



ENVIRONMENT AGENCY

Protecting the Environment Through Effective Environment Agency Regulation and Advice



IMPORTANT NOTE AND DISCLAIMER TO ALL STAFF

This document is a summary of what can be detailed legislation and as such it has been impossible to include all legal requirements within the text. It is important therefore to seek further clarification/information if required.

*The document has been produced to give an awareness to staff of all the Agency's regulatory roles and is for internal use and guidance purposes only. It must **not** be passed to any outside person or organisation. Another version will be produced specifically for external bodies, excluding reference to our internal cross functional interests.*

Although our requirements are considered on a functional basis, it must be stressed that any particular proposal may require more than one approval from the Agency. All functional staff must, therefore, when assessing any application or giving advice, be aware of all the Agency's duties so that an integrated approach can be taken for the protection of the environment.

It must also be remembered when giving advice over the telephone, face to face or written, that the staff member is seen by our customer to represent the Agency, not a function, and hence an awareness of all our duties is essential.

Front cover:

1) Main picture – Sea Defence Embankment (Flood Defence)

Inset:

2) Inspecting dumped drums (Waste Management)
3) Sakeham Weir, West Sussex (Water Resources)
4) Initiating a fish transfer (Fisheries)

5) Booming operation (Water Quality)

SO/SussexAreaOffice/SE/3/00 (amended 3/01)

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Protecting the Environment through effective Environment Agency Regulation and Advice

Forward

The Environment Agency is one of the most powerful environmental regulators in the world. By combining the regulation of air, land and water, we have a unique opportunity to look at the environment in an integrated way, carrying out our multi-functional duties by utilising our principal statutory powers (as set out in Table 1), and by forwarding our supervisory/advisory role.

The Agency has a legal duty to protect and improve the environment throughout England and Wales, contributing towards sustainable development by meeting the needs of today without harming future generations.

We have produced this document to highlight and clarify the Agency's principal legislation and requirements for all licences and consents. For ease of reference the document has been divided into the following sections:

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| <ul style="list-style-type: none">1 – Flood Defence2 – Water Resources3 – Water Quality4 – Waste Management5 – Process Industries and Radioactive Substances (including IPPC)6 – Fisheries7 – Conservation and Recreation8 – Protection through Partnership |
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Most sections incorporate a heading "Cross Functional Interests", highlighting where other functions may be involved in any proposal and hence where liaison may be required.

Table 1	Summarises the approvals required from the Agency under various legislation and other Agency interests.
Appendix A	Identifies points to be considered/questions to be asked when assessing any proposal to ensure an integrated response.
Appendix B	Identifies land use/planning principles promoted by the Agency through development plans and in its responses to planning applications.
Appendix C	Lists types of development the Agency would wish to be consulted on.
Appendix D	Guidance Notes on techniques considered "Best Management Practice" with respect to surface water disposal and river corridor protection, plus Pollution Prevention Guidance Notes.

This document should assist in clarifying whether a consent is required together with the correct procedures to follow.

Table1

The Environment Agency's Principal Statutory Powers

Enactment	Consent/Licence required from the Agency
Environment Act 1995	Drought Permits
Water Resources Act 1991	Impoundment of any water on line of a watercourse. Abstraction of water from underground or surface waters. Discharge of effluent into underground, surface, estuarial and coastal waters. Any works in, over or under a "main river". Use of an instrument other than a rod and line to remove fish.
Land Drainage Act 1991	Culverting, obstructing, diverting or infilling any watercourse.
Land Drainage Act and Sea Defence Byelaws	Works in or adjacent to (distance on relevant Byelaw) any classified watercourse or sea defence.
Salmon and Freshwater Fisheries Act 1975	Movement or introduction of fish or fish spawn to an inland watercourse, lake etc. Rod and line fishing.
Environmental Protection Act 1990	Treating, keeping, handling or disposing of any controlled waste on land. Movement of special (hazardous) waste. Use of more than 50 tonnes of packing material in any one year. Control of any process prescribed under Schedule 1 of Statutory Instrument (SI) 1991 No. 472 Environmental Protection (Prescribed Processes and Substances) Regulations —as amended.

Continued over

Enactment (Continued)	Consent/Licence required from the Agency (Continued)
Pollution Prevention and Control Act 1999	This Act replaces the Integrated Pollution Control (IPC) regime and all IPC authorisations will gradually be replaced with permits under IPPC. New and substantially changed existing installations will require permits. The Agency liaises closely with local authorities dependant on the operation involved. (Section 5 "Process Industries & Radioactive Substances" refers).
Radioactive Substances Act 1993	Storage, use and disposal of radioactive material.
Control of Pollution (Amendment) Act 1989	Transport of waste during the course of a business.
Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 (and as amended 1997)	Silage making, slurry storage systems including yard washings and storage of fuel oil in excess of 1500 litres.
Groundwater Regulations 1999	Disposal of "listed" substances into or onto land i.e. pesticides, sheep dip, solvents, hydrocarbons, mercury, cadmium, cyanide, and less harmful substances (if in large amounts) such as some heavy metals, ammonia, phosphorous and its compounds.
<p>➤ <i>The conservation and recreation interests will be taken into account when assessing any application.</i></p> <p>➤ <i>Classified watercourses including "main rivers" are identified on Agency maps.</i></p>	

PLEASE NOTE: The above table refers only to principle statutes under which licences are given. Local navigational duties/consents have not been identified as these vary from area to area. Relevant EC Directives and Regulations which may be applicable have not been identified in this table either. Consultation with the Agency at an early stage of a proposal is therefore essential to clarify not only the consents or licences required, but also any other obligations or work practices, some of which are listed below:

The Sludge (Use in Agriculture) Regulations 1989	The Agency has agreed a protocol whereby ecologically sensitive sites are monitored to ensure compliance with the Regulations. (Section 4 "Waste Management" refers).
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<p>The Control of Major Accident Hazards Regulations 1999</p>	<p>These regulations are enforced by a joint Competent Authority comprising the Environment Agency & Health and Safety Executive. (<i>Section 5 "Process Industries & Radioactive Substances" refers</i>).</p>
<p>The Reservoirs Act 1975</p>	<p>Although reservoirs with a capacity exceeding 25,000m³ are not under the Agency's jurisdiction, our formal land drainage consent would be required for the construction of an on-line embankment. (<i>Section 1 "Flood Defence" refers</i>).</p>
<p>The Wildlife & Countryside Act 1981</p>	<p>Certain sites e.g. SSSI's are covered by this Act. When assessing any proposal in such areas the Agency seeks to ensure the protection of species, habitats and areas of local, national and international importance. Objections would be made to any application considered detrimental to its conservation and recreation interests. (<i>Section 7 "Conservation & Recreation" refers</i>).</p>
<p>The Habitats (& Species) Directive 1992 (transposed into UK law by the Habitats Regulations 1994)</p>	<p>This legislation covers Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites (in policy only). These are sites of international importance for their habitat and/or special interest. The Agency is a "Competent Authority" and therefore all plans and projects undertaken by or permitted by the Agency must take full account of the requirements of this Directive. Objections would be made to any activity that would have a significant effect on the designated conservation interest of these sites. (<i>Section 7 "Conservation & Recreation" refers</i>).</p>
<p>Water Resources Act 1991</p>	<p>Water Undertakers consult the Agency at the preliminary stage before their applications for drought orders are passed to the Secretary of State for consideration. (<i>Section 2 "Water Resources" refers</i>).</p>

<p>Best Management Practice Techniques (BMPS)</p>	<p>The Agency produces a wide range of Guidance Notes on best management practices. (<i>Appendix D refers</i>).</p>
<p>Duty of Care Regulations</p>	<p>The Agency enforces the duty of care regulations to ensure waste is recycled or disposed of in a safe and appropriate manner. (<i>Section 4 “Waste Management” refers</i>).</p>
<p>Environment Act 1995</p>	<p>The Agency has:</p> <ul style="list-style-type: none"> (a) a statutory supervisory role with respect to all land drainage matters. (<i>Section 1 “Flood Defence” refers</i>). (b) powers to issue Works Notices to prevent or remedy the effects of pollution of controlled waters. (<i>Section 3 “Water Quality” refers</i>). (c) regulates fishing methods and times. (<i>Section 6 “Fisheries” refers</i>). (d) regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest. (<i>Section 7 “Conservation & Recreation” refers</i>).
<p>Contaminated Land Regulations 2000</p>	<p>A duty is placed on local authorities to inspect land in their areas identifying sites which are contaminated within the strict criteria laid down within the Regulations. The remediation of most of these sites is overseen by the local authorities, with the exception of “special sites” which are administered by the Agency. (<i>Section 4 “Waste Management” refers</i>).</p>
<p>Polychlorinated Biphenyls (PCB) Regulations 2000</p>	<p>The Regulations require registration with the Agency of sites where these materials are being used and stored. PCB’s must be removed from equipment and replaced with non PCB dielectrics within a rigid time framework. (<i>Section 4 “Waste Management” refers</i>).</p>
<p>The Air Quality Regulations 1997</p>	<p>The Agency ensures that release limits and conditions for Part A processes (PIR) are compliant with objectives formalised in the Regulations within the designated time frame (currently between 2003 and 2005, according to the pollutant).</p>

Section 1 – Flood Defence – General Information

The threat from flooding is always with us. Flood defence seeks to reduce the risk from flooding in order to safeguard lives, sustain economic activity and protect and enhance the environment.



Flooding - Sussex

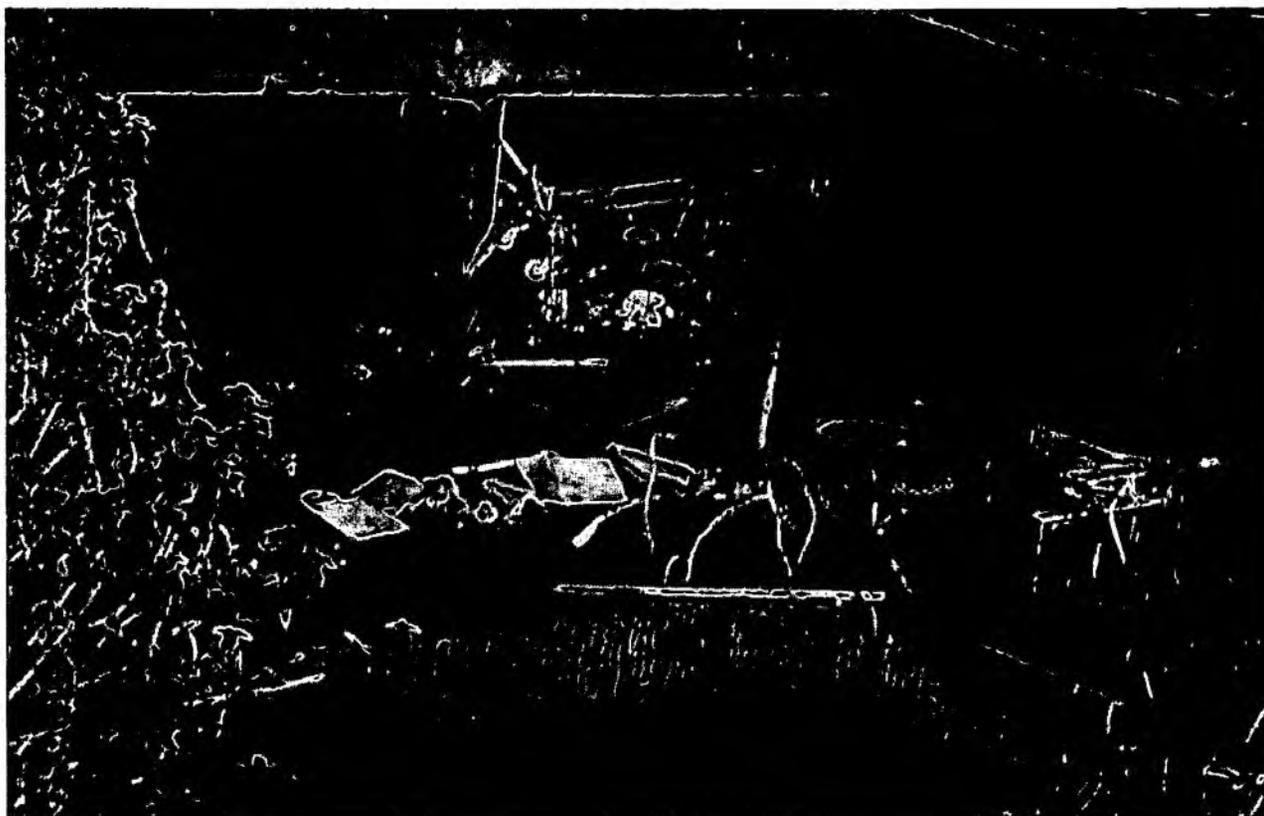
Flood risks can never be eliminated completely, however they can be reduced. The Flood Defence function operates a 24-hour service for managing flood risk. A major part of this service includes maintenance and improvement of rivers, sea defences and associated structures, thus ensuring the integrity of defences and the protection from flooding without impediment to flood flows in rivers, and the provision of a flood warning service.

The Agency also undertakes a regulatory role with respect to flood defence and land drainage. Of particular importance in this respect is its liaison with local authorities to ensure flood risk is not increased by new development or that new development is not itself at risk to flooding. Development in floodplains is resisted as well as in vulnerable areas at risk of flooding from the sea.

Flood Defence aims to protect and enhance the natural environment by promoting works that are sustainable and work with the environment.

River systems carry water from land to the sea as part of the natural water cycle. Flooding is normally caused by extreme weather conditions such as prolonged rainfall, thunderstorms or rapid snow melting when flood flows overtop the banks of river channels.

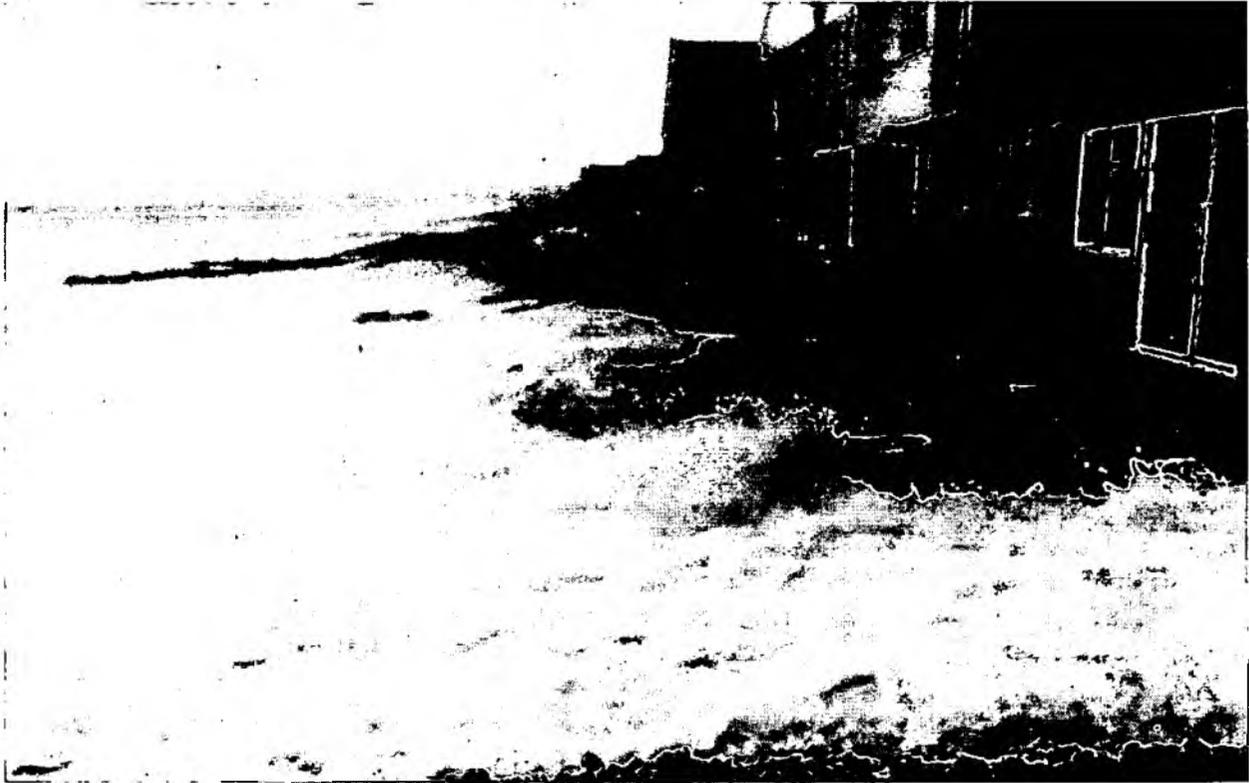
Each river will respond differently to rainfall conditions due to variations in the catchment characteristics and land use. Flows in watercourses within an urbanised catchment, with a high proportion of paved surfaces and drains, will respond relatively quickly to rainfall. Surface water cannot seep into the ground and so runs off into the watercourses. The more open countryside of a rural catchment often allows more rainfall to soak into the ground and therefore can reduce run-off. River flows and levels rise less rapidly but will remain at a high level for a longer duration. The peak flood flow is measured and expressed in terms of the frequency at which that flow is statistically likely to occur.



Debris in a watercourse

Flooding may, however, also occur where a watercourse becomes blocked by debris at a particular location, such as under bridges or in culverts. Debris gathering at these points includes garden waste and other rubbish that may have been deposited in watercourses or on their banks and is washed down in flood flows (this is a particular problem in urban areas). Lack of maintenance can also exacerbate flooding as excessive vegetation and possible siltation can impede flood flow if general debris is not removed. All maintenance works must take full account of the environmental implications for, and the conservation value of, a watercourse.

When the capacity of a watercourse channel is exceeded, flood water flows across adjacent land. This land is identified as the floodplain. The floodplain is a natural part of the river system providing extra capacity for the passage and/or storage of flood water. The effectiveness of a floodplain is reduced if it is infilled, embanked or built upon. This results in the loss of flood water storage and conveyance, leading to increased water levels and flood risk. The retention of natural floodplains is an essential part of the water cycle and sustainable water management.



Pevensey Bay - East Sussex

The risk of flooding to low lying coastal areas from the sea is a natural hazard which can be exacerbated by extreme weather conditions. In addition to normal astronomical tidal effects, low atmospheric pressure can cause sea levels to rise. Storms are also associated with such low pressure conditions, and high waves in conjunction with high tides can result in the overtopping or breaching of both natural and man-made sea defences. In low lying coastal areas this can result in extensive flooding, demolition of property and risk to life. Shingle and debris "thrown over" defences by waves can also cause extensive damage and risk to life.

In estuaries a combination of freshwater river flows and tidal surges can also cause flooding when the river levels overtop or breach the tidal embankments.

Climate change leading to sea level rise and greater impacts from storms will increase the pressures on the sea defences, effectively reducing the standard of protection provided against flooding unless improvement schemes are undertaken to build up the defences.

The Agency does not own watercourses, therefore the ultimate responsibility for the upkeep of a watercourse rests with the riparian owner (i.e. normally the person who owns property or land on the bank of a river). The Agency does have permissive powers on main rivers and sea defences to undertake maintenance and improvement works. We exercise these powers in this respect according to available resources and priorities. The Agency's consent is also required for any works on or adjacent to sea defences and all watercourses. (For further clarification please refer to page 14 of this document).

To ensure effective defence against flooding the Agency must ensure access is retained along riverbanks and sea defences for staff and equipment. Consent would not be granted for any development that would compromise such flood defence activities. In deciding whether to issue a consent, the Agency will also take into account the impact of the proposed works on the conservation of the natural environment and seek environmental compensation and enhancement for any loss.

In assessing impact of new development the Agency also gives careful consideration to the implications of possible increased surface water run-off to watercourses, generated by additional impermeable areas. This is to ensure flooding is not created or exacerbated. Where problems are identified, the Agency would recommend, through the Local Authority Planning Process, that surface water run-off is stored on or off site during heavy rainfall conditions in "balancing" or flood attenuation ponds. This reduces flood risk by limiting the rate of surface water run-off to a watercourse to that prior to development. However, it must be stressed that such storage ponds will only work effectively if adequately maintained. The Agency would be concerned at the proliferation of storage ponds, each designed to reduce the peak flow from individual developments.



Flooding – Chichester, West Sussex

Opportunities also exist for creative design to manage surface water run off appropriate to urban, suburban and rural environments which will enhance the conservation and recreational value of such features. The Agency, for example, promotes the use of wet ponds for surface water attenuation and also encourages source control techniques, where appropriate e.g. permeable surfaces and water reuse. Basic information sheets referring to such initiatives and river corridors can be found within Appendix D at the end of this document.

The Agency operates a significant number of sea gates, tidal flaps, river weirs, river sluices, flood banks, pumps and other equipment. These regulate river flow and reduce the risk of tidal and coastal flooding. At times of heavy rainfall, the Agency's operational priorities are to check and operate water level control structures and to clear debris and obstructions where possible.

Since September 1996 the Environment Agency has taken the lead role in relaying flood warnings to people at risk of flooding from rivers or the sea. During this time the Agency has developed systems which have enabled it to target and significantly increase the number of people across the Country who can be contacted if flooding may affect their property. In issuing flood warnings a coded system exists, which indicates how severe a flood event is likely to be. It is the responsibility of each individual to take appropriate steps to protect themselves and their property.

The Agency has specific officers involved in flood forecasting and warning and responding to flood events. These officers make the decision to issue flood warnings, usually by direct telephone and fax to the public and media using the Agency's Automatic Voice Messaging (AVM) Service, and work closely with the emergency services.

Flood Wardens have also been appointed from the general public in flood risk areas and these play an increasingly important role in flood warning. Wardens receive warnings by telephone from the Agency and then either phone or actually knock on their neighbours' doors to let them know a flood warning has been issued.

Floodline (0845 988 1188) provides a single national number for the public to ring on any matter associated with flooding from watercourses, rivers and the sea throughout England and Wales. This service offers the public the opportunity to listen to recorded information on the latest flooding situation; report flooding direct to Agency Staff (in emergency situations only); request fact sheets (6 available) and/or speak to a trained Agency Floodline operator for general information and advice.

Indicative Floodplain Maps are also available on the Internet and can be accessed via the Agency's website (www.environment-agency.gov.uk) using either the village/town or postcode of the area in question.

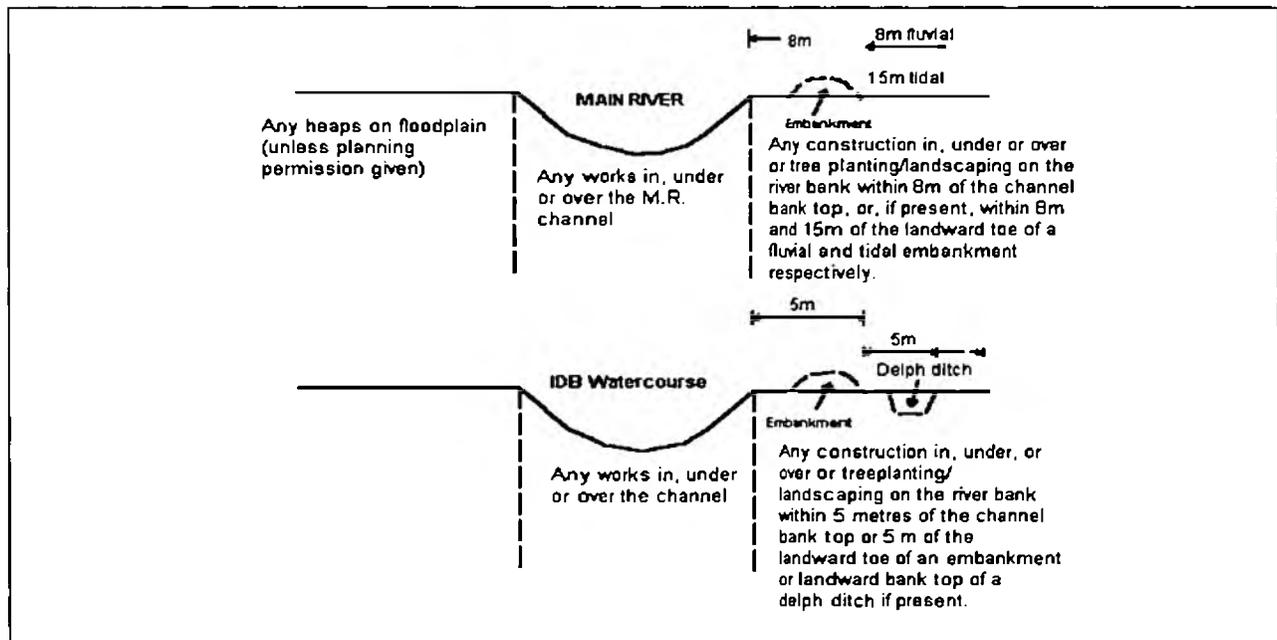
Flood Defence - Regulations

The Development Control and Authorisations Section of Customer Services undertakes the regulatory/supervisory role of Flood Defence. Consents are given under various legislation namely:

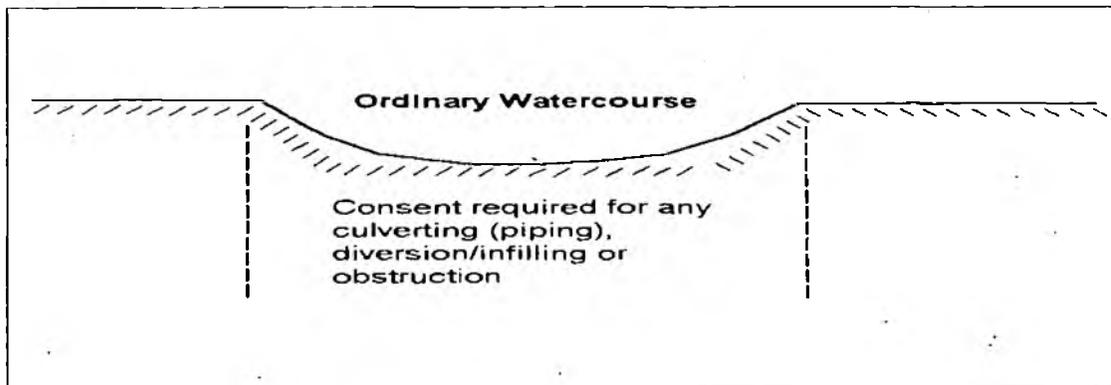
- **Water Resources Act 1991** for works in, under or over a “main river” (these are rivers identified on maps held by the Agency and MAFF and are primary drainage channels in a catchment).
- **Land Drainage and Sea Defence Byelaws** for works adjacent to a “main river” or on or adjacent to a sea defence.
- **Internal Drainage Board (IDB) Byelaws** for works in or adjacent to an IDB watercourse. (The Agency is the IDB in Sussex and parts of Kent).
- **Land Drainage Act 1991** for any obstruction, piping or diversion of an ordinary watercourse (not “main river” or IDB watercourse).
- **The Environment Act 1995** (*Under this Act The Agency acts in a statutory supervisory role only advising Planning Authorities on implications of new development upon flooding*).

****The following sketches summarise where consents are required. It is important to note that Byelaw widths differ between Regions, and hence it is essential to check requirements with the relevant Agency office.**

Application for consent on or near Main River/IDB:



Application for consent on or near an Ordinary Watercourse:



In assessing any application for works on or adjacent to a main river or IDB watercourse the Agency ensures that proposals:

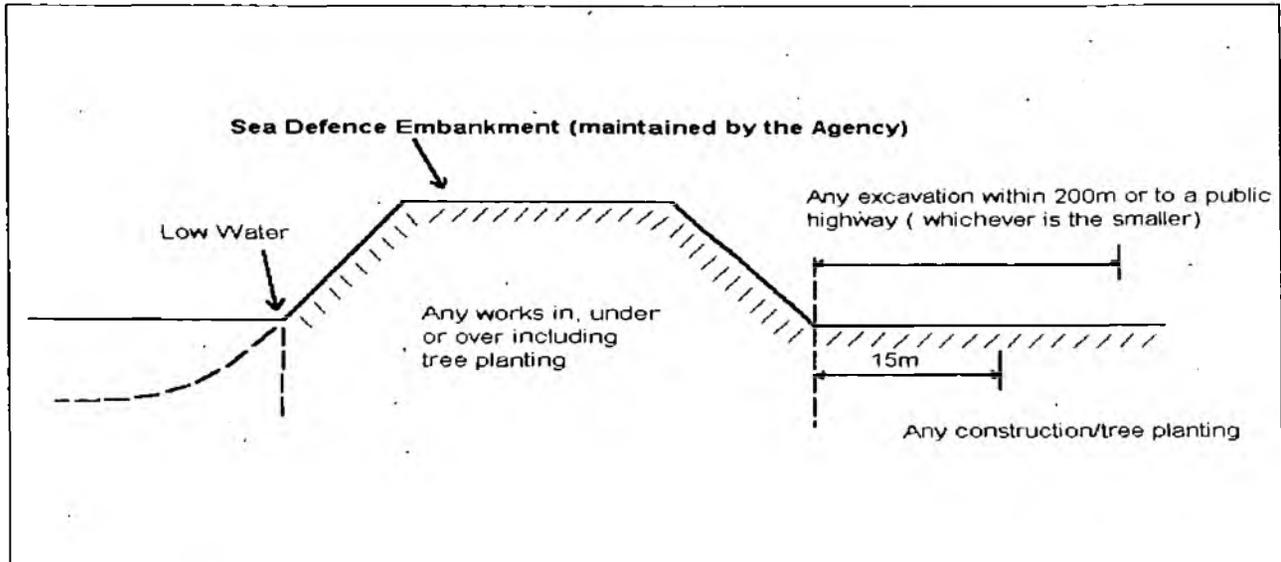
- **Do not impede flood flows whether in the channel or in the floodplain, thus exacerbating or creating flooding to others.**
- **Do not result in increased turbulence and hence erosion of the watercourse channel.**
- **Do not jeopardise the integrity of any flood embankment.**
- **Do not impede access along the river required by the Agency to undertake maintenance/improvement works.**
- **Are not detrimental to the conservation of the natural environment (enhancements will always be sought).**

In assessing any application the Agency ensures that proposals:

- **Do not impede flood flows thus exacerbating or creating flooding to others.**
- **Do not result in increased turbulence and hence erosion of the watercourse channel.**
- **Are not detrimental to the conservation of the natural environment/enhancements will always be sought).**

Consent of the Agency would also be required for any improvement works proposed by a Council on an ordinary watercourse (they have no powers to do works on main rivers or IDB watercourses).

Application for consent on or near a Sea Defence:



In assessing an application for works on or close to a sea defence the Agency ensures that proposals:

- **Do not jeopardise the integrity of the sea defence.**
- **Do not impede access required to undertake maintenance/improvement works.**
- **Are not detrimental to the conservation of the natural environment (enhancement will always be sought).**

Construction of Dams/Embankments:

The Agency's formal consent would be required under the Water Resources Act 1991 or Land Drainage Act 1991, for the construction of any embankment on line of a watercourse. Factors to be considered would include the hydraulic capacity of the embankment to safely pass designed flood flows, the protection of people and property upstream and from flooding downstream and the enhancement of the aquatic environment.

Consent would not be forthcoming for any raised embankments on-line of a watercourse which would reduce capacity of the watercourse and its floodplain. Additionally, any proposals resulting in the deposition of excavated or imported spoil for any embankment off line of a watercourse but within a floodplain would be resisted.

It should also be noted that the Reservoirs Act 1975 classifies any reservoir with a capacity in excess of 25,000m³ above the natural level of any part of the land adjoining a reservoir as a "large raised reservoir" requiring special consideration and design by a panel engineer. The reservoir is registered with the Local Authority and/or County Council who have the duty of maintaining an open register (available for public inspection) of large raised reservoirs

situated wholly or partly within their area. The said local authority becomes the enforcing authority responsible for all relevant duties as set out within the Act.

Development Issues:

- ***No development or land raising should take place within river flood plains as not only would new properties be at risk to flooding but this could also exacerbate flooding elsewhere. (The Agency would generally object to any planning application for such proposals).***
- ***The creation of impermeable areas must not result in increased flows in any watercourse thus exacerbating flooding downstream. Surface water storage facilities, usually in the form of ponds and exceptionally underground tanks, may be required to limit the rate of surface water run off from a developed site to a watercourse.***
- ***Development should not take place within areas which are extremely vulnerable to flooding in the event of a breach of a sea defence. Development along the undeveloped coast in areas at risk to flooding from the sea is also resisted. A number of factors are taken into account in making risk assessments including standard of sea defence, location of development relative to the defence, potential depth of flooding, possible wave action and speed of flood flow. (Note: In this role consideration is given to all sea defences not only those maintained by the Agency).***
- ***Sustainable Urban Drainage Systems (SUDS) are encouraged where appropriate and should be effectively implemented within all new developments. Some examples of SUDS include porous pavements, infiltration trenches and basins, filter drains, grass swales, detention and retention ponds. The concept of SUDS needs to be incorporated into developers' plans at the earliest stage possible. Policies and proposals contained within Local Authority Development Plans shape land use change and provide an opportunity to prevent future drainage problems arising as a result of development. The Government has also indicated its commitment to SUDS in the draft PPG25 – Development and Flood Risk.***

Under the Environment Act 1995 the Agency also has a statutory supervisory role with respect to all land drainage matters (not just "main rivers"). In this role it advises the Planning Authority of the implications of new development upon flooding.

Cross Functional Interests

In assessing any proposal or land drainage application or in giving advice consideration should be given to:

- **Whether the site is within an area of environmental or archaeological designation (Fisheries, Ecology & Recreation).**
- **Requirement for a discharge consent (Environment Planning).**
- **Requirement for pollution control equipment such as oil interceptors, bunding etc. (Environment Planning).**

Continued over

Cross Functional Interests (cont'd)

- **Implications on water quality downstream due to disturbance of a new channel or reduced flows (Environment Planning).**
- **Whether an impoundment/abstraction licence may be required for an on-line lake (Water Resources).**
- **Whether a licence is required for the transportation and deposition of spoil to construct an embankment (Environment Planning/Protection).**
- **Whether planning permission is required for the construction of a lake (Customer Services).**
- **Whether English Nature should be consulted in respect of a lake within an SSSI (Fisheries, Ecology and Recreation).**
- **Impact due to silt being washed into a watercourse or disturbance of silt on a watercourse bed (Environment Planning/Fisheries, Ecology & Recreation).**
- **Disposal of excavated material or an importation of material to the site may need a Waste Management Licence (Environment Protection).**
- **Need for fish passes and movement or introduction of fish (Fisheries, Ecology & Recreation).**
- **Whether works are on or close to a landfill site or contaminated land (Environment Planning).**
- **Protection of the natural river corridor and opportunities for environmental enhancement (Fisheries, Ecology & Recreation).**
- **The retention of a buffer strip between an agricultural activity and a watercourse (Fisheries, Ecology and Recreation).**
- **Whether works occur within or may impact upon a European designated site (e.g. SAC or SPA) and hence whether English Nature should be consulted and an appropriate assessment should be undertaken (Fisheries, Ecology & Recreation).**
- **Whether the works occur within or may impact upon Conservation designated sites (e.g. RAMSAR, AONB etc.) and the interests for which they are designated (Fisheries, Ecology & Recreation).**
- **Impact upon gravel spawning beds and fish habitat due either to direct disturbance or the upstream release of sediment (Fisheries, Ecology & Recreation).**
- **Protection of riparian and aquatic Habitats Directive annex species (e.g. water vole etc.) from impact by works (Fisheries, Ecology & Recreation).**
- **Would proposal result in the loss or detriment to a habitat of conservation value or any recreational value (Fisheries, Ecology & Recreation).**

Section 2 – Water Resources – General Information

The Agency's responsibility lies with ensuring that existing management and future development of our water resources is carried out in an environmentally sustainable manner through balancing the needs of abstractors with those of the environment. This can be best achieved by the Water Resources function overseeing the management, conservation, distribution and augmentation of surface and groundwater resources.

In October 1996 the Government set out its framework of policy and strategy guidance for public water supply management in England and Wales, and the three main elements to this Guidance involved (a) the availability of water resources and security of supply, (b) demand management and (c) future needs for new water resources.



Flood current – meter gauging

The reliable yields of each water resource system need to be re-estimated and balanced against the maximum economic use of demand management, taking into account climate change and advances in hydrometric monitoring. Through demand management we seek to control or influence the consumption and waste of water. These can include leakage control, metering, use of water efficient devices and equipment.

Options for bulk transfers of water or redistribution of abstraction licences should be considered before new resource development. Water Companies are encouraged to co-operate with each other and the regulators in this respect, and to draw up plans for timely development of new water resources where demand cannot be managed within the existing capability.

Sustainable water management relies on the retention of sufficient water within natural environmental systems i.e. river basins, to protect the needs of all users. These will include abstractions for domestic, agricultural and industrial use; amenity, aesthetic and recreation values; and protection of habitats and water-dependent flora and fauna. Water can be stored and transported over considerable distances and hence is managed as a regional source.

With few exceptions all abstractions of water from groundwaters and surface waters require a licence from the Agency, including abstractions for use of water supply by the water companies. The water companies are responsible for the infrastructure required to transfer water from its abstraction source to premises.

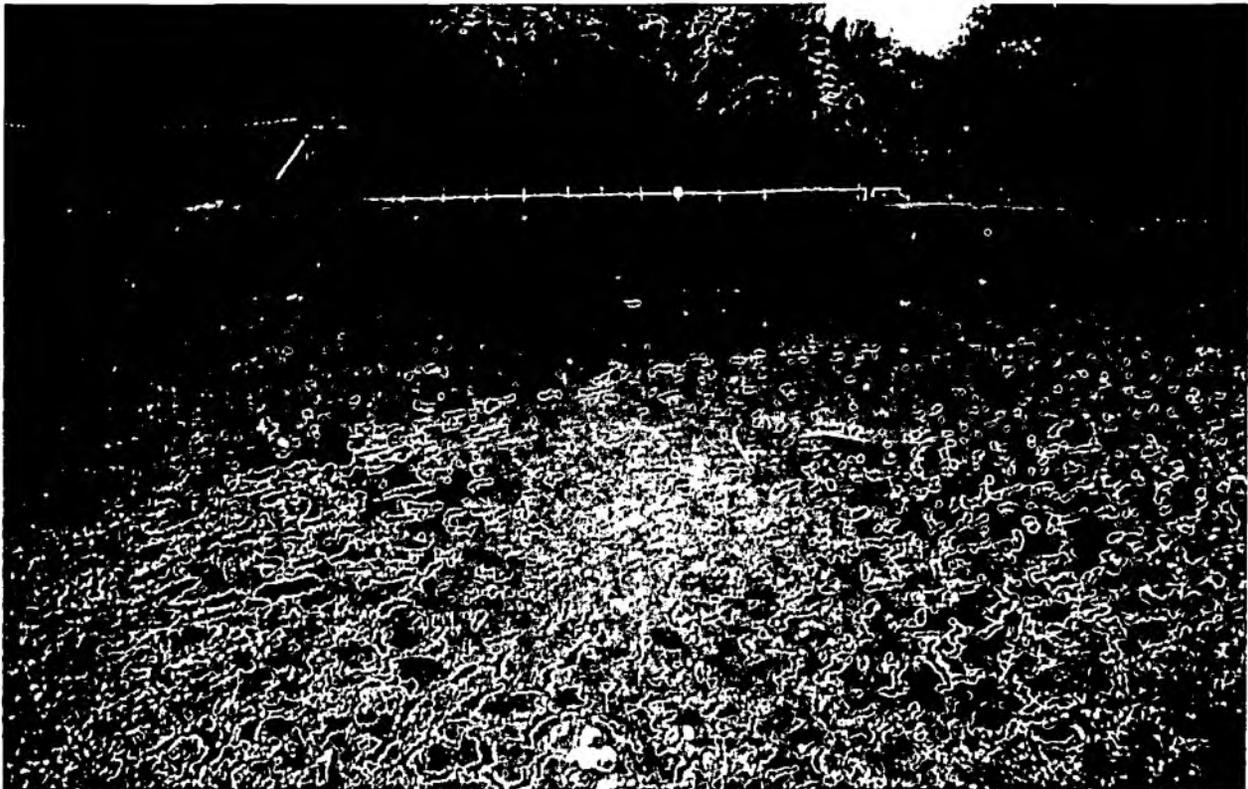


Gauging Station

Exemptions from the requirement for a licence include water supplies to a single household and small (less than 20 cubic metres a day) general agricultural uses from surface water sources (although spray irrigation always requires a licence).

Water for domestic, industrial or agricultural purposes is abstracted privately, or by statutory water undertakers, either directly from surface waters, or from groundwater through wells and boreholes. Water is at risk from misuse and is particularly vulnerable to the pressures of inappropriate development.

The Agency recognises the need to reconcile the potentially competing requirements of the environment, the abstractors, the public and others who utilise or value the benefits of the aquatic environment. It is further recognised that over-abstraction in the last 20-30 years may have resulted in examples of habitat degradation and depletion of flows or levels to rivers, wetlands and groundwaters and harm to fisheries.



Swanbourne Lake, West Sussex

Groundwater is found in significant quantities in certain types of rock which hold and release water, known as aquifers. Aquifers are defined according to their significance as sources of water in the Agency's "Policy and Practice for the Protection of Groundwater (1998)" and on the Agency's Groundwater Vulnerability Maps. Major aquifers are defined as highly permeable strata capable of storing large volumes of water. Minor aquifers are less permeable and less significant for the storage of water, but can also be important sources of water.

The prevention of groundwater contamination is a major objective if water supplies and the environment are to be protected. Groundwater resources are susceptible to a wide range of threats arising from land use, the consequences of which may take many years to manifest themselves. This needs to be recognised within farming practices and in local authority development plans. Changes in land use have the potential to affect the availability of

groundwater resources by restricting recharge or obstructing or diverting flows. Another potential impact on groundwater includes the physical disturbance of aquifers. Development involving excavation below the water table can result in de-watering proposals which can impact upon the quantities available. Once groundwater has become contaminated it can remain so for many years, being difficult if not impossible to remediate.

The Agency has a "presumption against" granting licences for increasing consumptive groundwater abstraction from the chalk aquifer. The policy is to preserve existing water resources, and to safeguard spring flows out of the chalk and hence protect the environment.

The Agency began the process of updating its National and Regional Water Resources Strategies with the publication of its consultation document "Sustainable Water Resources for the Future" in October 1999. The strategy documents are to be published by March 2001.

Water Resources - Regulations

Two types of authorisations are given by the Water Resources function:

- **Abstraction Licence**
- **Impoundment Licence**

These licences have to be applied for under the Water Resources Act 1991.

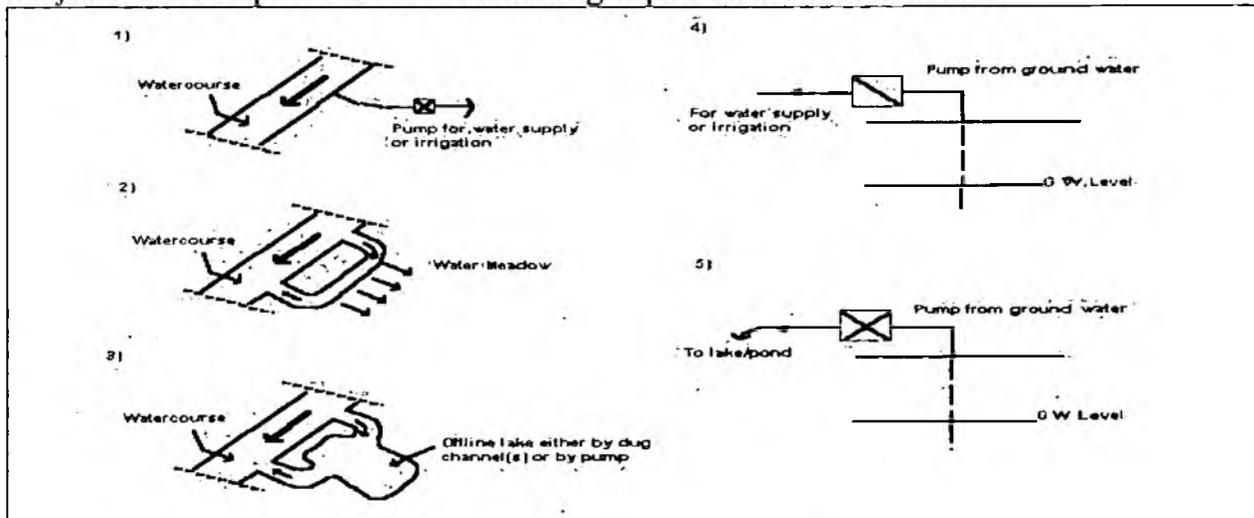
Abstraction Licence:

Most situations where water is abstracted from watercourses or the ground require a licence from the Agency.

The main exceptions are:

- **Up to 20m³/day from a surface watercourse for domestic use of a household or for an agricultural purpose.**
- **Up to 20m³/day from groundwater source for domestic use of a household.**
- **Fire-fighting, de-watering of engineering works (quarries, mines, foundations etc), one-off uses of small quantities.**
- **Water used for purpose designed as land drainage which includes trickle irrigation.**
- **Water derived from land drainage/navigation transfers/test pumping (with consent).**

Subject to the exceptions above the following require an abstraction licence:



Note: A lake, if constructed on line of a watercourse, would not need an abstraction licence. It may however require an impoundment licence.

The Licence application procedure requires advertisement in the local press and in the London Gazette and in considering applications the Agency must give priority to public supplies, take account of effects on other licensed users and those having Water Rights (i.e. so called Protected Rights) not requiring a licence, and consider the impact upon the ecology of the natural water environment.

Licences when granted specify the source from which the water may be taken, the amounts to be taken annually/daily and (sometimes) hourly, the land on and purpose(s) for which the water may be used, the periods of the year when the water may be abstracted and the method of abstraction.

Impoundment Licence:

An impoundment is a weir or dam built across a watercourse channel which raises water levels upstream. A Licence for such a structure is required where the normal water level upstream is raised above the natural bank level of the watercourse. No Licence is therefore required where a watercourse is deepened or widened. A Licence is also normally required where a lake or pond is constructed off-line of a watercourse, such that water levels are raised above natural ground levels.

In assessing an application for an impoundment licence consideration is given to how flows upstream and downstream of the impoundment may be affected during and after construction. The following factors are considered:

- **Loss of water due to evaporation from the lake surface and increased seepage into the ground.**
- **Impediment to the flow during construction and any subsequent filling/refilling of the lake.**
- **Effect on flood flow and safety of proposed structure.**
- **The preservation of natural flow regimes to ensure there is no detriment to those who may abstract water downstream or to the natural water environment.**

The Reservoirs Act 1975 classifies any reservoir with a capacity in excess of 25,000m³ above the natural level of any part of the land adjoining a reservoir as a "large raised reservoir" requiring special consideration and design by a panel engineer. An impoundment licence would not be required in this instance. However, land drainage consent would still be required. (Please refer to Section 1 Flood Defence, page 16, heading "Construction of Dams/Embankments" for details).

Drought Orders/Permits:

Drought Orders are issued under Sections 73-81 of the Water Resources Act 1991. Applications are normally made to the Secretary of State by the water undertaker after preliminary consultation with the Environment Agency.

The duration of these Orders can be for a period up to 6 months, extendable to 12 months. They provide for water resource reallocation to meet emergency environmental or water supply deficiencies.

Drought Permits have a similar purpose but may involve licence variation only and are issued by the Agency directly to water undertakers under Schedule 22 of the Environment Act 1995.

Cross Functional Interests

In assessing any proposal or licence application or in giving advice consideration should be given to:

- **Land drainage implications including impact upon flood flows and flood plains and possible need for land drainage consent (Customer Services).**
- **Implications for water quality downstream due to possible reduced flows (Environment Planning).**
- **Need for fish passes in any impoundment and the movement or introduction of fish (Fisheries, Ecology and Conservation).**
- **Whether site could affect a site of archaeological importance (Fisheries, Ecology and Recreation).**
- **Impact upon the ecology of the watercourse, stillwater or river corridor and recreation interests (Fisheries, Ecology and Recreation).**
- **Disposal of excavated material from or importation of material to the site and need for waste management licence (Environment Protection).**
- **Whether works are on or close to a landfill site or contaminated land (Environment Planning).**
- **Impact due to silt being washed into a watercourse or the disturbance of silt on a watercourse bed (Environment Planning/Fisheries, Ecology and Conservation).**
- **The construction of an on-line embankment (Customer Services/Fisheries, Ecology & Recreation).**

Continued over

- **Impact upon gravel spawning beds and suitability of fish habitat by possible reduced river flows (Fisheries, Ecology & Recreation).**
- **Whether the abstraction occurs within or may impact upon an SSSI or European designated site (e.g SAC or SPA) and hence whether English Nature should be consulted and an appropriate assessment should be undertaken (Fisheries, Ecology & Recreation).**
- **Whether the abstraction occurs within or may impact upon Conservation designated sites (e.g. RAMSAR, AONB etc.) and the interests for which they are designated (Fisheries, Ecology & Recreation).**
- **Whether an online abstraction inlet requires screening to protect migratory salmonids (Fisheries, Ecology & Recreation).**
- **Protection of riparian and aquatic Habitats Directive annex species (e.g. water vole etc.) from impact by the abstraction (Fisheries, Ecology & Recreation).**
- **Whether the abstraction might impact upon a fishery (riverine or stillwater) within the cone of depression surrounding the abstraction (Fisheries, Ecology & Recreation).**
- **Would proposal result in the loss or detriment to a habitat of conservation value or any recreational value (Fisheries, Ecology & Recreation).**

It should be noted that the abstraction licensing process and legislation is currently under review and may therefore be subject to change. It is expected that all new licences will be issued on a time limited basis in future.

Section 3 – Water Quality – General Information

The Agency monitors the quality of controlled waters which include rivers, streams, ditches, lakes, groundwaters, estuaries and coastal waters. This monitoring is achieved by a range of chemical, biological and microbiological techniques and sampling programmes.

The Agency has proposed non-statutory river quality objectives (RQOs) to establish targets for chemical water quality. The River Ecosystem (RE) Classification Scheme has been used to set these targets. Although non-statutory, the RE standards are use-related and reinforced by statutory EU derived environmental standards. The RQOs are based upon a range of water quality standards that protect the uses to which the waters may be put.

The RE Classification Scheme comprises five quality classes which reflects the chemical water quality requirement of different types of river ecosystem.

The Agency carries out chemical monitoring in order to monitor and enforce discharge consents which are usually based on chemical parameters.

If a river or stream is polluted, even for a short period of time, some or all of the macroinvertebrate animals may die. The recovery of these communities may take several months and consequently biological monitoring provides pollution information that may have been missed by solely employing chemical monitoring. Leakage and accidental spillage of oils and other polluting liquids can cause intermittent pollution of both surface and ground waters.



Booming across estuary mouth

To ensure the protection of the environment, it is important that development does not proceed ahead of the ability of sewerage systems and the receiving sewage treatment works to deal with increased flows, and the final discharge must not have an adverse effect on the environment. Private sewage treatment facilities, if not properly maintained, can cause pollution to the water environment. The proliferation of small package treatment plants and septic tanks will be discouraged and, where appropriate, first time rural sewerage encouraged. The Agency would arbitrate in the event of an appeal against a refusal to provide first time sewerage by a water services company e.g. Southern Water Services.

The failure to install adequate oil interceptor facilities or trapped gullies, as appropriate, on surface water systems serving industrial, highway, residential or commercial schemes can result in the pollution of receiving waters, as pollutants from impermeable surfaces and drainage gullies are discharged into watercourses. Such problems can also be further reduced by the provision of best management practice techniques including detention ponds, grass swales and porous surfaces (for further clarification please refer to Appendix D of this document). The bunding of oil and chemical tanks should also be undertaken to ensure the maximum protection against pollution due to any leakage from tanks. The Agency will promote the use of bunding through the development planning process, public relations and education.

The prevention of groundwater contamination is a major objective if water supplies and the environment are to be protected and this needs to be recognised within development plans. Changes in land use have the potential to affect the availability of groundwater resources by restricting recharge or obstructing or diverting flows. Other potential impacts on groundwater include disposal of sludge and slurries onto land, diffuse pollution and the physical disturbance of aquifers. Once groundwater has become contaminated it can remain so for many years, being difficult if not impossible to remediate.

A number of EU Directives contain standards which have implications for water quality and some of these are outlined below:

***The EU Bathing Water Directive** seeks to protect public health and the amenity value of popular bathing waters by reducing pollution. The Directive lays down mandatory values for certain parameters which must be attained, as well as guideline values which Member States must endeavour to observe. The key standards for achieving compliance are bacterial. Currently water samples are taken on a weekly basis from May to mid-September.*



The EU Freshwater Fish Directive ensures that water quality in designated stretches of water is suitable for supporting certain types of fish and contains two sets of quality standards. One set protects cyprinid or coarse fish populations, i.e. roach and chub, and the second set of more strict standards protects salmonid populations.

The EU Shellfish Waters Directive ensures that discharges to these areas are regulated to protect the shellfish waters.

The EU Nitrates Directive protects waters against pollution caused by nitrates from agricultural sources. The Agency is responsible for advising on the selection of potential Nitrate Vulnerable Zones (NVZs) and defining their boundaries. The designation of NVZs and agricultural measures to be adopted is the responsibility of Government. The first review of NVZs is currently underway.

The EC Surface Water Abstraction Directive sets limits on the quality of water that may be abstracted for drinking water supplies. However, there is a separate Directive that sets different standards on the quality of water to be put into the public water supply, which is a matter for the statutory water undertaker and not the Environment Agency.

The EU Dangerous Substances Directive protects the water environment by controlling discharges to rivers, estuaries and coastal waters.

The EU Urban Waste Water Treatment Directive specifies treatment standards for sewage treatment and sewage collection systems. The level of treatment is dependent upon the type and sensitivity of the receiving water and discharge size. Under this Directive the banning of sewage sludge dumping at sea came into effect from the end of 1998. A requirement was also included to limit the impact of storm overflow operation from sewerage systems.

The EU Groundwater Directive controls the release of certain substances to groundwater. There are no statutory standards for the quality of groundwater, and because of the difficulties in obtaining and interpreting information the Agency only has limited data on the impacts of human activity on groundwater quality. In drought conditions, however, much river flow can be derived from groundwater and so potential problems may be identified through the routine river monitoring programme.



Flap valve

Water Quality – Regulations

The discharge of effluent to controlled waters and sometimes onto/into land has to be carefully controlled to ensure the protection of the environment from pollution.

Existing legislation allows the Agency to control the discharge of effluent by the issuing of (a) Consents, (b) Conditional Prohibition Notices and (c) Groundwater Regulation Authorisations. The latter being introduced only in April 1999.

All discharges of sewage or trade effluent into controlled waters (or to the sea outside controlled waters if the discharge originates on land and is conveyed by pipe), require the consent of the Agency. Controlled waters are inland fresh waters (including rivers, streams, ditches and lakes/ponds with outlets), groundwaters and tidal waters up to 3 miles from the coast).

Discharge of matter other than sewage or trade effluent discharging via a sewer or drain into controlled waters can be controlled by the issuing of a Conditional Prohibition Notice.

Discharges of sewage or trade effluent into/onto land can at the discretion of the Agency be controlled by either Conditional Prohibition Notice or full Consent. The latter is only used when the discharge consists of trade effluent, or sewage effluent with a volume greater than 5 cubic metres per day or the discharge is being made in a groundwater sensitive area.

The disposal onto land of such wastes as spent sheep dip liquor and pesticide spraying equipment washings are now controlled by the issuing of Groundwater Regulation Authorisations.

Examples of discharge/effluents controlled by consent are:

- **Treated sewage effluents to controlled waters – both “water company” and private sewage treatment works/plants.**
- **Sewerage system overflows to controlled waters i.e. storm and emergency overflows.**
- **Trade effluent discharges to controlled waters e.g. dewatering of quarry workings, cooling waters, fish farm effluent, site drainage from industrial/commercial loading/parking areas, emptying of commercial swimming pools etc.**
- **Trade effluent into/onto land.**
- **Sewage effluent with volumes greater than 5 cubic metres per day into/onto land.**
- **Sewage effluent with volumes less than 5 cubic metres per day into/onto land in a groundwater sensitive area.**

Examples of discharges/effluents controlled by Conditional Prohibition Notices are:

- **Discharge of matter other than sewage or trade effluent via a sewer or drain into controlled waters : emptying of private swimming pools.**
- **Discharge of sewage effluent with volumes less than 5 cubic metres per day into/onto land not in a groundwater sensitive area.**
- **Discharge of sewage or trade effluent into lakes/ponds with no outlet (i.e. not controlled waters).**
- **Discharges from highway drains (these rarely need control).**

Examples of disposals to land controlled by Groundwater Regulation Authorisations are:

- **Spent sheep dip onto land**
- **Pesticide spraying equipment washings onto land.**

The standard of effluent to be discharged to groundwater or surface waters, including the volume and quality conditions, would be set by the Agency. In determining these consideration would be given to:

- **Flow and quality of water in the receiving watercourse.**
- **Location relative to groundwater aquifers.**
- **Use of the receiving watercourse including abstractions downstream, conservation and recreation interests.**
- **Natural dispersion areas for discharges to the sea.**
- **Location of discharge relative to water supply sources.**
- **Frequency, volume and type of effluent discharge.**

Refusal of an application would be made where the risks associated with the discharge are not acceptable e.g. where a water supply source is at risk downstream on the receiving watercourse or where discharge could pollute groundwater aquifers utilised for water abstraction. The Environment Agency Groundwater Policy identifies works and development proposals which are not acceptable in areas identified as sensitive groundwater protection zones. With respect to possible impact of development our powers are limited and hence we rely on the planning system to impose necessary requirements to protect water quality.

The Agency is also responsible for enforcing the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 (and as amended 1997). These regulations provide a new and positive approach to tackling pollution from agriculture. The Agency has powers to control silage making, slurry storage systems and most agricultural fuel oil stores if over 1500 litres of oil is stored at a farm. Powers apply principally to installations which have been constructed, substantially reconstructed or substantially enlarged after March 1991. The Agency can however, require existing installations to be improved to an acceptable standard if considered to provide a significant risk of pollution of controlled waters.

The Environment Act 1995 introduced new powers to the Environment Agency to serve Works Notices. Works Notices are issued by the Agency in order to remedy or prevent pollution of controlled waters and are normally served where voluntary action is not achieved and/or in the clean up phase of a pollution incident. Failure to comply with a Works Notice will normally result in prosecution and the Agency may carry out the necessary works and recover its costs. Works Notices help shift the emphasis of the Agency's work from prosecution to prevention when dealing with pollution of controlled waters.

Overall, the Agency's enforcement procedures are complex and not all can be addressed within this document. The relevant functional team must be contacted if further clarification is required.

Cross Functional Interests

In assessing any proposal for a discharge consent, or in giving advice consideration must be given to:

- **The capacity of a watercourse to accept additional flow (Customer Services).**
- **The integrity of the watercourse channel of any flood defence and the need for a land drainage consent (Customer Services).**
- **Surface water abstractions downstream (Water Resources).**
- **Whether a waste management licence is required (Environment Protection).**
- **Impact on the ecology of a watercourse and recreation (Fisheries, Ecology and Recreation).**
- **Whether site is within an area of environmental or archaeological designation (Fisheries, Ecology and Recreation).**
- **Whether process is subject to IPC/IPPC regulations (PIR).**
- **Location of site relative to a landfill site or contaminated land (Environment Planning).**
- **Consideration must be given to protecting groundwater abstractions (Water Resources) and the ecology of the land (Fisheries, Ecology and Recreation).**
- **Impact on fisheries (Fisheries, Ecology and Recreation).**

Continued over

- **Whether the discharge occurs within or may impact upon a European designated site (e.g. SAC or SPA) and hence whether English Nature should be consulted and an appropriate assessment should be undertaken (Fisheries, Ecology & Recreation).**
- **Whether the discharge occurs within or may impact upon Conservation designated sites (e.g. RAMSAR, AONB etc.) and the interests for which they are designated (Fisheries, Ecology & Recreation).**
- **Protection of riparian and aquatic Habitats Directive species (e.g. water vole etc.) from impact by the discharge (Fisheries, Ecology & Recreation).**
- **Would proposal result in the loss or detriment to a habitat of conservation value or any recreational value (Fisheries, Ecology & Recreation).**

Section 4 – Waste Management – General Information

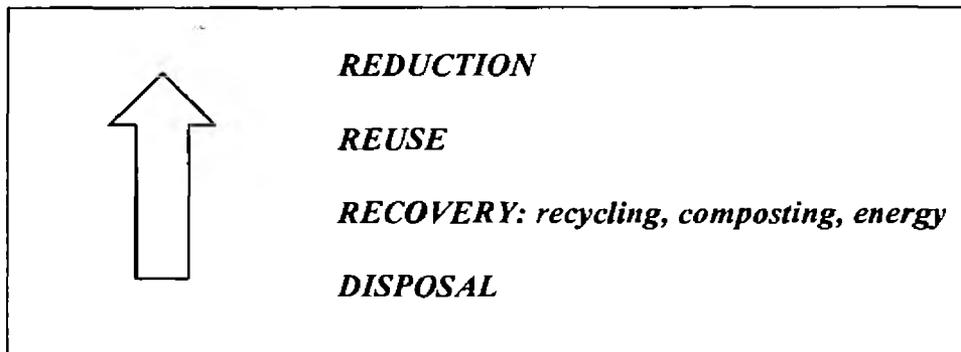
Waste Management includes the reuse, recovery, treatment and disposal of wastes. Waste management facilities include Materials Recycling Facilities (MRFs), metal recyclers, civic amenity sites, treatment plants, transfer stations, landfill sites and energy from waste plants. The development and location of any such facilities is determined through the land use planning system under the Town and Country Planning Act 1990, administered by Local Planning Authorities for which the Agency is a statutory consultee. The Agency does, however, administer the waste management licensing system, which is usually a requirement of any waste facility.

The Government's policies for waste management are underpinned by a legislative framework. This framework puts responsibility on nearly all parties involved in production and ultimate management of waste.

Waste Strategy 2000 is a document that sets out the Government's policy framework for sustainable waste management in England and Wales. It outlines the UK's approach to delivering the spirit and commitments of the 1992 Rio Summit in relation to waste. The Strategy is based on three key objectives:

- *To reduce the amount of waste that society produces*
- *To make best use of the waste produced*
- *To minimise risks of harm to human health and environmental pollution*

The Strategy identifies a Waste Hierarchy for assessing waste management options. The overall policy and aims of the Strategy are to increase the proportion of waste managed by the options towards the top of the waste hierarchy:



The principles of Best Practicable Environmental Option (BPEO) and Life Cycle Analysis (LCA) should be used for assessing waste management options. There is currently some debate about the validity of the hierarchy, and the Agency is undertaking research in this respect using the principle of Life Cycle Analysis. This considers all the environmental implications of pursuing a particular waste management option such as transport to a facility and the natural resources used in the construction of a facility.

The Strategy details specific and general targets and incentives, many of which relate to the year 2005. The primary objectives are to reduce the proportion of waste going to landfills and to increase recovery of waste. There will be some occasions, however, where disposal is the only option or the most sustainable option.



Landfill Site - Sussex

The Producer Responsibility Regulations on Packaging Waste identify companies with an annual turnover of £2 million and above, or those that deal with greater than 50 tonnes of packaging per year, to have an obligation to reduce or recycle a certain percentage of their waste packaging.

Effective regulation needs to be balanced with education and promotion of the waste hierarchy in order to achieve more sustainable practices and the targets in the Government's Waste Strategy. The Agency believes that strong enforcement is the foundation of sustainability, and that effective regulation means using the resources available to achieve the best results and to take action which is appropriate and proportional to the risks involved and the benefits to be obtained.

The Agency enforces good practice and encourages better practice and believes this can be achieved by establishing nationally consistent waste regulation practice and providing high quality technical advice based on sound science. Educating business, industry and the public is carried out through leaflets and guidance, visits to companies, seminars and involvement with business clubs.

The Agency collects and analyses information on the types and quantities of waste in order to advise local authorities so they can plan strategically for the best treatment and disposal options. In November 2000 the Agency produced 9 Strategic Waste Management Assessments, one for each Region of England and one for Wales. These documents involved close co-operation and working between the Agency, local authorities, industry and business. Local planning authorities can use this information in the preparation of statutory Waste Local Plans, which make appropriate provision for waste management in their areas. Such Waste Local Plans consider the requirements for, and the availability of, waste management facilities in each County. The Government published the revised Planning Policy Guidance on Waste Disposal and Management (PPG10) in October 1999, which provides important guidance to LPAs and the Agency.



Clinical waste check

Construction and demolition wastes include brickwork, masonry, pipework, timber, rubble and other materials associated with construction and demolition. Quantities of these wastes are greatly increased by the inclusion of soils and subsoils which are often generated as a result of preparatory works prior to development.

The inclusion of such large quantities of soil within this group of wastes often results in demolition waste being defined as inert, but construction waste is rarely inert, often containing wood and plasterboard. In addition, soils excavated during the preparation and development of a site range from clean soils, for example, from a greenfield site to heavily contaminated soils from the development of contaminated land, such as old gasworks sites. Construction and demolition wastes have the potential for recycling.

Where materials other than totally inert wastes are deposited, landfill gas and leachate are a concern. Unless contained and treated, leachate has the potential to pollute groundwater and surface waters. Adequate provision for the containment, management, monitoring and treatment of leachate will be required to protect the quality of the water environment. The production of landfill gas can result in a number of environmental problems, but it can also be collected and promoted for energy recovery. To minimise the environmental impact of landfill gas, adequate pollution control measures should be incorporated into any scheme. The Agency will monitor the migration of landfill gas and any leachate generated and there are certain requirements to be met on surrender of a licence.

Whilst all wastes can become hazardous if not handled and managed correctly, some wastes are recognised as requiring particular precautions and therefore have to be handled in accordance with certain procedures. Such wastes are termed "Special Wastes" and include flammable and toxic substances. The largest categories of Special Waste arisings are in descending order: waste oils (from hydraulics, engines, interceptors, bilge and sludges), paints and varnishes with adhesive and printing inks, batteries and gas bottles, asbestos, organic chemical processes, inorganic chemical processes, health care and municipal wastes with industrial and institutional waste.

Waste management facilities require a waste management licence and the facility must be operated by a fit and proper person in accordance with an operating plan to meet licence conditions. It is an offence to keep, treat or deposit waste without a waste management licence. Anyone carrying waste (including the movement of special waste) needs a licence from the Agency.

However, illegal activities are not uncommon and take the form of fly tipping waste, operating a site without a licence or not complying with licence conditions. Whilst the Agency carries out regular inspections of licensed facilities, it also relies heavily on members of the public to report illegal activities or incidents. The Agency has prosecuted and will always consider prosecution where illegal practices have been undertaken.



Illegal fly tipping

Legislation enacted last year now enforces the storage and removal of polychlorinated biphenyls (PCB's) and related substances from electrical equipment. These materials were once widely used as electrical insulating material because of their resistance to decomposition. Unfortunately this very property resulted in build up of these substances in the environment where they have been implicated in ecological damage. The new law requires registration with the Agency of sites where these materials are being used and then removal and replacement of PCB's within a rigid time framework.

Land contamination may be present in many sites as a result of certain activities such as waste disposal or industrial use (e.g. gas works, petrol stations, metal recyclers etc). Such sites may present a risk of harm to the environment as a result of their former uses. In consequence, they may now fall within the provisions of the Contaminated Land Regulations and associated legislation. This places a duty on local authorities to inspect land in their area and identify sites which are contaminated according to the strict criteria laid down. This requires that before a site may be designated as contaminated there must also be a pathway and a sensitive receptor for any contamination source. An example might be a gassing landfill site (source) with houses nearby (receptor) and permeable strata (pathway) through which gas could move. If all three elements are not present then the site cannot be designated as contaminated. The remediation of most of these sites will be overseen by the local authorities, the exception being so called "special sites" which the Agency will administer. Special sites might include MOD occupied land and any contaminated land that would put relevant surface or groundwaters at significant risk.

The Agency aims to reduce the amount of waste produced from industry and commerce per unit of output produced, which in turn increases energy efficiency and reduces polluting emissions.

Waste Management - Regulations

The definition of waste itself has not been straightforward. It was established however, that if a producer no longer had use for a material, then it was considered to be waste, even if it was of some intrinsic value. Such a definition resulted in many activities being defined in Section 75 of the Environmental Protection Act 1990. (Please refer to previous pages 33 to 37 for facilities covered).

Legislation to protect the environment from the harmful effects of the irresponsible disposal of waste has only been in place for just over 25 years. Such legislation is very complicated with many exemptions to licence requirements. It is important to note however that even if an exemption exists the Agency must be notified so that it can be registered. The notes below are therefore for raising awareness of where a licence may be required. Liaison with relevant Agency staff would be essential to identify whether a licence is required in any particular instance.

The primary controls on waste management activities are the regulations within the Environmental Protection Act 1990. The following activities may need a licence from, authorisation for, prior notification to, or registration with, the Agency.

- **Treating, keeping, handling and disposing of any controlled waste on land.**
- **Transport of any controlled waste requires registration except for house holders waste.**
- **Movement and disposal of special (hazardous) waste from one premises to another.**
- **Processes which use more than 50 tonnes of packing material in any one year. (This figure will be reduced within the next year, bringing more businesses within the Packaging Regulations catchment).**
- **Any arrangement for the disposal of waste on behalf of another person.**
- **Operating certain prescribed processes involving waste such as manufacture of fuel pellets from rubbish.**
- **Discharge of certain hazardous substances, such as pesticide waste on to land.**

The Agency enforces the Duty of Care Regulations to ensure that recycling or disposal of waste is carried out by an authorised carrier, in a safe and appropriate manner, and will take action if the correct procedures are not followed.

Duty of Care applies to anyone producing/importing/keeping/storing/transporting/treating or disposing of wastes (including Brokers). It can be household, commercial or industrial waste and does not have to be hazardous or toxic to be a controlled waste. Duty of Care does not apply if waste is transported by a person from their own home, but it will apply if the waste is being taken from a workplace or another household.

Animal waste collected and transported under the Animal By-Products Order 1992 is not subject to the Duty of Care. The law indicates that all reasonable steps must be taken to fulfil the duty. The Government has issued further guidance on what is classified as "reasonable" in different cases and is entitled "*The Duty of Care, a Code of Practice*" (ISBN 0-11-753210-X published by TSO in March 1996) and is available from HMSO bookshops.

The spreading of sewage sludge and industrial wastes on land is a well established method of recycling nutrients to land and is controlled via the Sludge (Use in Agriculture) Regulations 1989. These Regulations place obligations on occupiers of land and sludge producers to monitor the addition of sludge to land to ensure that heavy metals do not accumulate in soils, crops are not adversely affected by the application and that records are kept of the applications.

Farmers have recognised the benefits of applying animal manure, which contains organic matter and essential minerals to agricultural land for centuries, provided they do not contain contaminants. Some controlled wastes in liquid or sludge form have similar beneficial effects. The advantage of land spreading to the waste disposal contractor is principally one of cost, since land application is cheaper than disposal at a landfill site. The advantage to the landowner is one of obtaining a cheap source of fertilising material. Conversely, the main disadvantages are that spreading is seasonal to some extent and industries reliant on this disposal route must have contingency plans devised, as there will be occasions when weather conditions are totally unsuitable to allow land spreading activities. The pollution threat is also a concern and water pollution incidents from this activity are increasing in contrast to other agricultural incidents. In nitrate vulnerable zones there would be restrictions on the extent of any disposal of sludge etc. to land.

A Regional protocol for Environment Agency regulation of these activities has recently been agreed whereby ecologically sensitive sites are monitored to ensure compliance with the Regulations. The Agency is also involved in auditing the adequacy of records kept under these Regulations.

Cross Functional Interests

In assessing any proposal or giving advice consideration should be given to the following:

- **Whether site is within a flood plain (Customer Services);**
- **Impact upon the integrity of any watercourse or flood defence (Customer Services).**
- **Is site close to or involve the piping, diversion or infilling of a watercourse (Customer Services).**
- **Does proposal result in any discharge to a watercourse or into or onto the ground (Environment Planning).**

Cross Functional Interests (cont'd)

- **Whether site is located within a sensitive groundwater protection zone (Environment Planning).**
- **Would proposal result in the loss of or detriment to a habitat of conservation value or of any recreational value (Fisheries, Ecology and Recreation).**
- **Whether site is located within an area of environmental or archaeological designation (Fisheries, Ecology and Recreation).**
- **Is waste from IPC site or a nuclear source (PIR).**
- **Impact due to silt being washed into a watercourse or the disturbance of silt on a watercourse bed (Environment Planning/Fisheries, Ecology and Recreation).**
- **Implication on abstractions of water downstream (Environment Planning/Water Resources).**

Section 5 – Process Industries & Radioactive Substances – General Information

The Agency's role relative to Process Industries Regulation (PIR) is to protect and enhance the environment as a whole, by preventing or minimising pollution from the most technically complex and potentially most polluting industrial processes in England and Wales. Where harm to the environment has occurred or is continuing to occur, the Agency will take enforcement action requiring measures to prevent, or minimise and render harmless, releases from the process it regulates to the environment. Where appropriate, remedial action may also be required.

In carrying out its duties the Agency applies the principles of Best Practicable Environmental Option (BPEO) and Best Available Techniques Not Entailing Excessive Cost (BATNEEC). The principles of BATNEEC and BPEO ensure that the needs of industrial processes are appropriately balanced with the costs and benefits of environmental protection.

Process Industries have the potential to make serious impacts on water, land and air quality. Effective regulation of the process industries is therefore a key instrument in delivering the Government's policies, plans and obligations.



Power Station

The PIR Function seeks to protect the environment and contribute to the goal of sustainable development through the legal responsibilities and duties it owns and delivers on behalf of the Agency.

In respect of the Radioactive Substances Regulation, the Agency seeks to secure continuous improvement in the protection of the public and the environment from the harmful effects of radioactive substances.

To achieve this the Agency works with:

- *Users of radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are safely and appropriately disposed of.*
- *The Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites.*
- *The Health and Safety Executive on worker protection issues at non-nuclear sites.*

Process Industries & Radioactive Substances - Regulations

This Section considers the regulatory role of the Agency with respect to:

- **Major Industrial Processes (Integrated Pollution Control (IPC), Integrated Pollution Prevention and Control (IPPC) and Radioactive Substances Regulation (RSR).**

Process Industries Regulation (PIR) :

Industries with the greatest potential to pollute the environment are subject to the system of Integrated Pollution Control (IPC), for which the Agency is responsible, under Part 1 of the Environmental Protection Act 1990 and regulations made under it.

Two lists of processes have been prescribed by regulations for control:

- *Part A processes are controlled for all releases to the environment under IPC by the Agency;*
- *Part B processes are controlled at a local level with regard to their discharges to the atmosphere only under a system of Local Authority Air Pollution Control (LAAPC).*

It is an offence to operate a Part A process without authorisation issued by the Agency. The range of processes authorised includes fuel and power, the metals industry, the minerals industry, the chemicals industry, and the waste industries.

The careful control of IPC processes is essential in order to minimise the pressures on the environment arising from the quantities of materials used, manufactured, and stored at industrial sites. The Agency also exercises a leading role in the control of emissions of sulphur dioxide and oxides of nitrogen to the atmosphere for the purposes of the EC Directive on Large Combustion Plants (88/609/EEC). It is also responsible for delivering the national plan for the reduction in releases of these substances.

When regulating Part A processes, the Agency must have regard for the objectives for ambient air quality laid down in the UK Air Quality Strategy. Release limits and conditions should be set which seek to achieve compliance with these objectives which are formalised in the Air Quality Regulations 1997 (SI1997 No.3043), within the designated time frame (currently between 2003 and 2005, according to the pollutant).

Integrated Pollution Prevention and Control (IPPC):

It should be noted that the IPC regime will gradually be replaced by phased implementation of the Pollution Prevention and Control Act 1999.

The IPPC Directive is designed to prevent, reduce and eliminate pollution at source through the prudent use of natural resources. It is intended to help industrial operators move towards greater environmental sustainability.

Like IPC, IPPC covers emissions to air, land and water but also includes:

- Noise and vibration, energy efficiency, environmental accidents and site protection.
- Other types of processes, looking more widely at the pollution impact of a plant or activity, starting with the best environmental way of doing the job.
- “Installations” and not just a process or an activity.

The Directive covers installations where one or more of the following categories of activities (subject to certain capacity thresholds) are carried out:

- Energy industries e.g. power stations, oil and gas refineries.
- Production and processing of metals – ferrous and non-ferrous.
- Mineral industry e.g. cement works, glass works.
- Chemical industry – organic, inorganic, pharmaceuticals.
- Waste Management – e.g. landfill sites, incinerators.
- Other activities – i.e. paper & pulp, tanneries, slaughter houses, food/milk processing, animal carcass disposal, intensive pig/poultry units, organic solvents users.

This will provide a common framework for those industries that are currently regulated under a number of different regimes, (IPC Authorisations, Waste Management Licences, Discharge Consents or Statutory Nuisance). This also introduces some new industry sectors to environmental permits e.g. food/milk processing and pigs/poultry.

Operators will need to show that their installations are run in a way that prevents emissions to the air, land and water, or, where that is not practicable, reduces them to a minimum.

In doing this, operators must apply the following general principles:

- Best Available Techniques to prevent pollution.
- Minimise waste and recycle it where possible.
- Conserve energy.
- Prevent accidents and limit environmental consequences.
- Return the site to a satisfactory state after operations cease.

The overall objective of IPPC is a high level of protection for the environment as a whole. To achieve this, IPPC will use a system of permits which will specify:

- Plant operating conditions.
- Emission limits for certain substances to air, land and water.
- Annual reporting of pollutant releases.

If necessary, permits will include measures both for the management of waste generated by the installation and for the protection of soil and groundwater. Where appropriate, permits will also have conditions to minimise the impact of a polluting activity beyond our national boundaries.

Emission limits and operating conditions will be based on Best Available Techniques (BAT) taking into account the technical characteristics of the installations, its geographical location and local environmental conditions. Measures beyond BAT may also be required to achieve environmental quality standards.

IPPC permits will be required for all new and substantially changed existing installations. IPC authorisations will gradually be replaced with permits under IPPC in the period up to October 2007.

Radioactive Substances Regulation (RSR):

The Environment Agency is the regulator in England and Wales under the Radioactive Substances Act 1993 (RSA93). This Act is concerned with the keeping, use and disposal of radioactive substances and in particular, the regulation of radioactive waste. This duty involves assessing, authorising, inspecting and enforcing under the relevant legislation.

Radioactive substances are present in the environment as a result of natural processes and man's technological developments. The Agency's objective is to regulate the use of radioactive substances in order to protect people and the environment. The Agency's role is to combine an understanding of the hazards and their consequences with a detailed knowledge of how they can be eliminated or controlled and managed and to apply this expertise to each situation which it regulates.

The RSA93 requires persons whose activities involve radioactive substances to apply for permission through:

- *A certificate of authorisation for the accumulation and disposal of radioactive waste, e.g. from hospitals, research organisations, and/or,*
- *A certificate of registration for keeping and using radioactive materials e.g. industrial process flow measurement equipment, density gauges.*

The Agency assesses proposals to keep and use radioactive substances and to accumulate and dispose of radioactive waste. If, having assessed the proposals, the Agency is satisfied that the applicant will comply with the requirements of RSA93, it may issue the appropriate permission. These permissions incorporate limits on the types and quantities of radioactive materials and conditions to protect people and the environment. The Agency also carries out assessments of the potential combined effects where several radioactive disposals may occur in the same vicinity.

Nuclear licensed sites, such as power stations and fuel processing plants also require permissions, although different arrangements apply, due to the licensing of these sites by HM Nuclear Installations Inspectorate (HMNI).

In England and Wales the disposal of radioactive wastes from licensed nuclear sites, which include nuclear power stations and sites where fuel fabrication or reprocessing takes place, is regulated by the Agency. The Agency works closely with Her Majesty's Nuclear Installations Inspectorate (HMNI) which is primarily responsible for safety issues, to ensure that the regulatory activities at these sites are consistent, co-ordinated and comprehensive. The Agency reviews the RSA93 authorisations for all Nuclear Licensed Sites from time to time. Where such reviews suggest that it would be appropriate to revise limits or conditions, draft revised Certificates of Authorisation, supported by explanatory memoranda, are made widely available as part of extensive consultations with the public. Comments received from this consultation are taken into account in finalising the Certificates of Authorisation.

In many cases extensive information is needed to justify proposals to generate and release given quantities of waste by particular routes. In such cases which will include almost all developments at Nuclear Licensed Sites, comprehensive details of equipment, control techniques and management arrangements will need to be given.

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The Agency's PIR/RSR involvement includes being an active member of local Air Quality Steering Groups.

The Control of Major Accident Hazards Regulations 1999 (issued as Statutory Instrument 1999 No.743) and known as the COMAH Regulations came into force on 1st April 1999. COMAH is being enforced by a joint Competent Authority comprising the Environment Agency and Health & Safety Executive (HSE). The HSE leads on all health and safety matters and the Agency on environmental issues.

Cross Functional Interests

In assessing any proposal or giving guidance consideration should be given to the following:

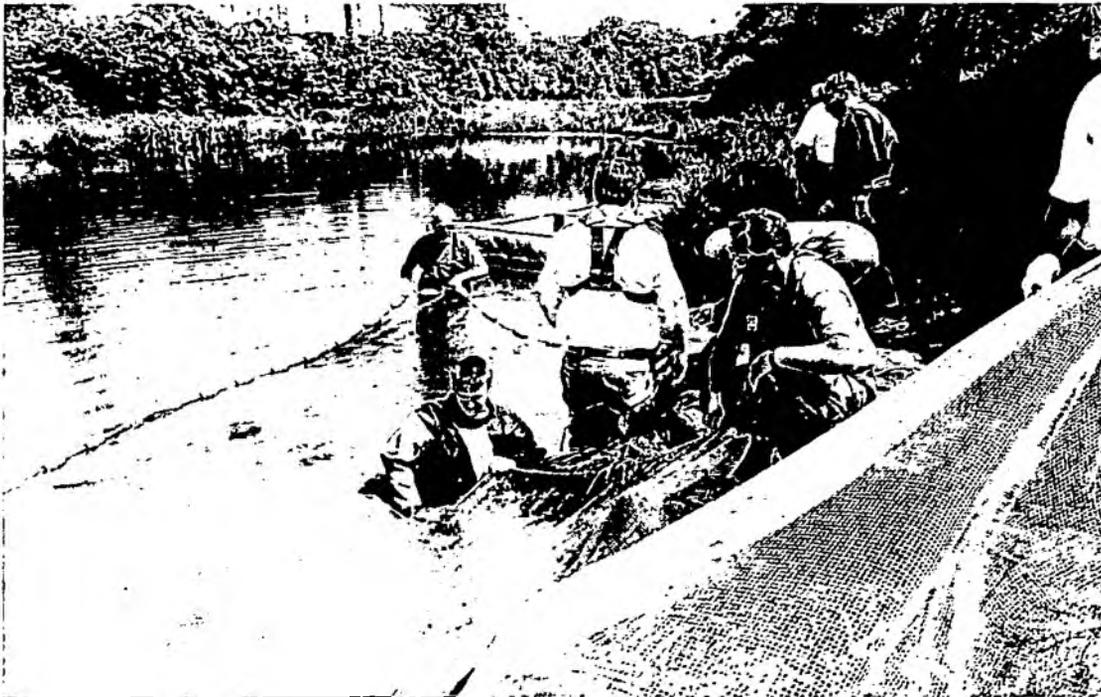
- **Close liaison with Environment Planning and Environment Protection will be necessary where interests may overlap e.g. movement and disposal of waste, discharges to watercourses.**
- **Regard should be given to implications on conservation/recreation (e.g. impact on protected/designated sites - Habitats Directive). (Fisheries, Ecology and Recreation).**
- **Whether any water is abstracted downstream (Water Resources).**
- **Whether site is located within a sensitive groundwater protection zone (Groundwater Regulations) (Environment Planning).**

Section 6 – Fisheries – General Information

The Agency's Fisheries Function's principal aim is to maintain, improve and develop the fisheries resources of England and Wales. Fish populations are affected by both the quality and quantity of water and by the physical suitability of the aquatic ecosystem. The presence of a thriving fish community is therefore one of the best possible indicators of a satisfactory water environment. Where ever possible we seek to enhance the fisheries resource by maintaining and, where possible, improving:

- *River bed and bank side diversity.*
- *Appropriate habitat diversity.*
- *Adequate flow and depth.*
- *Adequate water quality.*
- *The free passage of fish within river systems.*
- *The sustainability of native fish populations.*

The Agency monitors the performance of fisheries and inland waters, estuaries, and where appropriate, coastal waters. This monitoring assesses the status of fish stocks, their habitat, fishing effort and catches so as to identify challenges to the sustainability of a given stock, informing both our own and our customers management decisions.



A seine net survey

The Agency also communicates and consults with these customers by both formal and informal means to better understand their needs. These needs will be summarised within the Fisheries Action Plans that are being planned for development by customer focus groups for each catchment.

We aim to conserve and develop sustainable fisheries for native stocks of salmon, trout, freshwater fish, eels and where appropriate, sea fish. We achieve this by regulating fisheries through the enforcement of a consistent system of licences, orders, byelaws and consents.

We produce clear strategies for the long-term management of each of the main freshwater fisheries (i.e. salmon, trout, coarse fish and eels), securing a fair and robust funding base for fisheries work. Wherever possible, we demonstrate the benefits of our actions, matching our service proportionally to those who contribute to it.

We undertake to ensure full cost recovery from the polluter and those who damage our environment or whose activities directly cause fisheries work to be undertaken.



Monitoring fish stock

We require fish passes to be incorporated into the design of any river obstruction to allow the free passage of migrating salmon and sea trout. This requirement extends not only to known lengths of watercourses used by migratory fish, but also to those which have the potential to be used by them following the removal or easement of downstream obstructions. We also require fish screens to be installed on all abstraction inlets and discharge outlets to watercourses inhabited by migratory salmon and sea trout.

The Agency is developing its scientific and technical understanding of the complexity of factors that impact upon individual fisheries. In this way we are defining the best practices to provide healthy and sustainable fisheries, and are promoting a habitat centred approach to fisheries management. Our customers are informed of these practices through specific advice and the wide range of guidance booklets we produce. We also develop partnerships with those who share our vision of all waters of England and Wales being capable of sustaining healthy and thriving fish populations so that everyone will have the opportunity to experience a diverse range of good quality fishing.

We approach our fisheries duties, responsibilities and promoting our visions by integrating them fully with the protection and management of the wider environment, contributing sound knowledge to the assessment of the state of our environment, fisheries and the impact of pressures acting on them.

The Agency has a statutory duty to protect, improve and develop fish stocks by undertaking the following:

- *Monitoring fish abundance and distribution.*
- *Rescuing fish during drought or pollution.*
- *Stocking to reinstate fisheries.*
- *Regulating fish introductions to help prevent the spread of fish disease.*
- *Protecting native bio-diversity by contributing to the regulation of introductions of non-native fish species.*
- *Advising on best fisheries management and environmental practices.*
- *Influencing international regulation of marine fisheries for migrating species such as salmon, sea trout and eel.*

The Agency regulates fishing to promote sustainable fisheries by:

- *Monitoring fishing activity.*
- *Combating illegal fishing through appropriate enforcement.*
- *Regulating legal fisheries through licensing.*
- *Making and enforcing byelaws/orders.*

The Agency protects and enhances the environment for fish by:

- ***Monitoring water quality, flows, physical habitat and aquatic fauna and flora.***
- ***Controlling the impact of pollution and seeking full mitigation.***
- ***Considering fisheries needs when licensing water abstraction and consenting discharges and land drainage developments.***
- ***Enabling free migration of fish.***
- ***Improving the quantity and quality of physical habitat for fish, including spawning and nursery areas.***

In order to improve the environment for fishermen the Agency aims to:

- ***Monitor, advise on, and seek to enhance fishing opportunities.***
- ***Advise on and collaborate with others on sustainable fisheries development.***
- ***Demonstrate and promote good practice for the conservation of native wild life and biodiversity.***

Fisheries - Regulations

The Agency regulates fishing for Salmon, Trout, Freshwater Fish and Eels through a system of licensing. This includes limiting the number of licences to fish for migratory salmonids other than by angling and making byelaws under the Environment Act 1995 to regulate fishing methods and times.

The Agency regulates and monitors the management of inland fisheries through a system of consents. Agency consent needs to be obtained to move and introduce fish/spawn into inland waters under Section 30 of the Salmon and Freshwater Fisheries Act 1975. Similarly, Agency consent is required to use otherwise illegal fishing techniques to capture fish (e.g. electric fishing).

The Agency enforces its powers by:

- **Requiring fishermen and anglers to produce appropriate fishing licences when challenged.**
- **Requiring appropriate screens to prevent the passage of migratory fish into abstraction/discharge inlet/outlets.**
- **Requiring consents to introduce fish/spawn into inland waters and to use otherwise illegal instruments for the purpose of catching fish.**
- **Helping to ensure the unobstructed migration of Salmon and Sea Trout between the sea and their spawning grounds.**
- **Requiring the construction of fish passes on weirs and other dams.**
- **Authorising fish passes.**
- **Operating a zero tolerance policy when prosecuting fisheries offences.**

Cross Functional Interests

In considering a proposal the following should be considered:

- **Whether works occur within or may impact upon a European designated site (e.g. SAC or SPA) and hence whether English Nature should be consulted and an appropriate assessment should be undertaken (Fisheries, Ecology & Recreation).**
- **Whether the works occur within or may impact upon Conservation designated sites (e.g. RAMSAR, AONB etc.) and the interests for which they are designated (Fisheries, Ecology & Recreation).**
- **Protection of riparian and aquatic Habitats Directive annex species (e.g. water vole etc.) from impact by works (Fisheries, Ecology & Recreation).**
- **Would proposal result in the loss or detriment to a habitat of conservation value or any recreational value (Fisheries, Ecology & Recreation).**
- **Does the proposal incorporate a new lake which may require an impoundment licence or abstraction licence (Water Resources).**

Continued over

- **If works are on line or close to a watercourse a land drainage consent may be required (Customer Services).**
- **Whether works are within a floodplain (Customer Services).**
- **Proposals to create better fish habitats may have implications on flooding and erosion of channels e.g. new weirs or obstructions to create eddying and still waters (Customer Services).**
- **Proposals to enhance habitat may restrict access along a river (Customer Services).**
- **Fish farms may have implications on water quality (Environment Planning).**
- **Disposal of excavated material from or importation of material to the site to form a lake may require a waste licence (Environment Protection).**
- **The impact on the ecology of the watercourse or still water (Fisheries, Ecology and Recreation).**
- **Location of site relative to landfill sites or contaminated lands (Environment Planning).**

Section 7 – Conservation & Recreation – General Information

In fulfilling its functions the Agency is required to contribute to the conservation of natural resources, landscape and the built heritage. The Agency must also take account of recreation and access and part of its duty is to protect and promote the recreation use of the water environment.

In order to satisfy the requirements of both the Local and National Biodiversity Action Plans (BAPs), the Agency continues its proactive approach to the conservation of specific habitats and species. The Agency uses River Corridor and River Habitat Surveys to identify areas of protection and potential colonisation.

Wetland sites are often rich in archaeological artifacts due to the anaerobic conditions preserving organic material.

Key Habitats to be protected or enhanced include:

- *Floodplain grassland.*
- *Wet, marshy and boggy areas (good for amphibians and uncommon wetland plants).*
- *Areas of long tussocky grass along river banks or adjacent to wetland areas (good for small mammals which provide food for birds of prey).*
- *Reedbeds.*
- *Broad-leaved woodland – likely to be ancient woodland (good for plants, birds, bats etc.).*
- *Wet woodland (good for invertebrates, bats, birds).*
- *Woodland streams particularly where trees overhang water (good for fish and amphibians, uncommon lower plants and cover for animals).*
- *Areas with environmental or archaeological designation (or those proposed or a candidate for) e.g. SAC, SPA, SSSI, SNCI, SAM, Ramsar, LNR, NNR etc.*
- *Estuarine ecosystems including saltmarsh and mudflats.*

Key species (and their habitats) to be protected if present include:

- *Amphibians (particularly newts).*
- *Otters, badgers, water voles, bats.*
- *Wading birds, wildfowl, owls and other birds of prey.*
- *Dragonflies, damselflies, aquatic spiders, water molluscs and beetles.*
- *All native marginal, aquatic and bankside flora.*

The presence of alien species can impact upon the ecology of a particular area, decreasing its inherent value, and also creating further problems for flood defence, fisheries, navigation and recreation. The Agency seeks to formulate holistic action programmes for the control of these species, which can only be achieved through a fully integrated approach.



Riverbank landscape

The Agency also seeks a greater understanding of the relationship between the biology of streams and rivers with both its immediate and surrounding environment. Such knowledge allows for more accurate reporting, decision making and planning and is relevant to the wide spectrum of Agency responsibilities.

Saltmarsh is a valuable habitat under threat, due to development, land reclamation and rising sea levels. The Agency is seeking ways to protect such habitats from further decline and restore them to their previous state. The Agency is also investigating ways of creating more areas to serve as habitat and flood defence.

The Agency has a duty to protect the Country's heritage in areas under its responsibility and seeks to promote partnership opportunities to conserve our rich history.

Landscape change is of great concern to the Agency and includes the disappearance of turf, erosion of soils, litter, erosion of footpaths, development pressures from nearby towns, the decline and neglect of riparian landscapes, and the loss of trees and farms through either neglect or agricultural intensification. MAFF's Countryside Stewardship and Habitat Schemes encourage the management and enhancement of such landscape.

Rivers and streams are important linear features which can form the basis for wildlife corridors. Linear landscape features along which wildlife can move and live are important to sustain ecological diversity. New development should therefore seek to conserve and where appropriate enhance existing elements of nature conservation important in river corridors. (Refer to Appendix D for further clarification on "River Corridors").



Otter

Recreation and tourism are vital to the economy and quality of life. The control of recreation facilities largely rests with bodies other than the Agency, and the achievement of specific objectives will depend on co-operation with local authorities, landowners and others.

Recreation and amenity features of interest to be protected include:

- *High quality landscapes e.g. AONB's.*
- *Public footpaths, bridleways etc.*

Archaeological features of interest to be protected include:

- *Areas of known archaeological or historic interest.*
- *Old buildings or structures.*

The Conservation and Recreation Function has access to a GIS system and holds data on protected sites within each area. Surveys have also been undertaken which identify the main features of ecological value associated with river corridors (River Habitat Surveys and River Corridor Surveys).

The Agency seeks to retain, improve or restore public access where appropriate; ensure developments do not harm the recreational and amenity potential of inland waters and coastal margins; prevent the loss of waterside recreational space and promote water recreation whilst balancing the recreational needs with nature conservation.

However, it is important for the Agency to carry out its Recreation Strategy and balance health and safety with the needs of young, old, sick or disabled persons when fulfilling its recreational duties.

The Agency has a duty to promote water recreation where it does not conflict with conservation or other functional interests.

There is scope for establishing and maintaining liaison with recreational and conservation organisations and landowners to increase waterside access and recreation opportunities and, where compatible with other uses, through riverside access strategies.

The Agency uses its powers under the land drainage byelaws to apply boat speed limits on tidal stretches of rivers where banks could be eroded by boat wash. Enforcement is made, through frequent speed checks on the rivers.

Erosion, especially the loss of grass cover which would occur, mainly from horse riding and cycling activities, is a risk to the integrity of flood embankments particularly where access along the top of an embankment is proposed.

There is also concern with respect to the health and safety implications of such a proposal. These are being investigated nationally by the Agency and no activity would be endorsed or approved which has the potential to reduce the standard of protection provided to land and property or result in safety concerns.



Water recreation - canoeing

Conservation and Recreation - Regulations

Although no direct approval is required from the Conservation and Recreation functions, the Agency has a statutory duty in undertaking its Flood Defence, Resources and Fisheries functions to promote the protection and enhancement of the flora and fauna of the natural water environment and associated land. In undertaking its water quality, waste management and IPC/IPPC duties, the Agency has a statutory duty to have regard to the conservation of the environment. Such duties are identified in Section 16 and 17 of the Water Resources Act 1991, Section 12 of the Land Drainage Act and Section 7 of the Environment Act 1995.

In addition, the Agency operates to UK and EC environmental legislation to ensure the protection of species, habitats and areas of local, national and international importance. Most notable are the Wildlife & Countryside Act 1981 and EC Legislation – the Habitats (and Species) Directive 1992 (transposed into UK law by the Habitats Regulations 1994). In assessing any proposal, the Agency will seek to ensure not only the protection of such areas but also their enhancement. Objections would be made to any application made to the Agency for its approval that was considered to be detrimental to its conservation and recreation interests. The Agency would also recommend refusal to any planning application it is asked to advise upon, if this again was considered detrimental to its conservation and recreation interests.

To overcome an objection, proposals are often put forward by an applicant to compensate for conservation and recreation features that may be lost. For example, on road schemes where watercourse or wetlands are lost due to culverting, bridging or diversion of watercourses, compensatory features may be incorporated in the formation of new ponds and marshy areas. Such ponds can, if appropriately designed, also be utilised for surface water attenuation facilities and reducing pollution to watercourses. Other forms of enhancement could include the sensitive design of a new channel incorporating riffles and pools and transplanting existing plants and animals.

The Agency also seeks to ensure that river corridors are retained so as to conserve the natural habitat associated with a watercourse. The width of such river corridors varies from site to site, but would normally tie in with the extent of floodplain associated with a watercourse or the Agency's Byelaw widths, whichever is the greater. Such corridors are important as they provide a buffer between development and watercourses, and during construction can help reduce the volume of silt being washed into any watercourse as well as allowing the free movement of animals like the otter, which depend on the water environment. *(Please refer to Appendix D for further clarification).*

As a matter of note the Agency has a policy against the culverting/piping of watercourses beyond the minimum necessary for access to a site and development in floodplains.

In looking at any proposal, consideration must also be given to the time that works are to be undertaken. Of particular importance is the bird nesting season between the end of March and mid July when works should be avoided where possible.

Under the Wildlife and Countryside Act 1981 it is illegal to destroy or disturb nesting birds.

Under Section 16(1) of the Water Resources Act the Agency is entrusted with the protection, enhancement and wise management of archaeological features. These features relate to all inland and coastal waters and to land associated with such waters. These statutory duties are in place due to the wide range of activities which the Agency undertakes or controls and their potential impact on archaeology.

The Environment Act 1995 Section 7(1) (c) states we must "*have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest*".

Cross Functional Interests

Although no actual consent or licence is issued with respect to our conservation and recreation duties, advice is given to both internal staff, the public and external organisations.

In giving advice the following should be considered:

- **Does proposal incorporate a new lake that may require an impoundment licence or abstraction licence (Water Resources).**
- **If works are on line or close to a watercourse a land drainage consent may be required (Customer Services).**
- **Is proposal in a floodplain (Customer Services).**
- **Proposals to enhance habitat may restrict access along a river (Customer Services).**
- **No works should be undertaken which reduce the integrity of any sea, tidal or fluvial defence. Land Drainage consent would be required for any works on or close to such defences (Customer Services).**
- **Does proposal have implications on water quality (Environment Planning).**
- **Any material from excavations may require a waste licence (Environment Protection).**
- **Is proposal on or close to a landfill site or contaminated land (Environment Planning).**
- **Are there any abstractions downstream which may be affected (Water Resources).**
- **Impact on fisheries (Fisheries, Ecology and Recreation).**

Section 8: Protection through Partnership

Our natural environment is complex. Even where we do have a good understanding of a particular element of the environment, what is often much less clear is how it interacts with all other aspects of the local, regional, national and global environment. It is becoming clear that even local environmental impacts can have knock-on effects on other parts of the environment. It is this kind of awareness that led to the Rio Earth Summit in 1992, the adoption of Sustainable Development principles and the commitment to manage the environment in an integrated way through partnership.

The Agency actively promotes 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.

Partnerships will enable the key objectives and the long term vision to be realised. Implementation involves the joint action of a number of organisations, such as local authorities, businesses, conservation organisations and community groups, as well as actions by the Agency.

Land Use Planning:

The control of land use change is primarily the responsibility of Local Planning Authorities (LPAs), through the implementation of the Town and Country Planning Acts. Local development plans provide a framework for land use change and are the key consideration in the determination of planning applications. The Agency is a statutory or advisory consultee on development plans and certain categories of planning applications. Such consultation provides relevant advice to Councils in forwarding environmental policies in development plans and allows the Agency's views to be considered by the Council prior to a planning application being decided or policies in a Development Plan being determined. Guidance regarding the applications the Agency would wish to see is contained in our publication '*Liaison with Local Planning Authorities*' (Environment Agency, March 1997). An annex to this document, '*The Environment Agency and Development Plans*', identifies the basis of policies which the Agency would recommend are included in Development Plans.

Appendix B includes statements regarding land use/planning principles the Agency would promote through its responses to planning applications and development plan consultations. Appendix C lists general & specific types of planning applications we would wish to be consulted on. (*Both Appendices can be found at the end of this document*).

Sustainable Development:

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.

Sustainability is sometimes seen as being opposed to development. However, the Agency considers that development can be achieved in ways that are more 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. There can be opportunities to maximise environmental benefits from development schemes, particularly with creative design and the application of sustainability principles.

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 as follows:

- **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 bio-diversity.**
- **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.**

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 Government has also indicated its commitment to Sustainable Drainage Systems (SUDS) in the draft PPG25 document – Development and Flood Risk, due to be finalised in May 2001.

Opportunities for Environmental Enhancement:

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.**

Continued over

- **Restoration of functioning floodplains to improve ecological value and biodiversity, store and clean floodwaters and help balance water resources.**
- **Promotion of water demand management efficiencies: leakage control, metering and 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 over abstraction.**
- **Where appropriate, initiatives for retaining surface water runoff within the catchment and using grey water; forwarding sustainable urban drainage initiatives.**
- **Locating and phasing new development to make effective use of existing or planned infrastructure and services.**
- **Minimisation of wastes.**
- **Initiatives to encourage development of brownfield sites.**
- **Voluntary remediation.**
- **Use of strategic environmental assessment (policies and geographical).**
- **Provision of improved recreation facilities e.g. disabled persons fishing platforms, riverside footpaths/cycleways, water based recreation, where appropriate.**

Education:

Environmental education is central to our aim of achieving sustainable development. We are developing an education strategy to address the need to educate young people on environmental issues, and to inform and educate the wider society, including industry, agriculture and local communities. To add value in the wide field of environmental education, it is vital that we work in partnership with other organisations and to develop this strategy at the local level through Customer Contact teams in each area office.

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 schemes for example UK Government and European Funding, offer opportunities to help ensure sustainable improvements 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 A

Points to be considered in assessing a Proposal

Are works on line of a watercourse?	Reasons <p>Any diversion, infilling, obstruction (e.g. weir or dam) or piping of a watercourse needs the Agency's consent. It must be ensured such works do not exacerbate or create flooding and are not detrimental to the conservation of the natural water environment. The Agency has a presumption against the piping of any watercourse beyond the minimum required for access.</p> <p>The raising of normal water levels in a watercourse above bank level would require an impoundment licence. It must be ensured that flows downstream are maintained during the construction of the works and any loss of water due to seepage into the ground or evaporation as a result of the works, are not detrimental to the quality of water downstream, abstractions and the natural water environment.</p> <p>The Agency would seek compensatory features for any lost with respect to the conservation of the natural environment.</p>
Are works undertaken close to a river bank top or any defence?	Reasons <p>Access to and along a river or any sea, tidal or fluvial defence subject to the Agency's Byelaws*, must be retained for future maintenance or improvement works. Consent would be required for any works within a distance up to 5, 8 or 15 m dependent on the status of river/defence. (*Byelaw widths differ between Regions. It is therefore essential to check with the relevant Agency office before quoting any widths).</p> <p>No works should be undertaken which are detrimental to the conservation of the natural water environment within any river corridor unless compensatory features can be provided.</p>

<p>Is proposal in a floodplain?</p>	<p>Reasons</p> <p>The infilling of any land liable to or at risk to flooding when a river overtops its banks (i.e. the floodplain) would exacerbate flooding to others due to the loss of effective waterway area or flood storage capacity. Any development in a river floodplain would also be at risk to flooding. The Agency would resist development within/infilling of a floodplain.</p> <p>Consideration must be given to the risk of flooding to property and risk to life if development is proposed in an area at risk to flooding from the sea should there be a breach or overtopping of any sea defence.</p> <p><i>Note: Floodplain maps are held by Customer Services (Planning Liaison). Indicative floodplain maps can also be found on the Agency's Intranet, and on the Internet by accessing via the Agency's website (www.environment-agency.gov.uk) using either the village/town or postcode for the area in question.</i></p>
<p>What happens if a property is at risk from flooding?</p>	<p>Reasons</p> <p>The Agency has specific offices around the country involved in flood forecasting, warning and responding to flooding. These offices make the decision to issue flood warnings and work closely with the emergency services.</p> <p>Flood Wardens, appointed from the general public, also play an increasingly important role in relaying flood warnings, and once alerted by the Agency, either phone or actually knock on their neighbours' doors to let them know a flood warning has been issued.</p> <p>A coded flood warning system exists, which indicates how severe a flood event is likely to be. It is the responsibility of each individual to take appropriate steps to protect themselves and their property.</p> <p>Floodline (0845 988 1188) provides a single national number for the public to ring on any matter associated with flooding from watercourses, rivers and the sea throughout England and Wales.</p>

What are the implications on water quality?	Reasons
	<p>The consent of the Agency is required for the discharge of effluent into the ground water or any watercourse/lake/sea/within__ miles. It must be ensured that any discharge does not pose an unacceptable risk to the water environment and consideration must be given to implications on water supply sources and the conservation and recreation interests. Where risk is unacceptable an application would be refused.</p> <p>There are certain activities which we cannot control directly but are of concern e.g. surface water discharges from car parks, construction of foul sewerage systems (particularly if above important groundwater sources) and storage of oil or chemicals. To ensure adequate controls we therefore have to ask for appropriate planning conditions to be imposed on any planning permission given e.g. to require the use of oil interceptors, or fully sealed ductile iron sewerage systems or bunding of tanks.</p> <p>Where the risk is unacceptable we would recommend an objection to the planning application by the Local Planning Authority.</p> <p>It must be ensured that the works do not disturb silt at the bottom of a watercourse or result in silt being washed off a site into a watercourse as this could harm or kill off the flora and fauna.</p>
Does proposal require water?	Reasons
	<p>The abstraction of water from groundwater or any surface water is likely to require a licence from the Agency. An application would not be approved if considered to be detrimental to other licenced users or those having rights to water not requiring a licence or to the ecology of the natural water environment.</p>
Does proposal require the impoundment of water?	Reasons
<p style="text-align: right;">-62-</p>	<p>A structure such as a weir or dam built across a watercourse channel which raises the normal water levels upstream above the natural bank level of the watercourse, or, where a lake or pond is constructed off-line of a watercourse which raises water levels above natural ground levels, would require an Impoundment Licence.</p>

Does proposal require a Drought Order or Permit?	Reasons
	<p>Drought Orders and Permits provide for water resource reallocation to meet emergency environmental or water supply deficiencies.</p> <p>Applications for Drought Orders are made to the Secretary of State by the water undertaker after preliminary consultation with the Environment Agency.</p> <p>Drought permits may involve a licence variation only and are issued by the Agency directly to water undertakers.</p>
Does proposal incorporate any infilling or excavation operation?	Reasons
	<p>Consideration must be given to whether a waste management licence is required from the Agency. In assessing an application it would have to be shown that the proposal is not detrimental to human health or cause harm to the environment.</p> <p>The keeping, handling, treatment and disposal of controlled waste is regulated by the Agency (there are certain exceptions).</p>
Does the proposal involve moving special waste?	Reasons
	<p>Some wastes, including flammable and toxic substances, are known as "Special Wastes" requiring careful handling in accordance with certain procedures. The largest categories of special waste arisings are: waste oils (from hydraulics, engines, interceptors, bilge and sludges), paints and varnishes with adhesive and printing inks, batteries and gas bottles, asbestos, organic chemical processes, inorganic chemical processes, health care and municipal wastes with industrial and institutional waste. A consignment Note (available from the Agency) must be obtained by the Carrier before moving such waste.</p>
Is proposal on or close to any landfill site or contaminated land?	Reasons
<p style="text-align: center;">-63-</p>	<p>It must be ensured that proposal does not cause harm to or pollute the environment or is at risk itself as a result of disturbing waste or contaminated material or gas which can permeate through the soil to sites adjacent to landfill sites or contaminated land. We are a statutory consultee for any planning application on or within 250 metres of such</p> <p style="text-align: right;"><i>Continued over</i></p>

Is proposal on or close to any landfill site or contaminated land? (continued)	Reasons
	sites. Special site investigations and construction methods may be necessary in such areas, details of these however, would be specified by others – normally the Council’s Building Regulations Department.
Is proposal a major industrial process?	Reasons
	The Agency regulates discharges to land, air or water from industrial processes identified in Regulations laid down under Part 1 of the Environmental Protection Act (1990). These tend to be the major industrial processes. Local Authorities are responsible for other industrial processes identified in Part B of the Regulations.
Does proposal use, store, transfer or dispose of radioactive material?	Reasons
	A registration to hold and use radioactive material will be required. Discharges from nuclear facilities and accumulation and disposal of radioactive waste will also require authorisation:
Is site in a sensitive groundwater protection zone?	Reasons
	About 80% of drinking water in Sussex is abstracted from the ground. It is imperative that these sources are protected from contamination. Pollution of a groundwater source could make it redundant for ten years. Maps showing groundwater zones have been identified by the Agency’s Groundwater Protection Group. The document (formerly produced by the NRA) “ <i>Policy and Guidance for the Protection of Groundwater</i> ” highlights constraints on development and practices within identified zones. This document is particularly relevant to land use proposals.
What are the implications on fisheries?	Reasons
	The Agency has a statutory duty to maintain, develop and improve fisheries. Various approvals are required from the Agency including consent for the movement or introduction of fish or fish spawn to a watercourse, lake etc and licences for fishing

What are the implications on fisheries? (continued)	Reasons
	<p>by rod and reel or nets. The Agency also regulates the sale and export of salmon and sea trout.</p> <p>The Agency will require a fish pass to be incorporated into any weir, dam or lake obstruction constructed on-line of a watercourse, to ensure the unobstructed migration of salmon and sea trout.</p>
What are the implications of works on the environment?	Reasons
	<p>The Agency has a statutory duty to enhance the flora and fauna of the natural water environment in undertaking its flood defence, resources and fisheries functions. Also the Agency has a duty to have regard to the conservation of the environment with respect to its other functions. Applications should be refused where the Agency's environmental duties are not complied with. Compensatory measures may be considered to overcome detriment to the conservation and recreation of the environment.</p> <p>Consideration must also be given as to when works are undertaken and consequent disturbance on the natural environment. Of particular importance is the bird nesting season between the end of March and mid July when works should be avoided where possible.</p>
Is proposal within an area of environmental or archaeological designation (e.g. SSSI, SPA, or RAMSAR Site)?	Reason
	<p>The Agency operates to UK and EC environmental legislation to ensure the protection of species, habitats and areas of local, national and international importance, to include areas of archaeological value.</p>

Appendix B

Land Use/Planning Principles promoted by the Agency in responses to Planning Applications and Development Plan consultations

<p>Land Use Planning Statements</p>	<p>The statements are intended to inform local planning authorities and others, including developers, of possible areas of constraint on development and environmental issues that may be identified by the Agency in any consultation and may impact on the development. The information would also be relevant to any policies/guidance included within Development Plans.</p>
<p>Sustainable Development</p>	<p>The adoption of a precautionary approach to development which might affect the environment is encouraged. The environmental effects of development should minimise adverse impacts and maximise potential benefits. In particular, opportunities should be taken to incorporate natural features and environmental enhancements as part of development.</p>
<p>Sustainable Waste Management</p>	<p>Opportunities for waste minimisation, reuse and recycling must be forwarded. The promotion of recycling facilities in new development would be promoted, and aggregate reuse and reclamation of production process base materials would be encouraged to reduce demand on primary resources, waste disposal facilities and landfill space.</p>
<p>Effluent Disposal/Pollution Prevention</p>	<p>The availability and provision of adequate sewerage/drainage systems, sewage treatment capacity and pollution prevention facilities must be taken into account when development is planned. It must be ensured that an adequate means of disposal for foul sewage, surface water and effluent are available or that development is phased until these are provided. The operation of sewage treatment/disposal sites should not be jeopardised by locating new, sensitive development in the immediate vicinity.</p> <p style="text-align: right;"><i>Continued over</i></p>

Effluent Disposal/Pollution Prevention (cont'd)	<p>In the case of proposals producing effluent or waste it should be established that there is an adequate means of disposal. Developments involving the storage or use of oil or potentially polluting toxic substances must incorporate adequate safe-guards to minimise pollution risk. Developments such as intensive livestock units must be located where effluent and waste can be disposed of safely. The use of source control techniques to reduce diffuse pollution will be encouraged.</p>
Contaminated and Reclaimed Sites	<p>Contaminated sites, such as ex-industrial, gas works, waste disposal operations and old mine workings cause or have the potential to cause, pollution problems and concerns regarding implications of gas movement in the ground. Any works, including redevelopment and any excavations on or close to such sites should be accompanied by a site investigation indicating the degree of contamination and gas movement and, where appropriate, necessary remediation works and/or construction details. Proposals that present opportunities for environmental enhancement will be encouraged.</p>
Water Resources	<p>Full account must be taken of the availability and protection of water resources and the provision of water supplies in considering the location and extent of new developments. Key issues are quantity, location and source (i.e. surface water or groundwater) of abstractions and the need to maintain aquifer recharge whilst protecting the resource from pollution. Measures to maintain aquifer recharge and minimise waste through leakage control and demand management are supported. Development particularly industrial, would be resisted in areas identified as being particularly sensitive to pollution. Phasing of development will be required where existing infrastructure needs to be uprated or new infrastructure provided.</p>
River Floodplains and Surface Water Runoff	<p>The floodplains of watercourses must be safeguarded from encroachment by development. Development in a floodplain would not only itself be at risk to flooding, but would exacerbate or cause flooding elsewhere due to loss of flood waterway area or flood storage.</p> <p style="text-align: right;"><i>Continued over</i></p>

River Floodplains and Surface Water Runoff (cont'd)	The creation of impermeable surfaces can, if not managed, increase the rate of surface water runoff to a watercourse thus increasing flood flow and flood risk elsewhere. The promotion of source control techniques will be promoted, where appropriate, including the use of wet attenuation ponds to address this concern.
Integrity of Defences and River Channels	To ensure flood risk is not increased the integrity of river channels and flood defences must be protected, together with access to and along rivers for future maintenance and improvement works.
Source Control	Local Authorities, in partnership with the Environment Agency, will encourage the use of environmentally sensitive techniques, such as source control, to ensure flood risk due to increased surface water runoff, pollution loads (including silt) and diminished aquifer recharge are not exacerbated by new development.
Tidal Floodplains	The risk associated with flooding from the sea and tidal rivers will be assessed for new development proposals. Development will generally be resisted along the undeveloped coastline where an unacceptable risk of flooding is identified, and in vulnerable areas along the coastline where there may be a risk to life in the event of a breach of defence. The future integrity of sea and tidal defences must be assured, together with access routes to and along defences for future maintenance and improvement works.
Watercourse Corridors and Wetlands	The conservation, fisheries, landscape, heritage/archaeological and recreational value of watercourse corridors and wetlands must be protected and enhanced. Culverting of or bridges across watercourses must be kept to a minimum and environmental mitigation works will be required to compensate for that lost due to such proposals. Inappropriate uses leading to degradation by soil erosion, increased floodrisk etc. must be avoided.

Continued over

Watercourse Corridors and Wetlands (cont'd)	The value and need for buffer zones to be retained between development and natural watercourse corridors and wetlands must be forwarded. The retention of watercourse corridors may also be required for future man or machine access for maintenance and improvement works.
Air Quality	Due regard should be given to meet the aims of the "National Air Quality Strategy". Development Plans should take account of air quality concerns and minimise HGV and car journeys in assessing development. Plans should also encourage the use of less polluting means of transport.
Mineral Extraction and Waste Disposal	The management of mineral extraction and waste disposal sites must provide for the protection of the environment from pollution and increased flood risk in their construction, operation and aftercare. The effects on water resources, site drainage, leachate and air borne litter must be considered. Consideration will be given to the possible effects of pollution and nuisance when determining the appropriateness of development within the vicinity of these sites, to avoid conflicting land uses jeopardising their effective operation. Proposals for restoration of worked-out mineral sites which present opportunities for environmental enhancement will be encouraged.
Tourism and Recreation	The Environment Agency will seek to ensure tourism and recreation developments are sympathetically designed and located to take into account the protection, and where possible, enhancement, of the water environment. Promotion of water-based recreation facilities will take into account the need to safeguard high quality riverine habitats, with sensitive areas being monitored and protected from recreational pressures as appropriate.

Appendix C

Developments requiring Environment Agency Consultation

GENERAL

- **Development in, or adjacent to (8 metres (fluvial)/15 metres (tidal))** of a watercourse or river defence, within 18 metres** of the landward toe of any sea defence or within 250 metres** of mean high water mark where a sea defence consists of natural or artificial high ground. (*These Byelaw widths will differ between Regions*).**
- **Development within map-based flood risk areas and those suspected of flooding (including tidal lengths and the sea).**
- **Development involving a new surface water discharge outfall direct to a watercourse and/or sited within an area where there are watercourse capacity or other surface water run-off problems.**
- **Development which may affect an aquatic/wetland site of conservation interest.**
- **Development of potentially contaminated sites e.g. former gas works, historical industrial uses, former bulk fuel storage facilities (including petrol filling stations), sites where chemicals were produced and old landfill sites.**
- **Development requiring a private foul drainage system where any part of the system is within 50 metres of a well, borehole, or spring or within 10 metres of a watercourse.**
- **Development within sensitive groundwater vulnerable areas or source protection zones.**
- **Development within identified areas where there are existing public sewerage or sewage disposal problems in sewered areas.**
- **Built 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 is a high risk to the environment.**
- **Development on the site of or within 500 metres (measured from the site boundary) of a process subject to Integrated Pollution Control (gradually being replaced by Integrated Pollution, Prevention and Control), or subject to the Control of Industrial Air Pollution (Registration of Works) Regulations 1989.**
- **Development requiring a private means of water supply.**

SPECIFIC

- **Developments > 1 hectare on a greenfield or > 2 hectares on a brownfield/redeveloped site.**
- **Waste management operations including landfill or landraising, waste transfer stations, scrap yards, solvent recovery plants, bailing and re-cycling plants.**
- **Mineral workings and exploratory works including oil and gas exploration and land restoration projects.**
- **Developments involving the storage, containment, loading or distribution of:**
 - (a) hazardous substances, chemicals, fertilisers etc.**
 - (b) mineral oils and their derivatives (including agricultural fuels)**
 - (c) sewage sludge**
 - (d) silage, slurry/manure/agricultural effluents etc (including livestock housing)**
- **Cemeteries and crematoriums where any part of the site is within 50 metres of a well, borehole or spring or within 10 metres of a watercourse.**
- **Fish farms**
- **Golf courses.**
- **Development which falls within the Environmental Impact Assessment Regulations 1999**

Appendix D

Best Management Practices

The following Guidance Notes are produced to raise awareness of initiatives with respect to:

Protection and Enhancement of Natural River Corridors:
<ul style="list-style-type: none">• Drainage , i.e.• Retention/Detention Ponds• Infiltration Trenches• Grass Swales• Porous Surfaces

Appendix D also includes a list of Pollution Prevention Guidance Notes (PPGs) produced by the Agency and available from any Agency office.

context

- Comply with legislative requirements and meet Agency objectives consistent with the need of developers to maximise use of available land
- Design options should be appropriate to the receiving environmental character, development type and size.



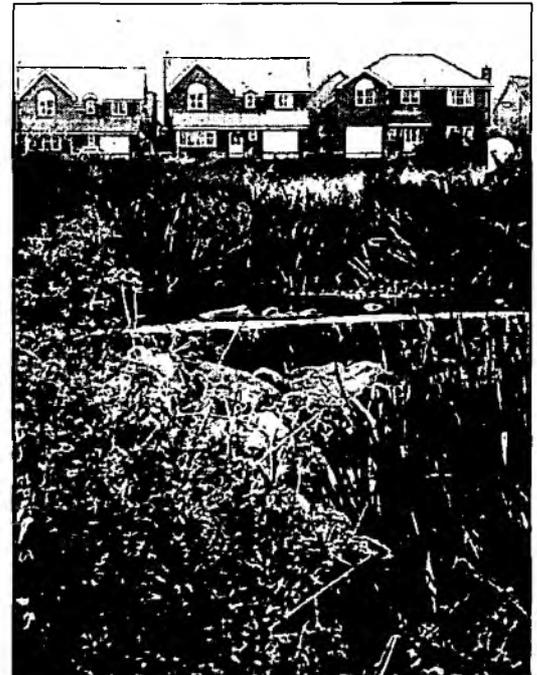
principles

- promotion of natural river corridors
- corridor is influenced by floodplain characteristics
- provision of habitat opportunities
- maximise recreation facilities where appropriate
- have due regard to safety
- provision of access
- protect designated habitats and species



considerations for planners & developers

- access is required for maintenance and improvement works
- rivers must retain floodplain characteristics
- have regard to existing uses and licences



design options

- ecological enhancement of river edge including buffer vegetation strips
- river channel works such as creation of pool-riffle sequences
- reinstatement of meanders
- links with existing green corridors
- potential for integrating with sustainable land drainage systems
- creation of off-river channels and backwaters
- recreation areas such as riverside walks, nature trails, moorings, fishing platforms
- provide artificial habitat features eg. otter holes

environmental benefits

- increased biodiversity
- improved water quality
- enhanced landscape, amenity and recreational value
- enhanced public image
- no increased flood risk



further information :

The New Rivers and Wildlife Handbook (RSPB, NRA, Wildlife Trusts, 1994)

context

- Relates to urban, urban fringe and rural locations
- Design options should be appropriate to the receiving environmental character, development type and size
- Comply with legislative requirements and meet Agency objectives consistent with the need of developers to maximise use of available land



principles

- Retain water within its natural catchment area
- Promote natural drainage systems
- Ensure floodrisk is not increased
- Protect rivers from diffuse pollution
- Reduce infrastructure costs
- Promote good environmental practice
- Provide opportunities for conservation and amenity enhancements

considerations for planners & developers

- Meet existing and emerging statutory requirements at national, regional and local level
- Achieve cost effective solutions
- Encourage high standards of environmental design and facilitate the planning and development process
- Promote conservation of water resources
- Increase nature conservation value
- Reduce maintenance costs and facilitate long-term management

environmental benefits

- Cleaner rivers and streams
- No increased risk of flooding of land and property
- Increased biodiversity
- Improved landscape and urban environment
- Positive image
- Lower maintenance costs
- More sustainable use of water
- Recharges groundwaters



design options & techniques

- 1** retention/detention ponds :
wet ponds, dry ponds, stormwater wetlands
- 2** infiltration trenches
- 3** grass swales
- 4** porous surfaces



further information :

A Guide to Sustainable Urban Drainage (SEPA/Environment Agency, 1999)
Nature's Way (IAWQ, 1996)

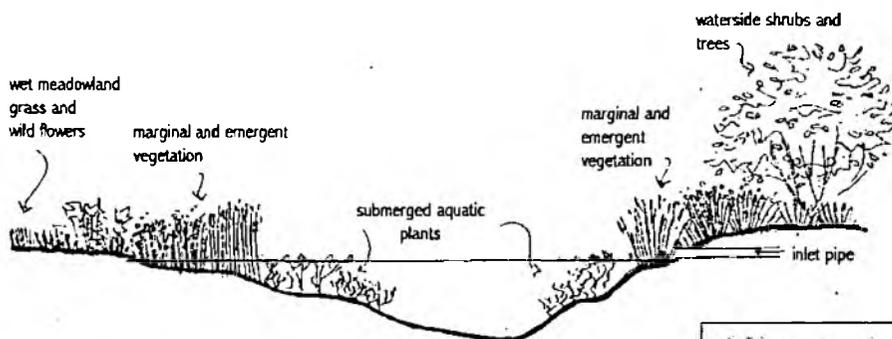


function

- stores water on site to ensure no increased flood risk downstream
- ensures rate of runoff to rivers and streams is not increased
- reduces diffuse pollution with effective reedbed design and management
- collects surface water runoff both directly from drainage pipes and from other surface water management features such as swales and filter strips
- retains water all of the time (dry ponds only for a few hours)
- multiple function feature with potential for the creation of conservation and amenity areas
- increases infiltration into the ground

design

- size and form to meet design storm runoff flows from the site to Agency requirements
- size to meet identified inflow/permitted discharge parameters
- inflow from surface water runoff directly from drainage system or other management systems or a controlled overflow from a watercourse
- outflow to controlled waters (streams, rivers, groundwaters)
- design features to incorporate sedimentation area at inlet, for example, reed beds
- integrated approach to the design to ensure that hydraulic function is maintained whilst creating a nature conservation area with amenity interest



use

- located within or on edge of developments, with potential to be incorporated within public open space; can form a focal feature for development
- wet ponds usually promoted because opportunities for environmental enhancement
- dry ponds are temporarily wet and may be more suitable for small developments with limited green space



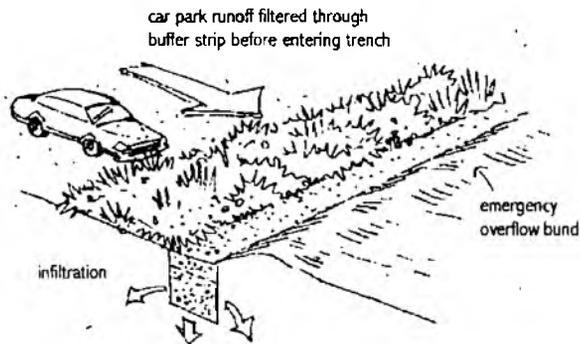
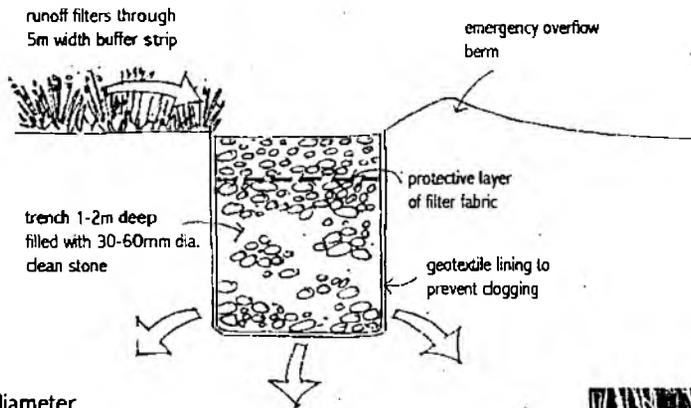


function

- receives surface water runoff from roofs, roads, pavements and footpaths
- allows surface water to gradually infiltrate into subsoil
- reduces rate of runoff into rivers and streams
- improves quality of water entering rivers and streams

design

- depth of trench between 1 - 2 metres
- trench filled with stone of 30 - 60mm in diameter
- trench lined with a geotextile lining to reduce clogging
- length and width of trench variable according to infiltration rate
- can be designed with a pre-treatment mechanism for the inflow to remove suspended solids, e.g. vegetation buffer strip or gully/catchment pit



use

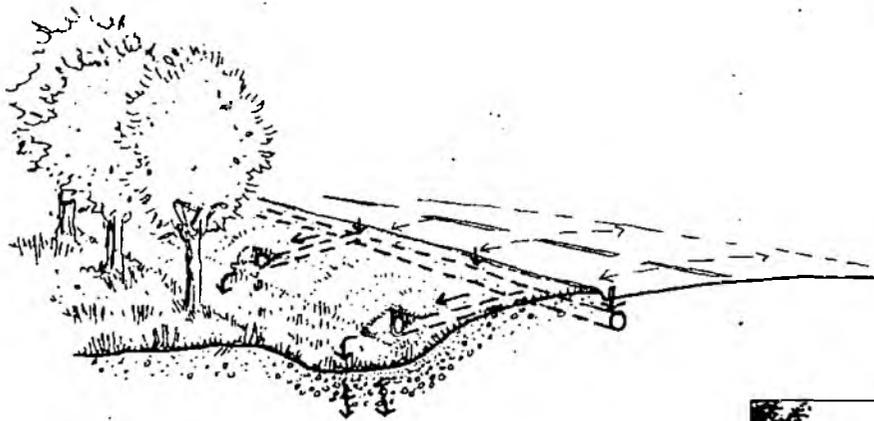
- source control technique
- adjacent to linear hardstanding feature (e.g. roads) and discrete hardstanding areas (e.g. car parks) with a maximum catchment area of 2 -3 hectares
- in areas with good soil infiltration rates (i.e. >12.5mm per hour)

2

infiltration trenches

function

- receives surface water runoff from roofs, roads, pavements and footpaths
- allows surface water to both dissipate into soils and to flow overland to other drainage features
- dry outside of periods of rainfall



design options

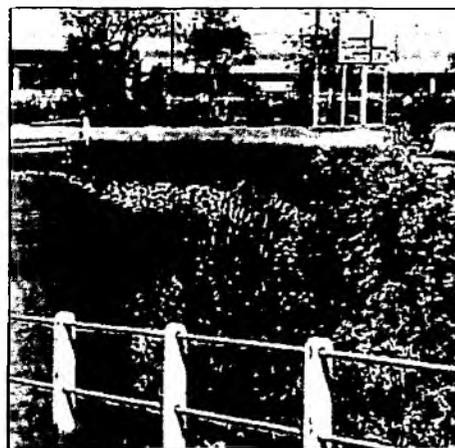
- shallow ditch with broad bottom and gently sloping sides
- options for planting range from amenity grassland to wildlife habitat
- low cost construction and maintenance



close mown swale

use

- located adjacent to roads, pavements and footpaths
- part of a surface water drainage network leading to ponds, basins and stormwater wetlands



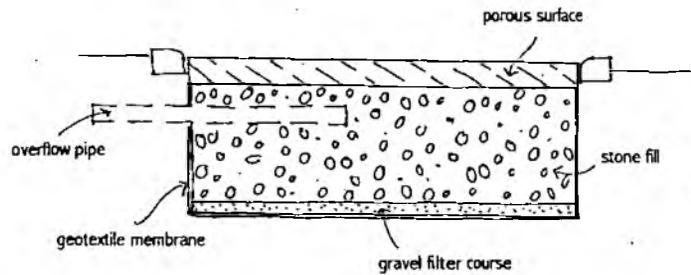
swale as wildlife habitat

3

**grass
swales**

function

- porous surfaces allow water to permeate through rather than run off paving
- rainwater filters directly into subsoil or stone sub base
- reduces rate of runoff into rivers and streams

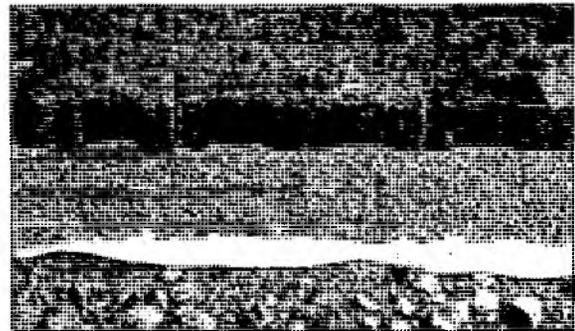


design

- Variety of surfaces including traditional gravel, porous blacktop, and porous unit paving

use

- lightly contaminated areas including car parks, play areas and lightly trafficked areas
- overflow can discharge into swales, ponds or watercourses, or storage for re-use



4

porous surfaces

"PROTECTING THE ENVIRONMENT THROUGH EFFECTIVE ENVIRONMENT AGENCY REGULATION AND ADVICE"

AIDE MEMOIRE

This "Aide Memoire" has been produced to assist staff on site with the Agency's requirements and is a summarised version of "Protecting the Environment through effective Environment Agency Regulation and Advice". It should be noted that both documents are only a resumé of what can be detailed legislation. Please consider the following note and disclaimer carefully before offering advice to the general public.

IMPORTANT NOTE AND DISCLAIMER TO ALL STAFF

FOR INTERNAL USE ONLY. THIS DOCUMENT HAS BEEN PRODUCED SPECIFICALLY FOR STAFF TO RAISE AWARENESS IN ALL THE AGENCY'S REGULATORY ROLES AND MUST NOT BE PASSED TO ANY OUTSIDE PERSON OR ORGANISATION.

ALTHOUGH OUR REQUIREMENTS ARE CONSIDERED ON A FUNCTIONAL BASIS, IT MUST BE STRESSED THAT ANY PARTICULAR PROPOSAL MAY REQUIRE MORE THAN ONE APPROVAL FROM THE AGENCY.

ALL FUNCTIONAL STAFF MUST, THEREFORE, WHEN ASSESSING ANY APPLICATION OR GIVING ADVICE, BE AWARE OF THE AGENCY'S DUTIES SO THAT AN INTEGRATED APPROACH CAN BE TAKEN FOR THE PROTECTION OF THE ENVIRONMENT.

FLOOD DEFENCE

CONSENT REQUIRED FOR:

- Any works in, over or under a "main river".
- Any culverting, obstruction, diversion or infilling of a watercourse.
- Any works in or adjacent to (distance on relevant Byelaw) a classified watercourse or sea defence.
- Where water is diverted from its channel a screen shall be placed and maintained to exclude fish – provision of the screen requires consent.

GENERAL INFORMATION:

- The Agency advises local Planning Authorities on implications of new development upon flooding.
- The Agency can require cleansing of a watercourse where proper flow is impeded.

Contact: Development Control and Authorisations Team – Customer Services

WATER RESOURCES

CONSENT/LICENCE REQUIRED FOR:

- Drought permits.
- Impoundment of any water on line of a watercourse.
- Abstraction of water from underground or surface waters.

GENERAL INFORMATION:

- The Agency advises Water Undertakers on Drought Order applications prior to their submission to the Secretary of State.
- Any reservoir with a capacity within excess of 25,000m³ above the natural level of any part of the land adjoining a reservoir is classified as a "large raised reservoir" requiring special consideration and design by a panel engineer.

Contact: Water Resources Team

WATER QUALITY

CONSENT REQUIRED FOR:

- Discharge of effluent into underground surface, estuarial and coastal waters.
- Silage making, slurry storage systems including yard washings and storage of fuel oil in excess of 1500 litres.
- Disposal of "listed" substances into or onto land i.e. pesticides, sheep dip etc.

GENERAL INFORMATION:

- The Agency issues Works Notices to prevent or remedy the effects of pollution of controlled waters.

Contact: Environment Planning Team

WASTE MANAGEMENT

CONSENT/LICENCE REQUIRED FOR:

- Treating, keeping, depositing or disposing of any controlled waste on land.
- Movement of special (hazardous) waste.
- Use of more than 50 tonnes of packing material in any one year.
- Transport of waste during the course of a business.
-

GENERAL INFORMATION:

The Agency:

- Controls any process prescribed under Schedule 1 of Statutory Instrument (SI) 1991 No. 472 Environmental Protection (Prescribed Processes and Substances) Regulations (as amended).
- Monitors ecologically sensitive sites to control the spreading of sewage sludge and industrial wastes on land.
- Operates a "Duty of Care" policy to ensure that the recycling or disposal of waste is carried out by an authorised carrier, in a safe and appropriate manner.

Contact: Environment Protection Team

PROCESS INDUSTRIES AND RADIOACTIVE SUBSTANCES (including IPPC)

AUTHORISATION/REGISTRATION REQUIRED FOR:

- Storage, use and disposal of radioactive material.

AUTHORISATION/PERMIT REQUIRED FOR:

- Operation of prescribed process under IPC/IPPC.

GENERAL INFORMATION:

- Integrated Pollution Control (IPC) authorisations will be replaced with IPPC permits in the period up to October 2007. IPPC permits will be required for all new and substantially changed existing installations.
- The Agency regulates the keeping, use and disposal of radioactive substances and in particular, radioactive waste.
- Emission limits and operating conditions will be based on Best Available Techniques (BAT) taking into account the technical characteristics of installations, geographical location and local environmental conditions.

Contact: PIR Team

FISHERIES

CONSENT/LICENCE REQUIRED FOR:

- Introduction of any solid or liquid matter into waters containing fish.
- Use of a "fixed engine" net or instrument to take, or facilitate the taking of fish or to detain or obstruct the free passage of migratory fish i.e. sea trout.
- The construction or modification of a dam or any other type of obstruction.
- The modification to river flow which may render a fish pass less effective i.e. in vicinity of fish pass structure.
- Where water is diverted from its channel a screen shall be placed and maintained to exclude fish - provision of the screen requires consent.
- Use of an instrument other than a rod and line to remove fish.
- Movement or introduction of fish or fish spawn to an inland watercourse, lake etc.
- Rod and line fishing.

GENERAL INFORMATION:

- The Agency is responsible for regulating fishing methods and times.
- It is an offence not to maintain a fish pass in an efficient state.

Contact: FER Team

CONSERVATION & RECREATION

ALTHOUGH NO DIRECT APPROVALS ARE REQUIRED THE AGENCY, IN ASSESSING ANY PROPOSAL SEEKS TO:

- Ensure the protection of species, habitats and areas of local, national and international importance.
- Has regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering or historic interest.
- If site lies within the boundary of a protected site (e.g. SSSI, SPA, SAC, Ramsar) then the formal consent of English Nature may be required for any works of a potentially damaging nature.
- Strict procedures exist in the case of internationally important sites under the Habitats Regulations (1994).

Contact: FER Team

Pollution Prevention Guidance Notes (PPGs) produced by the Environment Agency and available from any Agency Office:

- PPG1 – General guide to the prevention of pollution
- PPG2 – Above ground oil storage tanks
- PPG3 – The use and design of oil separators in surface water drainage systems
- PPG4 – Disposal of sewage where no mains drainage is available
- PPG5 – Works in, near or liable to affect watercourses
- PPG6 – Working at demolition and construction sites
- PPG7 – Fuelling stations: construction and operation
- PPG8 – Safe storage and disposal of used oils
- PPG9 – Pesticides
- PPG10 – Highway depots
- PPG11 - Industrial sites
- PPG12 – Sheep dip
- PPG13 – High pressure water and steam cleaners
- PPG14 – Boats and marinas
- PPG15 – Retail premises
- PPG16 – Schools and other educational establishments
- PPG17 – Dairies and other milk handling operations
- PPG18 – Managing fire, water and major spillages
- PPG19 – Garages and vehicle service centres
- PPG20 – Dewatering underground ducts and chambers
- PPG21 – Pollution and incident response planning
- PPG22 – Dealing with spillages on highways
- PPG23 – Maintenance of structures over water
- PPG24 – Stables, kennels and catteries
- PPG25 – Hospitals & healthcare establishments
- PPG26 – Drum storage (available late March 2001)
- Masonry bunds for oil storage tanks
- Concrete bunds for oil storage tanks
- Works notices regulations
- River pollution and how to avoid it
- Chemical pollution and how to avoid it
- Pollution from your home and how to avoid it
- Solvent pollution and how to avoid it
- Silt pollution and how to avoid it
- Farm pollution and how to avoid it
- Silage pollution and how to avoid it
- Farm waste management plans
- Mobile sheep dipping
- Nitrate vulnerable zones
- Control of Pollution (Slurry, Silage & Agricultural Fuel Oil) Regulations 1991
- The use of air cooled blast-furnace slag as an unbound aggregate in the construction industry
- A guide to good environmental practice for trading estates and business parks
- Waste minimisation good practice guide
- Making the right connection
- Follow the oil care code
- Oil care at home
- Oil care at work

Pollution Prevention Guidance Notes (PPGs) produced by the Environment Agency and available from any Agency Office (continued):

- Oil care on your boat
- Use your brain sticker
- Industrial oil tank sticker
- Domestic oil tank sticker
- Oil care car window sticker
- Farm waste regulations
- Video packs – To receive the video packs below please call 0845 733 7700:
 - “Pollution prevention pays” (Leaflet, poster and video FREE)
 - “Money for nothing, waste tips for free” (waste minimisation video and booklet FREE)
 - “Building a cleaner future” (Booklet, poster and video £50 for first copy then £10 for further copies)

Pollution Prevention Guidance Notes (PPGs) produced by the Environment Agency and available from any Agency Office:

- PPG1 – General guide to the prevention of pollution of controlled waters
- PPG2 – Above ground oil storage tanks
- PPG3 – The use and design of oil separators in surface water drainage systems
- PPG4 – Disposal of sewage where no mains drainage is available
- PPG5 – Works in, near or liable to affect watercourses
- PPG6 – Working at demolition and construction sites
- PPG7 – Fuelling stations: construction and operation
- PPG8 – Safe storage and disposal of used oils
- PPG9 – Pesticides
- PPG10 – Highway depots
- PPG11 – Industrial sites
- PPG12 – Sheep dip
- PPG13 – The use of high pressure water and steam cleaners
- PPG14 – Boats and marinas
- PPG15 – Retail premises
- PPG16 – Schools and other educational establishments
- PPG17 – Dairies and other milk handling operations
- PPG18 – Control of spillages and fire fighting run-off
- PPG19 – Garages and vehicle service centres
- PPG20 – Dewatering underground ducts and chambers
- PPG21 – Metal recycling sites
- PPG22 – Dealing with spillages on highways
- PPG23 – Maintenance of structures over water
- PPG24 – Stables, kennels and catteries
- Masonry bunds for oil storage tanks
- Concrete bunds for oil storage tanks
- River pollution and how to avoid it
- Chemical pollution and how to avoid it
- Pollution from your home and how to avoid it
- Solvent pollution and how to avoid it
- Silt pollution and how to avoid it
- Farm pollution and how to avoid it
- Silage pollution and how to avoid it
- Farm waste management plans
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- Follow the oil care code
- Oil care at home
- Oil care at work
- Oil care on your boat
- Use your brain sticker
- Industrial oil tank sticker
- Domestic oil tank sticker
- Car window sticker
- Farm waste regulations
- Video packs (tel. 0345 33 77 00):
Pollution prevention pays (Leaflet, poster and video FREE)
Building a cleaner future (Booklet, poster and video £50 then £10 for further copies) -

SOUTHERN REGION ADDRESSES

REGIONAL OFFICE

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

HAMPSHIRE AND ISLE OF

WIGHT AREA OFFICE

Environment Agency
Wessex Business Park
Wessex Way
Colden Common
Winchester
Hampshire SO21 1WP
Tel: 01962 713 267
Fax: 01962 841 573

KENT AREA OFFICE

Environment Agency
Orchard House
Endeavour Park
London Road
Addington
West Malling
Kent ME19 5SH
Tel: 01732 875 587
Fax: 01732 875 057

SUSSEX AREA OFFICE

Environment Agency
Saxon House
Little High Street
Worthing
West Sussex
BN11 1DH
Tel: 01903 215 835
Fax: 01903 215 884

ISLE OF WIGHT

Tel: 01983 822 986
Fax: 01983 822 985



- Area Administrative Boundaries
- - - Regional Boundary
- Area Office
- ▲ Regional Headquarters

www.environment-agency.gov.uk

ENVIRONMENT AGENCY
GENERAL ENQUIRY LINE

0845 933 3111

ENVIRONMENT AGENCY
FLOODLINE

0845 988 1188

ENVIRONMENT AGENCY
EMERGENCY HOTLINE

0800 80 70 60



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