



**POLICY AND PRACTICE FOR THE
PROTECTION OF FLOODPLAINS**

DRAFT

DECEMBER 1995

National Rivers Authority

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IMPORTANT NOTE

This document relates powers, duties and policies of the National Rivers Authority. The transfer of the Flood Defence function of the NRA to the Environment Agency with effect from 1 April 1996 will necessitate amendments to some of the legal references in Appendix 1 in particular, as a result of the Environment Act 1995. The remainder of the document, including the policies and their underlying objectives, will be largely unchanged.

1 INTRODUCTION.

1.1 Purpose of Document

This document sets out the policies of the National Rivers Authority (NRA) in relation to floodplains, and explains the reasoning behind them. The overall aim of the NRA policy is to secure and where necessary restore the effectiveness of floodplains for flood defence and environmental purposes. The document does not represent a change in policy but is a consolidation of existing custom and practice.

1.2 Rivers & Floodplains

Rivers and floodplains are fundamental parts of the water environment. Their existence is a result of natural forces and processes which mankind must respect if land drainage and flooding problems are to be avoided.

Rivers drain groundwater and surface water run-off from developed and undeveloped land. River channels have a limited capacity and when this is exceeded, flooding of the adjoining land known as the floodplain occurs. Floodplains convey and store flood water during such times.

Floodplain storage reduces the peak flood flow in the river. The effect of this is to reduce flood levels and the risk of flooding downstream. Additionally, floodplains assist in the conveyance of flood waters which can also have a bearing on flood levels and flood risks.

1.3 Coastal Floodplains

Coastal floodplains are areas of low lying land along our coasts which can be flooded by the sea. They act as a buffer to help protect the coastal hinterland from tidal flooding. Tidal floodplains in estuaries can be flooded from either raised sea levels or floodwater from rivers, or a combination of both. These areas require special attention to determine the risks of either event.

1.4 Washlands and other Terms

Areas of floodplain where water is stored, either naturally or artificially, in times of flood are

sometimes referred to as washlands. Parts of a floodplain may also be important for flood flows and these are often described by terms such as flood route or flood way. For the purposes of this document the use of the term floodplain should be taken to include all such washland areas and flood routes.

1.5 Importance of Floodplains

The flooding of floodplain areas is both natural and desirable. The effectiveness of rivers and floodplains to convey and to store flood water, and minimise flood risks can be adversely affected by human activity, especially by development which physically changes the floodplain.

During the 19th and early 20th Century, urban settlements encroached upon the floodplain. Indeed many of our settlements have grown up around river crossing points where transport routes converged. There was little attempt to steer development away from floodplains and as a result the channels of many major rivers became very restricted in urban areas.

Throughout England and Wales, and particularly in urban areas, a considerable amount of development has taken place on the coastal floodplain as well as in river floodplains. Consequently, people and property in these areas are already at risk from flooding.

Traditionally, floodplains have been used for agricultural purposes. River levels were lowered to aid field drainage and to reduce the frequency of flooding thus boosting crop yields. This intensive use of floodplain land is now less important and there are opportunities to re-establish its natural functions including its use for wildlife. Much floodplain land is already of high ecological value and many river valleys have statutory wildlife and conservation status. The changes in farming practices must not result in floodplain areas being released for inappropriate development.

2 PRINCIPLES OF FLOODPLAIN PROTECTION

2.1 Key Engineering Principles:-

- Development on a floodplain can obstruct flood flows. If it does, flood levels upstream of the development are increased and this increases upstream flood risks.
- Development on a floodplain can reduce the amount of land available for flood water storage. Loss of flood water storage reduces flood attenuation which results in an increase in downstream flood levels, thereby increasing downstream flood risks.
- Development on a floodplain may itself be at risk from flooding. Protection by flood defences reduces, but does not eliminate, the risk of flooding.
- The adverse effects of inappropriate development, however small, are cumulative and can lead to significant problems in the longer term.
- The removal of any existing inappropriate developments, particularly during redevelopment, can help to restore the functions of natural floodplain areas.
- Development anywhere increases the amount of impermeable land in river catchments. This increases the amount and rate of surface water run-off which if unmanaged can increase river flows and the risk of flooding.

2.2 Environmental Issues

The environmental impact of developing in floodplains is of concern to the NRA for a number of reasons, including the following:

- The footprint of development destroys the ecological and archaeological value of the land.

Development can break up linear habitats such as river corridors.

- Development affects the natural beauty and amenity value of river corridors.
- Flood control works needed to facilitate development in floodplains can have a major impact on the aquatic environment.

If flood risks to land and property are not to be increased and the ecological value of rivers and floodplains is to be safeguarded, then rivers and their floodplains need to be protected from activities which can adversely affect them. The protection of rivers and floodplains from the physical effects of human activity is just one part of the total protection of the water environment.

2.3 Sustainable Development

The need to protect floodplains has not always been recognised, and as a consequence they have sometimes been subjected to inappropriate development. Rivers and their floodplains are finite resources which need to be managed in accordance with the principles of sustainable development.

The Department of Environment (DoE) has issued draft guidance on sustainable development and the NRA has established appropriate sustainability principles.

In relation to flood defence these are:-

- Effective defence for people and property against flooding from rivers and the sea should be provided together with adequate arrangements for flood forecasting and warning.
- Inappropriate development within floodplains should be resisted where such development would be at risk from flooding or may cause flooding elsewhere. Risk to life is of primary concern in relation to any development in areas at risk from flooding, but especially for residential development in

tidal and coastal locations.

- Flood defence is an intervention in natural processes and therefore a balance has to be struck between maintaining and supporting natural floodplains, and alleviating flood risk.
- Floodplains should be safeguarded to protect their role in allowing for the storage and free flow of flood waters.
- To minimise any increased surface water run-off, new development must be carefully located and designed. Where appropriate, source control measures should be incorporated into the scheme, which may also improve water quality.

2.4 Key Objectives

The objectives of the NRA's floodplain policies are:-

- that no development takes place which has an unacceptable risk of flooding, leading to danger to life, damage to property and wasteful expenditure on remedial works;
- that no development should create or exacerbate flooding elsewhere;
- that no development should take place which prejudices possible works to reduce flood risk;
- that no development should cause unacceptable detriment to the water environment.

These objectives are consistent with the NRA's overall objective of:

- maintaining the land drainage system and land drainage process for the benefit of agreed land and water uses in a balanced and sustainable way;
- seeking to restore natural floodplain areas;

- seeking to protect and improve the aquatic environment.

3 POWERS & RESPONSIBILITIES

3.1 Direct Powers and Responsibilities of the NRA

The NRA has limited direct powers to control activities which impact on the functions of floodplains through:-

- The Water Resources Act 1991
 - The Land Drainage Act 1991
- and
- NRA Byelaws
(Subject to local variation)

A summary of these powers is contained within Appendix 1. Generally these powers relate specifically to river channels and flood defences rather than floodplains themselves. Control of the latter largely rests with the planning authorities.

3.2 Local Authorities and Development Planning

The protection of floodplains from physical threats such as development is dependent on the powers exercised by local planning authorities. Planning authorities and not the NRA are responsible for protecting the flood defence interests of people whose property may be affected by development proposals. However, the NRA is a statutory consultee on development plans and many aspects of development control. The NRA's role is to advise planning authorities on the implications of development proposals on the water environment, including flood defence. The floodplain policies detailed in this document apply to the NRA's response to both development plan and individual development consultations

There will be flood defence implications for any property, (including buildings, land and assets of any kind), in private or public ownership which may be affected by the proposed development. It is incumbent upon the NRA to ensure that the

risks to other people's property are assessed for a range of flood events. This assessment should be carried out by the developer under the NRA's overall supervision.

Section 54A of the Town and Country Planning Act 1990 (inserted by the Planning and Compensation Act 1991) stresses the importance of development plans. The planning authority must have regard to the development plan and determination must be made in accordance with the plan unless material considerations indicate otherwise. This means that flood risk issues and floodplain protection objectives must be carefully considered at the development plan preparation stage, to ensure that such development is technically and environmentally viable. The same considerations should be applied in the preparation of Mineral and Waste Local Plans.

When such plans are being prepared, flood risk issues and floodplain protection policies may be included. The NRA has published "Guidance Notes for Local Planning Authorities on the Methods of Protecting the Water Environment through Development Plans". These have been effective in assisting local planning authorities in formulating suitable policies for encapsulation of NRA interests.

3.3 DoE Circular 30/92 - Development & Flood Risk

By virtue of its general supervisory duty over all matters related to flood defence, the NRA is charged by the Government to advise planning authorities on development and flood risk matters. DoE Circular 30/92, (Welsh Office Circular 68/92, MAFF Circular FD 1/92), "Development & Flood Risk", gives guidance on development and flood risk matters, the NRA's role in such matters and its relationship with planning authorities.

Circular 30/92 states :-

"The Government therefore looks to local authorities to use their planning powers to guide development away from areas that may be affected by flooding, and to restrict development that would increase the risk of flooding or

would interfere in the ability of the NRA or other bodies to carry out flood control works and maintenance."

It continues:-

"Where flood defence considerations arise, they should always be taken into account by local planning authorities in preparing development plans and in determining planning applications. Development permitted without regard to such consideration can lead to danger to life, damage to property and wasteful expenditure on remedial works whether on the development site or elsewhere".

3.4 Section 105(2) Surveys / Memorandum Of Understanding

The Government expects the NRA to ensure that planning authorities have sufficient information to enable them to make informed and sound planning decisions. This information may come from the NRA or it may have to be provided by the potential developer. The information should include an assessment of the impact of the development so that the planning authority can seek the views of those people whose land or property will be affected.

The NRA believes that these processes require a close working relationship between it and the planning authorities based on collaboration rather than simply on consultation. Effective floodplain protection must recognise the conflicts which exist between development and natural uses of the floodplain and seek to reconcile them in a balanced, sustainable way. This requires comprehensive floodplain land use planning which must take account of wider holistic floodplain management requirements.

To assist in this, the NRA proposes to produce up to date maps of floodplains as part of its survey duties under Section 105(2) of the Water Resources Act 1991. They will, of course, be subject to review if better flood data becomes available and should not replace close collaboration between planning authorities and the NRA.

In response to DoE Circular 30/92, the NRA and bodies representing the planning authorities have agreed a Memorandum of Understanding covering the provision of Flooding Survey data. Prior to the production of these up to date maps, the floodplain maps produced under Section 24 of the Water Act 1973, will continue to be used, together with unpublished maps and data in the NRA's possession.

3.5 Planning Guidance

Planning policy guidance notes are prepared by the Government to explain statutory provision and to provide guidance on the implementation of policies, as well as the operation of the planning system. PPG 12, for example, covers development plans and regional planning guidance, and PPG 20 deals with coastal planning matters.

The Government's Regional Planning Guidance (RPGs) also provide advice to local planning authorities in drawing up their development plans. They stress the importance of taking flooding into account in development plan policies. Considerable weight is placed on this guidance and the NRA has enjoyed success in having its interests reflected.

For example, RPG 9 "Regional Planning Guidance for the South East" draws attention to the risks of fluvial flooding:-

"Flooding may be an issue on the floodplains of major rivers, such as the River Thames, or at the confluence of rivers. Local authorities should, in consultation with the NRA, take land instability and flooding into account in the planning process, and should resist inappropriate development including raising land within floodplains, where such development would be at risk from flooding or may cause flooding elsewhere".

Similarly, RPG 8 "Regional Planning Guidance for the East Midlands Region" states the following:-

"...development plan policies should not permit inappropriate development in areas of risk from flooding or coastal erosion.

Environmental considerations should also be central to flood and coastal defence decision making. Natural river and coastal processes should only be disrupted by the construction of defence works where life or important natural or man-made assets are at risk".

Planning authorities along the coast should also have regard to any shoreline management plans produced by coastal defence groups, comprising local authorities, the NRA, and other bodies with coastal responsibilities. These plans will provide a strategic framework for planning sea defence and coastal protection works for specified lengths of the coast, taking account of natural coastal processes and human and other environmental influences and needs.

POLICY	COMMENT
<p>POLICY FD-P1</p> <p>The NRA will advise local authorities to use their planning powers to guide development away from areas that may be affected by flooding including tidal inundation.</p> <p>Note:- See Appendix 2 for definition of Development</p>	<p>The NRA will seek to persuade planning authorities initially through the Development Plan process, and then via Development Control, to guide development away from areas which are liable to flood.</p> <p>The NRA will seek to ensure that existing or agreed land uses, including river channel uses, are not put at risk by development.</p> <p>Where floodplain development cannot be avoided, then with the benefit of NRA advice, the Government expects planning authorities to ensure that it meets the requirements of DoE Circular 30/92</p> <p>If it is decided that development in such areas should be permitted for social or economic reasons, then appropriate flood protection and mitigation measures, including measures to restore floodplain or provide adequate storage and flood flow capacity, will be required to compensate for the impact of development. At sites suspected of being at unacceptable risk from flooding but for which adequate flood risk information is unavailable, developers will be required to carry out detailed technical investigations to evaluate the extent of the risk. In all cases, developers will be required to identify, implement and cover the costs of any necessary measures.</p> <p>The NRA will provide advice to the planning authority on the appropriate standard for any flood protection or mitigation measures.</p>

POLICY	COMMENT
<p>POLICY FD-P2</p> <p>The NRA will advise local authorities to use their planning powers to restrict development that would itself increase the risk of flooding to others.</p>	<p>New development can affect the flooding or drainage of nearby land. The owners of such land are entitled to be protected from any adverse effects.</p>

POLICY	COMMENT
<p>POLICY FD-P3</p> <p>The NRA will advise local authorities to use their planning powers to guide development away from areas that would prejudice existing flood defences or interfere with the ability of the NRA or other bodies to carry out flood control works and maintenance activities.</p>	<p>It is essential that development should not prejudice the integrity of flood defence works or the efficiency of drainage systems.</p>

POLICY	COMMENT
<p>POLICY FD-P4</p> <p>Development proposals on the floodplain of a main river which require consent under the NRA's flood defence legislation will not normally receive NRA consent if they are likely to affect adversely:</p> <ul style="list-style-type: none"> a) the land drainage system to the detriment of the land drainage process and associated land uses or water uses which are dependent upon that process; b) the management and operation of the land drainage system including flood defence or control works. c) the water environment <p>Note: Development in this context also includes works classified as permitted development under the Town & Country Planning General Development Order (GDO) 1988.</p>	<p>This policy complements NRA Policies FD-P1, FD-P2 and FD-P3, through use of the NRA's direct powers under the Water Resources Act 1991, the Land Drainage Act 1991, and Byelaws as appropriate.</p>

POLICY	COMMENT
<p>POLICY FD-P5</p> <p>The NRA will seek to retain and where necessary restore the effective flood flow conveyance and flood water storage capacities of floodplains.</p>	<p>Development on a floodplain will reduce its ability to convey and store flood waters. Progressively the cumulative detrimental effects of such losses will increase if development is not controlled</p> <p>The NRA believes that floodplain capacity should be retained or re-established whenever possible. It considers that continuous open floodplains are generally more sustainable, environmentally pleasing and beneficial than constrained channels which need artificial scour protection or raised flood defences which require major long term commitments for maintenance and renewal.</p> <p>Development on a floodplain will be opposed unless satisfactory measures can be undertaken by the developer to compensate for loss of floodplain flow and storage capacity.</p>

POLICY	COMMENT
<p>POLICY FD-P6</p> <p>The NRA will seek to persuade planning authorities to recognise the importance of the continuity of floodplains and river corridors for flood defence and environmental purposes. The NRA will seek to protect and, if appropriate, to regenerate floodplains through settlements whenever possible.</p>	<p>Rivers and floodplains through settlements not only provide for flood water conveyance and storage, but they also maintain the continuity of the river corridor and associated wildlife habitats. They provide areas for recreation or amenity and a soft landscape for relaxation and as a foil to the harder built environment.</p> <p>Whilst the NRA recognises that settlements which were once on either side of a floodplain at river crossings have historically coalesced, it believes that the continuity of a floodplain through settlements should now be given much higher priority in development planning.</p>

POLICY	COMMENT
<p>POLICY FD-P7</p> <p>The NRA will generally resist new development behind existing flood or sea defences unless those defences are of an appropriate standard for new development or unless the developer is prepared to protect the new development to the appropriate standard as part of the development.</p>	<p>NRA flood and sea defences have been constructed to protect existing property from flooding. In doing so, they may have also protected undeveloped floodplain land from flooding. It is sometimes assumed that such land can then be developed without reference to the NRA. The NRA is concerned that such assumptions should not be made because the standard of protection may be inappropriate for new development.</p> <p>Assessment of the standard of defences will take into account design level, asset condition, arrangements for maintenance, and the remaining life of the defences.</p> <p>Some NRA flood and sea defences are approaching the end of their design life and for economic reasons, they may not be renewed. The NRA is concerned that new development behind such defences should not take place without consultation and arrangements for ensuring that an appropriate standard of flood defence can be provided for the expected life of the new development.</p> <p>The NRA will provide advice to the planning authority on the appropriate standard for flood defences for new development.</p>

POLICY	COMMENT
<p>POLICY FD-P8</p> <p>The NRA will have regard to any possible effects on natural processes in advising planning authorities on floodplain development proposals.</p>	<p>It is Government policy that natural tidal and fluvial processes should be allowed to take their course. Accordingly, new development should not be permitted if it requires the provision of flood or sea defences which interfere with natural processes.</p>

POLICY	COMMENT
<p>POLICY FD-P9</p> <p>The NRA will advise planning authorities that developers should provide appropriate defences which are needed to facilitate development and make arrangements for their future maintenance.</p>	<p>Should there be an overriding case for the development of a floodplain contrary to NRA policies FD-P1 to FD-P8, then any new development which requires the provision of flood or sea defences must be funded by the developer and include provision for the maintenance or renewal of such defences.</p> <p>The NRA will provide advice to the planning authority on the appropriate standard for any flood protection or mitigation measures.</p>

5 PUTTING THE POLICY INTO PRACTICE

5.1 The Importance of Protection

The protection of floodplains and rivers from physical threats is important for the following reasons:

- It is fundamentally better to site new development in locations which are intrinsically safe from flooding rather than on floodplains which then require flood control works. These works add to the capital cost of development and need long term maintenance or renewal commitments. All of this can be avoided by adopting a precautionary approach, seeking to protect floodplains and drainage processes from the adverse impact of development.
- Modifications to the natural drainage process usually rely on a long term commitment to maintain them against the forces which seek to re-establish the natural process. In principle it is better and more sustainable to work with the natural land drainage process than against it.
- Floodplains are valuable wildlife corridors and often contain important landscape and archaeological features. These attributes can be at risk from physical threats, especially development. The NRA believes it is highly desirable, not only to protect these attributes, but to enhance them wherever possible.
- The recreational value of floodplains is important. Surveys of river use show people use river corridors for recreational pleasure and enjoyment.

The NRA believes that, wherever possible, development in floodplain areas should be avoided. Where, however, overriding justification for the development occurs, adequate mitigation and compensation measures must be clearly identified, agreed by the

planning authority in conjunction with the NRA, and implemented by the developer.

5.2 Danger to Life

Where danger to life might occur as a result of developing in a flood risk area, it is incumbent upon the NRA to draw the planning authorities' attention to the dangers and to comment upon the risks. It is then for the planning authority to decide if the risks are acceptable or not.

5.3 Development on Floodplains

5.3.1 Existing Development

At many locations where floodplains have been developed, flood defence measures have subsequently been necessary. These measures include flood walls or embankments, the raising of land above flood levels, and increasing the capacity of river channels to carry flood waters.

At some locations, redevelopment schemes may provide an opportunity for the restoration of the natural floodplain or at least the removal of obstructions to flood flow routes.

5.3.2 New Development

Where there is an overriding case for the development of a floodplain, then mitigation measures need to be taken to protect the new development. These may include the following where appropriate:-

- Reducing potential flood damage by raising property floor levels to be above an appropriate flood level.
- Protecting the proposed development by the provision of approved flood protection measures and providing for their future maintenance.

Total protection from flooding cannot be assured however, and development within a flood risk area will inevitably remain at some risk from flooding. Furthermore the combination of development and the flood defences may

increase the risk of flooding elsewhere, in which case further flood mitigation may be needed to reduce these effects.

Generally, the construction of buildings on "stilts" will be opposed by NRA. Where such structures have been constructed in the past it has proven impossible to ensure that the free passage of water beneath the buildings is maintained. In practice, the areas beneath the buildings are either used for the storage of materials or even sealed up to facilitate other uses, to the detriment of floodplain flood water flow and storage.

5.3.3 Impact of New Development on Existing Property

Property owners may expect that their property should not suffer any direct detriment as a result of new development or be subject to an unacceptable increase in flood risk.

It is not for the NRA to determine the standard of protection for "off-site" property owners. In the absence of legislation which set levels of protection for third parties against detrimental flood risk effects of development, as is the case with noise from new roads, the NRA considers that they should be set by democratically elected planning authorities or by the Secretary of State through the public inquiry processes.

The appropriate standard of protection to property elsewhere can be provided by:

- Avoiding the potential damage by ensuring the development causes minimal change to flood levels and risks elsewhere.
- Mitigating the potential damage by the provision of measures which will protect the existing property to current or agreed levels.
- Compensating for the damage by the payment of financial compensation.

5.3.4 Cumulative Effects

The NRA appreciates that individual developments are often very small compared with the extent of the floodplain so that the detrimental effects of each one may be difficult to quantify. However, the effects are cumulative and progressive encroachment of this sort ultimately results in significant adverse effects. Allowing one such development is likely to create a precedent for other developments in the vicinity.

5.4 Objections to Development Proposals

In the context of development planning, the role of the NRA will normally be to advise the local planning authority. Where a development proposal is considered to be inconsistent with the NRA's stated floodplain policies, the NRA will often "object" using one of its standard planning consultation response paragraphs, quoting the reasons for the objection. The response will, if appropriate, also contain advice as to whether planning conditions or obligations can overcome the NRA's "objection". Such advice will usually be taken into account, negating the need for the NRA to pursue its objection.

If the planning authority fail to take into account the NRA advice on flood defence considerations or accept proposals which appear to be contrary to the Government's advice contained in Circular 30/92 and other guidance, the NRA will formally pursue its objection.

APPENDIX 1 FLOOD DEFENCE LEGISLATION

WATER RESOURCES ACT 1991 / LAND DRAINAGE ACT 1991

Flood Defence Powers and Duties

The NRA has a duty under the Water Resources Act 1991 (WRA 1991), to exercise a general supervision over all matters related to flood defence (which includes land drainage) throughout England and Wales.

The NRA's powers and duties under the Act largely relate to main rivers and to sea defence work. Local authorities have certain statutory powers and duties relating to other watercourses, which are known as ordinary watercourses. In discharging its functions, the NRA is concerned with:

- the natural catchment area of watercourses and rivers
- the channels occupied by rivers and watercourses during times of normal flow
- floodplains and washlands which accommodate water during periods of flood and
- coastal floodplains, that is land risk from flooding from the sea or tidal lengths of rivers, whether or not protected by sea defences.

Section 165 WRA 1991, gives the Authority the permissive power to construct new works and to undertake improvement and maintenance work on, or in connection with, main rivers and sea defences. Sea defences are constructed to alleviate flooding of land by the sea. The NRA has permissive powers to carry out sea defence works except where defences are privately or local authority owned.

Coast protection, carried out by Maritime District Councils, is the protection of land from erosion or encroachment by the sea. The term

"coastal defence" embraces both.

Under Section 109 and 110 WRA 1991, the NRA's consent is required for structures in over or under main rivers and under Section 23 of the Land Drainage Act 1991 (LDA 1991), the Authority's consent is required for obstructions in watercourses. Section 25 LDA 1991 empowers the NRA to require works to be undertaken to maintain the flow of watercourses. The NRA's Land Drainage Byelaws control certain other limited activities in relation to main rivers and their floodplain. The Authority is empowered to take enforcement action for unconsented works which are deemed to cause a nuisance.

Environmental Duties

Section 16 of the WRA 1991 sets out the NRA's general environmental and recreational duties. These duties are to be applied when the Authority exercises any of its powers. Their application must be consistent with the purpose of the power to which it is applied. Similar duties are placed on other drainage authorities through the Land Drainage Act 1994.

Amongst other things, the duties are:

- to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest.
- to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural or historic interest.

Section 2 of the WRA 1991 imposes a duty to promote certain environmental issues in connection with water and land use.

These issues are:

- the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and of land associated with such waters:

- the conservation of flora and fauna which are dependant on an aquatic environment, and
- the use of such waters and land for recreational purposes.

It is of note that this duty is in relation to water and land use whereas the Section 16 WRA 1991 duty applies to the exercising of powers only.

NRA Byelaws

Schedule 25, Section 5 WRA 1991 provides for the NRA to make such Byelaws in relation to any particular locality or localities as it considers necessary for securing the efficient working of any drainage system including the proper defence of any land against sea or tidal water.

NRA Flood Defences

By virtue of WRA 1991 and its Byelaws, the NRA has powers to construct, improve or maintain land drainage and flood defence systems. Generally such systems have been built or maintained to protect existing development and to facilitate agricultural production. Floodplains with tidal or fluvial flood defences or land drainage systems are highly vulnerable to development which may jeopardise the integrity of these defences/systems. Such things are of direct interest to the NRA.

The objectives of this direct role are:

- to safeguard existing flood defence assets;
- to safeguard the NRA's ability to maintain main rivers and its flood defence assets;
- to safeguard the NRA's ability to provide new works;
- to ensure that new development meets land drainage consent requirements;
- to avoid the need for post development

remedial flood defence works;

- to safeguard the aquatic environment.

The NRA expects planning authorities to assist them by ensuring that new development does not jeopardise the NRA's direct flood defence interests.

APPENDIX 2 DEFINITIONS

DEVELOPMENT

In accordance with the definition given in Section 55 of the Town & Country Planning Act 1990, development means the carrying out of building, engineering, mining or other operations, in on over or under land or the making of any material change in use of any buildings or other land.

FLOODPLAIN (River and Coastal)

The following definitions of floodplain have been adopted in accordance with DoE Circular 30/92 (Welsh Office Circular 68/92, MAFF Circular FD 1/92) - Development and Flood Risk:-

"All land adjacent to a watercourse over which water flows in times of flood or would flow but for the presence of flood defences where they exist. The limits of floodplain are defined by the peak water level of an appropriate return period event on the watercourse or at the coast. On rivers this will normally be the greater of the 1 in 100 year return period flood or the highest known water level. In coastal areas the 1 in 200 year return period flood or the highest known flood will be used. In both instances, where a flood defence exists which protects to a greater standard than those defined, then the floodplain is the area defended to the design water level".

MAIN RIVER

Main river means all watercourses shown as such on the statutory main river maps held by NRA and the Ministry of Agriculture, Fisheries and Food, and can include any structure or appliance for controlling or regulating the flow of water into, in or out of the channel.

ORDINARY WATERCOURSE

An Ordinary Watercourse is one which does not form part of a main river.

PROPERTY

In this context, property may be anything which is owned by a person or an organisation. It may be a building, farmland, conservation area, flood defence, railway, road, culvert, fishery etc.

RETURN PERIOD

Statistical return periods relate to the long term average time interval between events of a particular magnitude. The 1 in 100 year return period flood has a one percent chance of occurring in any one year. ie. The odds of it happening are one hundred to one.

It must be emphasised that return periods are averages. It should not be assumed that it will be exactly 100 years for example before a 1 in 100 year event reoccurs. It is statistically possible for such events to occur in successive years or even more than once in one year. Equally, such events may be several hundred years apart.

SUSTAINABLE DEVELOPMENT

Sustainable development is defined in the 1987 Report of the World Commission on Environment and Development as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

WASHLANDS

Area of floodplain where water is stored in time of flood. Such an area may have its effectiveness enhanced by the provision of structures to control the amount of water stored and the timing of its release to alleviate peak flood flows in areas downstream.