in length since 1987. By 2006, its use will be banned entirely. TBT concentrations have declined but TBT released from sediments and the hulls of larger vessels have meant that it has not been eliminated from the water column, or sediments at many coastal locations.

The impact of alternative anti-fouling paints, which can be used on vessels of less than 25m in length, is also a concern – particularly in harbour or estuary locations where numerous boats are present and water exchange is restricted.

Options	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)		Potential adverse environmental effects of the use of anti-fouling paints		
Implement a study on the effects of anti-fouling agents in use today	Highlight potential problems and identify possible remedial measures	A significant programme of work would be required, with both local and national input	M/H	Local authorities, Port and Harbour Authorities, MAFF, Health and Safety Executive, English Nature, RYA
Establish collaborative projects and best practice guidelines for the use and disposal of marine anti-fouling agents	Would minimise risk to the environment	Difficult to enforce	L/M	Local authorities, Port and Harbour Authorities, RYA, BMIF, Marina Development Ltd.

18. The Agency currently has no formal contingency plan for oil and chemical pollution incidents in the marine environment

Port and Harbour Authorities are required to develop a contingency plan, which must be co-ordinated with that of neighbouring Authorities. The Solent area is fortunate in having a comprehensive and co-ordinated plan between adjacent Authorities. It is important, however, that the Agency's contingency planning for major pollution events, and the subsequent disposal of waste oil and oiled material, is developed and integrated effectively.

Options	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)		Potential for continued lack of integration and greater chance of incidents not being cleared up effectively	-	
Liaise with relevant port and harbour authorities to promote integration	Integrated plans developed for the Solent	None identified	L	Portsmouth Commercial Port Queen's Harbour Master Maritime & Coastguard Agency Local authorities
Arrange 'dry runs' to test contingency planning procedures	Verify efficiency/effectiveness of proposed plans	None identified	L/M	Portsmouth Commercial Port Queen's Harbour Master Maritime & Coastguard Agency Local authorities
Evaluate waste disposal options	Find solution to waste disposal problem	None identified	M/H	Portsmouth Commercial Port Queen's Harbour Master Maritime & Coastguard Agency Local authorities Waste operators

19. The Environment Agency requires more information on the extent of recycling of sewage sludge as a soil conditioner for agricultural benefit, and needs to ensure compliance with best practice

In view of increasing landfill costs and statutory cessation of sea disposal for untreated sewage, there will be a need to find other disposal or recycling routes, such as the spreading of sewage sludge on land as a soil conditioner. Whilst such activity is exempt from waste management licensing by the Agency, effective monitoring is necessary to ensure that any spreading is for the benefit of agriculture and not merely a disposal operation. Monitoring is also required to ensure that it is carried out in ways, and in places, that do not cause harm to the environment. The case for the spreading of other controlled waste to land has still to be proven.

The Environment Agency Southern Region has recently agreed a Regional Strategy for the Disposal of Sewage Sludge on Farmland. In summary, this seeks to ensure compliance with exemption conditions and appropriate monitoring by the Agency's Environment Protection officers. A best practice guide has been produced and the Agency is progressing its audit role.

Options	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	None	Potential harm to the environment, resulting from inappropriate recycling of sewage sludge on land	Nil	
Ensure implementation of the Regional Strategy for the Disposal of Sewage Sludge and Controlled waste on Farmland	Avoidance of potential harm to the environment. Improved public perception of the risk to the environment	Potential risk to the environment	M	Local authorities Water companies Landowners / farmers

20. Intensive recreational use of the coastal strip, estuary and river valleys has the potential to result in damage and disturbance to the nature conservation interest and people's enjoyment of the environment

Portsmouth, Langstone and Chichester Harbours, the Upper Hamble Estuary and the sand dunes and shingle of the coastal strip, act as magnets for recreational activity. In addition to the more formal activities such as sailing, canoeing, water skiing, the area provides opportunities for people to enjoy wildlife (in particular bird watching) and to appreciate the openness and tranquillity of the landscape. However, the area supports a number of habitats and species of European importance, reflected in designation of large areas as Special Area for Conservation and Special Protection Areas under the Habitats Directive and Wild Birds Directive.

The potential for adverse impacts on nature conservation has been identified (due to direct damage such as trampling of vegetation or by disturbance of wildlife such as nesting birds). There is also the potential for impacts on people's enjoyment of the environment, particularly people undertaking informal and quiet activities. However, there is at present insufficient information to fully assess the impact of recreation on biodiversity and people's enjoyment of the environment in the LEAP area. Information on recreational use of the river valleys is also limited.

The Agency has a responsibility to promote water and associated land for appropriate recreational use. It also has particular responsibility for maintaining the favourable status of sites protected under the European directives. However, the Agency does not have direct involvement or control over recreational activities undertaken in the LEAP area.

Options	Advantages	Disadvantages	Financial Cost of Option	Potential Partners
Do nothing		Potential reduced informal enjoyment of the environment, damage to nature conservation and landscape of the area		
Undertake research to identify the impacts of recreation on both biodiversity and on people's enjoyment of the environment	Identify impacts of recreation on the environment, so that adverse impacts can be identified and mitigated	Time and resources	L	Harbour Masters Solent Forum Langstone Harbour Board Local authorities
Promote best practice management of recreational activities in the LEAP area.	Reduce impacts of recreation on the environment	Time and resources	L	Harbour Masters Solent Forum Langstone Harbour Board Local authorities

21. The significant amount of contaminated land in the LEAP area will have resource implications under new legislation

Local authorities are required to inspect their areas to identify contaminated land, to assess the impact of land identified as contaminated, and to transfer regulatory responsibility for 'special sites' to the Agency and to maintain a remediation register.

The implementation of the Environment Act 1995, and Section 57 of the Contaminated Land Regulations, will give the Agency the following responsibilities (from mid 1999):

- to provide advice to local authorities on the remediation of contaminated land;
- to ensure appropriate assessment of special sites; and
- to maintain a register of special sites remediation.

Options for Action	Advantages	Disadvantages	Cost	Potential Partners
No action (do nothing)	-		-	
Strategy to be prepared in conjunction with partners to define responsibilities and remediate contaminated land	Improved knowledge of risks of pollution to the environment	Time and resources (amount of contaminated land is potentially large)	H	Central Government English Partnerships, Local authorities,

22. The environmental cost of waste disposal is significant

The solid waste produced from quarrying, construction and demolition, agriculture, other industry and commerce, and households, presents a significant stress on the area's environment. Landfill capacity in Hampshire is limited and greater effort will be required to achieve sustainable waste management.

The Agency was given a key role in implementing the former Government's White Paper 'Making Waste Work', which is based on three key objectives:

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

The current Government issued 'Less Waste More Value – a consultation paper on the waste strategy for England and Wales' in 1998. This indicates that 'there is a need for a substantial increase in recycling and recovery going beyond the targets set by the previous Government. It also notes the Environment Agency's current roles in relation to waste management and seeks views on whether they are the right ones. A draft waste strategy for England is due to be issued for consultation in 1999.

Within the parameters of the Hampshire Minerals and Waste Local Plan, the potential for increasing the amount of municipal waste recycled or composted will depend on a number of factors including finding suitable sites for collection banks, instigating kerb-side recycling schemes, and increasing public participation. The Agency licences sites to ensure proper controls for the protection of the environment.

Options for Action	Advantages	Disadvantages	Financial Cost	Potential Partners
No action (do nothing)	-	Increased pressure on existing resources and need for landfill sites and/or incinerators in sensitive areas		
Promote waste minimisation through education of the public and industry	Helps to meet Agency objectives	Waste minimisation alone cannot solve the problem	L	Local authorities
Promote the 'waste hierarchy': reduce; reuse; recycle; dispose	Helps to meet requirements of sustainable development	None identified	L	Local authorities

4. A BETTER ENVIRONMENT THROUGH PARTNERSHIP

4.1 THE PARTNERSHIP APPROACH

Many of the issues addressed in this LEAP Consultation Draft relate closely to the principles of sustainable development. In other words, they are concerned with the needs and aspirations of future generations of East Hampshire residents and visitors, as well as our own. They aim to:

- address the causes of climate change, such as landfill gas emissions, and its likely effects, such as rising sea levels and the implications of this for flood defences;
- secure positive management and protection of the area's landscape character and significant nature conservation resources, whilst respecting economic concerns;
- enhance the natural environment and biodiversity where it has been degraded in the past, including rivers which have lost their natural character due to insensitive river engineering, low flows, and diminished water quality;
- encourage more efficient use of water resources;
- reduce the amount of waste generated, and encourage an integrated approach to waste management;
- increase opportunities for people to enjoy the natural environment.

The Agency alone cannot achieve these aims; we have neither the statutory powers, nor the resources and technical expertise. For this reason we will continue to work in partnership with local authorities and other agencies.

The Environmental Overview makes reference to a variety of current projects involving partnerships between the Agency and different organisations. These include involvement with:

- the Hampshire Biodiversity Partnership to advance biodiversity in Hampshire including the preparation of Biodiversity Action Plans;
- the Solent Forum (comprising Hampshire County Council, Hampshire Wildlife Trust, Associated British Ports and others) with the aim of management of the Solent;
- the Hermitage stream project and other river restoration schemes;
- the Meon Gap Study with Hampshire County Council;
- landowners and English Nature with respect to water level management plans;
- local planning authorities with regard to waste issues, including recycling;

-
- Hampshire County Council and others with respect to coastal management, the Shoreline Management Plan and oil spill contingency planning;
 - English Nature and Hampshire County Council to ensure that the requirements of the EC nature conservation directives are met;
 - Southern Water and Portsmouth Water with respect to water demand management, leakage control and low flow rivers;
 - British Marine Industry Federation, Harbour Authorities and other 'Navigate with Nature' partners with respect to marine activities.

4.2 LEAP PLAN

The final LEAP Plan will take account of the results of consultation and will be produced in the summer of 2000. It will contain a list of actions for the Agency to undertake in partnership with a range of organisations. Section 3 of this Consultation Draft LEAP already identifies potential partners.

4.3 LIAISON WITH LOCAL AUTHORITIES

Development plans

A successful partnership between the Agency and local authorities is essential in developing integrated policies and initiatives that accord with the principles of sustainable development. To this end the Agency is preparing a guidance document for use by local planning authorities in Hampshire on the Agency's policies on the following key topics: water resources; flood defence; air quality, water quality, contaminated land, waste, biodiversity, landscape and recreation. The guidance, to be published later this year, is intended to complement the role of LEAPs.

Environmental capital

Together with other Government agencies, the Environment Agency is currently piloting a new approach to evaluating environmental resources, or 'environmental capital'. The approach is described in the publication entitled 'Environmental Capital: What Matters and Why. A New Approach' (1998). It seeks to provide a consistent means of defining environmental values across different environmental domains and at different scales of planning, taking account of both professional judgement and public views. Consideration is given to trends in the loss or gain of individual environmental resources and their potential for substitution, as well as addressing their perceived importance.

Local Agenda 21 process

The Agency recognises that the Local Agenda 21 process, one of the main outcomes of the 1992 World Summit on the environment, should play a key role in defining and seeking to resolve environmental issues of concern to local people. We will therefore assist in developing the process in the area, by providing information and support as appropriate.

4.4 AREA ENVIRONMENT GROUP (AEG)

The AEG comprises representatives of a wide range of interests in Hampshire, including Council Officers and elected members, landowners, farmers, industrialists, and voluntary organisations. The Group meets on a quarterly basis at different locations in the County. Its purpose is to advise the Agency on local environmental issues and opportunities for partnerships, and to provide feedback on Environment Agency initiatives, including the LEAP. To this extent, the AEG is a form of partnership with the public. Its contribution is highly valued by the Agency.

APPENDIX 1: CONSULTATION

The following organisations were consulted during the preparation of this Consultation Draft.

East Hampshire District Council

English Nature

Fareham Borough Council

Gosport Borough Council

Hampshire and Isle of Wight Wildlife Trust

Hampshire County Council

Havant Borough Council

MAFF (Farming and Rural Conservation Agency)

Portsmouth City Council

Portsmouth Commercial Port

Portsmouth Water plc

Queen's Harbour Master, Portsmouth

RSPB

Southern Water

Winchester City Council

Data and information was supplied by Area and Regional Environment Agency staff and the National Centre for Environmental Data and Surveillance.

APPENDIX 2: 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.
Anticline	A geological ridge or fold.
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.
Biochemical Oxygen Demand (BOD)	A measure of the amount of oxygen required in water during the breakdown of organic matter.
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 5 m AOD contour.
Combined Sewer Overflow	An overflow structure which allows discharge from the sewerage system to a watercourse during wet weather conditions.
Controlled Water	Defined by the Water Resources Act 1991 Section 104. They included groundwaters, inland waters, estuaries, and coastal waters up to 3 nm offshore.
Cyprinid	Coarse fish of the carp family ie roach, dace, bream etc.
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.
Effective Rainfall	The rain remaining as runoff after all losses by evaporation, interception and infiltration have been allowed for.
Environmentally Sensitive Area	An area defined by MAFF for which grant aid is available for appropriate agricultural and water/land management.
Eutrophication	Presence of nutrients e.g. fertilizers in aquatic systems leading to excessive growth of algae and other aquatic plants.
Floodplain	This includes all land adjacent to a watercourse over which water flows or would flow, but for flood defences, in times of flood.
Flytipping	The unregulated and, hence, illegal, dumping of waste.
Greenhouse Gas	Natural and man-made gases which influence the greenhouse effect. Including carbon dioxide, methane, ozone and chlorofluorocarbons (CFCs).
Groundwater	Water that is contained in underground rocks (aquifers).
Landfill Tax	A levy per tonne or cubic metre of waste sent to landfill, used to encourage the use of recycling and waste minimisation.
Main River	All watercourses are designated as either 'Main River' (defined in maps held by the Environment Agency and MAFF) or 'ordinary watercourses' ('non-Main River'). Main Rivers include all watercourses that contribute significantly to a catchment's drainage, although ordinary watercourses may be significant locally. The Agency 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 Agency has a supervisory role.

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.
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.
Red Data Book	Book produced by the IUCN for different taxa of plants and animals, which list threatened species and categorise their status as either Extinct, Endangered, Vulnerable, Rare or Out of Danger.
River Corridor	Land that 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	Game fish of the salmon family, eg Salmon, trout and sea trout.
Sea Defences	Natural or man-made features protecting land below 5 m AOD contour.
Site of Importance for Nature Conservation (SINC)	A non-statutory county designation of a site of importance for nature conservation. Sites are selected by Hampshire County Council (HCC) according to strict criteria developed by HCC, English Nature and the Hampshire Wildlife Trust.
Sites of Special Scientific Interest	An SSSI is an area of land notified under the Wildlife and countryside act 1981 as being of special nature conservation interest. SACs, SPAs and Ramsar sites are also classified as SSSI.
Special Protection Areas	Internationally important nature conservation sites designated under the EEC Wild Birds Directive. All SPAs are also SSSIs.
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).
Swale	A shallow ditch containing vegetation that serves to intercept surface run-off from roads and remove suspended solids and other pollutants.
Syncline	A trough formed in the rock bed.
Tertiary	A geological era lasting from approximately 65 to 2 million years ago.

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.

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD
Tel: 01454 624 400 Fax: 01454 624 409

Internet World Wide Web www.environment-agency.gov.uk

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

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

SOUTHERN

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

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

SOUTH WEST

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

NORTH EAST

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

THAMES

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

NORTH WEST

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

WELSH

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



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

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111

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

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
AGENCY**