

Coastal defence and shoreline management

This briefing paper outlines the legislative and policy framework relating to coastal defence and shoreline management in Wales. These are important concerns for Wales, particularly given recent estimates that suggest flood damage from tidal flooding could increase by over 200% in Wales over the next 50 years, and the prevalence of these incidents in areas protected by complex coastal defence networks.

In the context of this paper ‘coastal defence’ includes both *coast protection* (protection of land and property from erosion or encroachment by the sea), and *sea and tidal defence* in estuaries (prevention of temporary flooding events over land), although it is recognised that these terms often have specific meanings under different Acts of Parliament. Shoreline management is a recent term conveying ‘a long term, strategic approach to managing risk from land instability, coastal erosion and tidal flooding’, and is generally taken to include non-statutory policy, guidance and planning efforts at national and sub-national levels.

International and European Legislation

Compared with certain other areas of environmental management, there is a relatively limited international legal and policy dimension relating to coastal defence and shoreline management. There is, however, a plethora of international prescriptions and guidance relating to Integrated Coastal Management (including Agenda 21, Chapter 17; the 1993 World Bank Guidelines), which makes reference to coastal erosion and flooding management. There is also an increasing legal and policy framework relating to climate change and sea-level rise, which is of relevance to the discussion of coastal defence and shoreline management. Within this, some legal frameworks and guidelines (e.g. the 1994 Framework Convention on Climate Change) suggest that the intertwined relationships between activities and environments in the coastal zone require an integrated approach to tackling specific issues, notably sea-level rise.

There is no specific legislation at a European level relating to coastal engineering *per se.*, although the Water Framework Directive (2000/60/EC) provides an opportunity for a fresh approach to flood management based on integrated river basin and catchment management plansⁱ. Other European directives, including the Habitats (92/43/EEC) and Birds (79/409/EEC) Directives may also have implications for coastal defence management. Furthermore, there is a raft of Council Decisions related to civil protection of relevance, which establish action plans to be undertaken in close co-operation with national, regional and local authorities (LAs).

UK Legislation and Regulatory System

There is an historic common law duty on the Crown to protect the coast and a statutory body assuming the Crown's duty may also take such actionⁱⁱ. Additionally, the right for landowners to protect their property is a longstanding legal principleⁱⁱⁱ. However, such individuals do not have to exercise these rights and landowners constructing sea-walls for their own benefit are not obliged to maintain these to protect others. Nevertheless, recent case law has shown that an occupier of coastal land owes a measured duty of care at common law in this respect.

Box 1 The role of the State in relation to coastal defence

Over the last century the State has assumed a more significant role related to coastal defence, including the:

- Provision of publicly funded coastal defence works to protect coastal areas from erosion or flooding;
- Funding and co-ordinating of responses to major flooding and erosion events;
- Control of development in areas perceived at risk from flooding and erosion, and the minimisation of impacts of new developments on coastal flooding risks.

(McInnes, 2003^{iv})

Within the evolution of relevant statute law, a more holistic view of coastal defence has been assumed, including:

- Consenting arrangements to balance risk and interests;
- Consultation between key interest groups;
- Provisions for nature conservation and landscape protection.

(McInnes, 2003; from Lee, 1995^v)

Despite the inter-relation of physical and ecological coastal systems and the convergence of coastal defence

policy and administration at national levels, the legislation relating to coastal defence remains divided into two separate legal systems relating to:

- Coast protection: protection from erosion and permanent occupation of the land by sea, where the primary legislation is the Coast Protection Act 1949 (CPA); and
- Flood defence: relating to temporary sea and tidal flooding incidents, where the primary Acts are the Water Resources Act 1991 and the Land Drainage Act 1991.

However, a range of primary instruments impose common conditions on coastal defence options, with requirements for a number of licences, permissions and leases for coast protection and sea defence works (including beach nourishment and other 'soft-engineering' solutions).

Box 2 Licences, permissions and leases required for coastal defence works

- Planning permission is required under the **Town and Country Planning Act 1990** for development above low water mark.
- Under s.34 of the **Coast Protection Act 1949** (CPA) (as amended by s.36 of the Merchant Shipping Act 1988), the consent of the Secretary of State for Environment, Food and Rural Affairs is required for:
 - The construction, alteration or improvement of any works on, under or over any part of the seashore lying below the level of mean high water springs (MHWS);
 - The deposit of any object or materials below MHWS;
 - The removal of any object or materials from the seashore below the level of MHWS.
- A lease from the **Crown Estate Commissioners** for works lying over the seabed.
- Under the **Food and Environment Protection Act 1985 Part II** (FEPA), a licence is required from WAG for works involving the deposit of any articles or materials in the sea or under the seabed, either temporarily or permanently.
- An *appropriate assessment* is required under the **Conservation (Natural Habitats &c.) Regulations 1994** for works within SACs, or likely to impact upon the integrity of such sites.
- An EIA is required under the **Town and Country Planning (Environmental Impact Assessment) (England & Wales) Regulations 1999** for works (including sea defence works) combating erosion and capable of altering the coast.

Coast Protection

The CPA 1949 aims to provide a co-ordinated, centrally-regulated approach to coastal protection works supported by Government grant aid. Under the Act such works relate to the construction, alteration, improvement, repair, maintenance, demolition or removal of works for the purpose of protecting land against erosion or encroachment by the sea^{vi}. The Act entrusts responsibility for coast protection work to "Coast Protection Authorities" (nominally maritime district or unitary councils), who are given powers to perform such duties in connection with the protection of land within the limits of their jurisdiction imposed by the Act (s.1). It should be noted that the CPA is enabling legislation and does not carry with it any requirement, although a Coast Protection Authority owes a common law duty of care in performing its functions. It should also be noted that land may be compulsorily acquired to enable the Coast Protection Authority to carry out work or repair^{vii}. The Act does not apply to works in non-tidal inland waters and other exemptions provided under s.35 of the Act.

Under s.34 of the CPA (as amended by s.36 of the Merchant Shipping Act 1988), the consent of the Secretary of State for Environment, Food and Rural

Affairs is required for works causing physical changes or obstructions resulting in adverse effects on navigation below MHWS. The introduction of environmental regulations extended s.34 such that account must additionally be taken of potential environmental effects. A s.34 consent does no more than indicate that, to the extent the works may represent an obstruction or danger to navigation, they may be undertaken in accordance with any conditions laid down in the Secretary of State's consent to minimise that obstruction or danger.

A CPA consent is normally valid for three years. However, in order that applicants can make a joint application for a FEPA licence, the duration of a consent may be amended so as to bring the expiry dates of both consents into alignment^{viii}.

Flood Defence Works

The Water Resources Act 1991 and the Land Drainage Act 1991 (amended by the Land Drainage Act 1994) provide the enabling primary legislation for sea defence works for the control of flooding. The term 'drainage' in the Water Resources Act 1991 and the Land Drainage Act 1991 is defined as "defence against water, including sea water; irrigation and warping", and therefore covers both coastal and inland flood defence. The Environment Act 1995 (s.100) amended this definition to include the management of water levels as part of the roles of the Environment Agency, Internal Drainage Boards (IDBs) and LAs. It should also be noted that the Water Resources Act 1991 provides for drainage works for the purpose of defence against sea water or tidal water^{ix}.

Important provisions are also contained in other primary legislation, including that which is primarily concerned with environmental matters (e.g. the Environment Act 1995), public health issues (e.g. the Public Health Acts of 1936 and 1961), and local government functions and responsibilities (e.g. the Local Government Act 1972 and the Local Government (Wales) Act 1994). The most recent Water Act 2003, though dealing largely with water resource issues, includes a number of important provisions amending the regulatory system relating to flood defence organisation and funding. Streamlined arrangements for flood defence organisation and provisions for block grants for flood defence work are provided for, informed by Defra and NAW's recent Flood and Coastal Defence Funding Review (FCDFR)^x.

Environmental Impact Assessment (EIA)

Coast protection works (other than the maintenance or reconstruction of existing works) fall within schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 and may require an EIA, depending largely on the nature of the particular site and the likely wider impacts on natural coastal processes. Where coast protection works are likely to have a significant effect on a Natura 2000 site, an "appropriate assessment" will be required under the Conservation (Natural Habitats &c.) Regulations 1994. Planning permission is also required for new coast protection works and to improve existing works, and local planning authorities (LPAs) will need to determine whether EIA is required under planning regulations.

In addition, land drainage improvements permitted under the Town and Country Planning (General Permitted Development) Order 1995, as amended, may require an EIA under the Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999, which prohibit drainage bodies from undertaking such projects unless specific conditions are met. Flood risk may also be a material consideration for certain developments for which an Environmental Statement is required, particularly if the impact of development on flood risk will affect designated conservation sites or compromise shoreline management options or Biodiversity Action Plans.

Non-Statutory Initiatives

There is a plethora of national policy and local non-statutory initiatives, complementing and bridging sectoral regulatory mechanisms relating to coastal defence. Since publication of the *Strategy for Flood and Coastal Defence for England and Wales*^{xi} in the early 1990's, guidance for coastal defence authorities has been developed and revised relating to shoreline management aims and objectives, approaches and procedures. For example, the recent WAG Technical Advice Note (TAN) on *Development and Flood Risk* recognises that "the preservation, wherever possible, of natural flood defence structures, for example sand dunes, should always be an option for consideration and integrated with the delivery of other benefits in the context of Integrated Coastal Zone Management (ICZM)"^{xii}.

TAN 15: Development and Flood Risk

A revised version of TAN 15 was published in July 2004. The TAN provides technical guidance which supplements the policy set out in Planning Policy Wales in relation to development and flooding. It provides new advice on development and flood risk, conforming with sustainability principles and establishes a precautionary framework to guide planning decisions, within which risks from coastal and river flooding and run-off from development can be assessed. It also gives guidance to planning authorities on how to approach Unitary Development Plan preparation and decision-making in the context of the suggested new methodology.

Shoreline Management Plans

Shoreline Management Plans (SMPs) are prepared by regional Coastal Groups (comprising primarily of maritime LAs, EA, and other statutory consultees such as CCW), operating within coastal sediment cells. SMPs aim to provide a strategic framework for decisions on coastal defence management, not only based on natural coastal processes, but also on other environmental and human issues and needs^{xiii}. Most groups aim to develop compatible coastal defence management policies within and across sediment or sub-sediment cells, to eliminate the risk of defence schemes undertaken by one authority adversely affecting coterminous authorities. The first generation of SMPs for the Welsh coastline is complete, and work will soon begin to update these plans.

Catchment Flood Management Plans

A Catchment Flood Management Plan (CFMP) is a strategic planning tool through which the EA will seek to work with other key decision-makers within a river

catchment to identify and agree policies for sustainable flood risk management. Recent guidelines have been produced by the EA in collaboration with Defra and WAG to inform practitioners of the concept and scope of CFMPs and to provide guidance on their production and development^{xiv}.

It is anticipated that CFMPs will provide the same level of strategic guidance as SMPs, in that CFMPs will not provide detailed management solutions for flooding in a catchment, but will provide broad policies for long-term (50-100 years) management of flood risk. CFMPs will consider the outputs from the Government's Foresight Project on Flood and Coastal Defence in the UK over the period 2030 to 2100 when assessing the future flood risk in England and Wales. With regard to the wider planning framework, CFMPs will support the implementation of the EU Water Framework Directive in the UK (through integrated River Basin Management Planning), and support other relevant statutory / non-statutory plans^{xv}.

Other Relevant Plans and Programmes

Other plans and programmes that may be of relevance to shoreline management and flood defence include:

- **Water Level Management Plans (WLMPs)**, which set out water level management requirements in a defined floodplain area (usually a SSSI). Undertaken by the relevant operating authority.
- **River Basin Management Plans** as required under Art.13 of the EC Water Framework Directive (2000/60/EC), which set out the objectives for the water bodies within the river basin district and explain in broad terms how they are to be achieved.
- **Catchment Abstraction Management Plans (CAMS)**, which are strategies for water resource management at a local level. Eighteen are under development in Wales by the EA and they will make information on water resources and licensing practice available to the public to provide a consistent approach to local water resources management.
- **Coastal Habitat Management Plans (ChaMPs)**, which address the long-term cumulative implications of flood and coastal defence schemes for habitat change and, where necessary, recommend modifications to these strategies and schemes to prevent further losses or identify habitat restoration works to compensate for unavoidable losses. The actions will be delivered through SMPs. Defra are currently reviewing the lessons learnt from seven pilot schemes in England and producing revised guidance.
- **Sustainable Drainage Systems**, which are a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques^{xvi}.

Other plans that may be relevant include, Biodiversity Action Plans (BAPs), nature conservation management plans (including European protected sites), Integrated Coastal Zone Management (ICZM) Plans, Local Agenda 21 plans, and management plans for National Parks and other protected sites.

Administration

Coast protection

The NAW has overall policy responsibility for coastal defence, including coast protection. However, statutory powers to undertake coast protection works are conferred on Coast Protection Authorities (maritime district or unitary authorities) by the CPA 1949. These operating authorities have powers to perform duties in connection with protection of land and property within their area and, as part of this, they review and inspect the condition of defences and monitor erosion rates^{xvii}.

The functions of Coast Protection Authorities are confined to the open coast, and jurisdictional limits are defined across river mouths. Landowners and other bodies may undertake coast protection works only after consultation with the relevant CPA, although harbour authorities have some exemptions from this^{xviii}. Coast Protection Authorities are also required to consult over capital schemes (excluding emergency works) with a wide range of bodies, including the EA, CCW, neighbouring coastal authorities, harbour, conservancy and navigation authorities and sea fisheries committees (SFC).

The CPA 1949 also included provision for the establishment of Coast Protection Boards (CPB) consisting of the Coast Protection Authority, EA, IDB, harbour authorities, SFCs, CCW, Crown Estate and other bodies with coastal powers or duties. However, none have been established to date.

Flood defence

The Assembly has overall responsibility for flood defence in Wales, although the delivery of flood defence services is the responsibility of the EA (Wales), LAs and IDBs. Inspection, enforcement and control activities come under the same legal regime in Wales as in England, with the EA, Coast Protection Authorities, CEFAS and the Sea Fisheries Inspectorate playing key roles. Other bodies contribute to decision-making by consultation on specific works.

Under the Environment Act 1995, all responsibilities for flood defence, as stated in the Land Drainage Act 1991 and the Water Resources Act 1991, were transferred to the EA, which has wide-ranging responsibilities and powers to oversee all coastal, riverine and estuarine flood defence matters. Elaboration of the EA's wide ranging supervisory duty (box 3) has been made in the context of the current legislative framework. It has operational powers to build and maintain flood defences on main rivers and sea defence works and has powers to establish flood warning schemes. It also advises LAs on flood defence matters, and provides general supervision over all drainage matters. The Agency has key roles to play in relation to development and flooding, and has statutory powers to control the erection of structures in, over or under main rivers. The EA also has a duty to 'further conservation' in the exercise of all its duties. It should be noted, however, that all the EA's statutory duties are limited.

The EA exercises its flood defence policy through Flood Defence Committees. The Welsh Regional Flood Defence Committee covers most of Wales and includes the Wye and Dee catchments (parts of which are within England), but excludes part of the upper Severn catchment.

However, in practice, the real responsibilities of the Welsh RFDC have been exercised through Local Flood Defence Committees (LFDC), with the Welsh RFDC acting as an umbrella body. These LFDCs have been responsible for determining the programme of maintenance and capital works carried out by the EA. This network of LFDCs is not replicated across England, although the Water Act 2003, as described below, enables a move from the present two-tier structure of FDCs to a single tier structure.

LAs have permissive powers to carry out flood defence works on non-main rivers outside Internal Drainage Districts, which come under the jurisdiction of IDBs. LAs also have powers to undertake coastal defence measures, including both sea defence to prevent flooding and to protect from coastal erosion. IDBs are local committees that operate predominantly in low-lying areas with specialist flood defence needs.

Box 3 The supervisory duty of the Environment Agency

- Assessment of the condition of coastal defences;
- Assessment of flood risk associated with coastal defences;
- Achievement of high level targets;
- Emergency response to flooding incidents;
- Awareness of flood risk in the community
- Assessment of future development proposals with the potential to impact on flood risk
- Regulation of other bodies; and
- Application of conservation duty and environmental impact.

Recent changes in flood and coastal defence arrangements

The landmark *Strategy for Flood and Coastal Defence in England and Wales*^{xxix} was published by the former Ministry of Agriculture, Fisheries and Food (MAFF) and the Welsh Office in 1993. In summer 2003 the Government decided to review flood and coastal erosion risk management policy for England in the light of drivers for change, including the latest predictions on climate change, and the results of the FCDFR for England and Wales. To this end, Defra’s Flood Management Strategy Unit is currently co-ordinating a strategic longer term look across all Government policies as they affect flood risk, and envisages launching a new strategy for flood and coastal erosion risk management for England in early 2005^{xx}.

WAG consulted on the findings of the FCDFR in September 2003, and issued a document setting out the general principles and options for the future arrangements for the delivery of the service in Wales^{xxi}. The consultation sought views on two models for flood defence committee (FDC) structures and associated funding arrangements for Wales. The support for a single FDC was split, although this option was favoured by the Countryside Council for Wales (CCW) and the EA (who indicated its support for this option was based upon the linkage of the option to block grant for both capital and revenue work). The LAs, Welsh Local Government Association (WLGA), and the IDBs were firmly against the single committee on the grounds of loss of local knowledge, accountability and input. The concept of three regional committees in Wales based on catchment boundaries was the preferred option for the majority of

respondents, although there was recognition that the strategic role of a single committee would not be available^{xxii}.

Box 4 Conclusions of the Flood and Coastal Defence Funding Review

- Based on the responses to the consultation, consideration of legislative processes and the findings of the FCDFR, the WAG concluded the following broad principles:
- The flood defence service should continue to be funded primarily by the WAG, both directly and indirectly via its support for LAs.
 - The EA should continue to be the prime body in Wales with responsibility for delivering flood defence services in Wales.
 - There should be no change in responsibility for coast protection service in Wales with this service remaining the responsibility of the maritime LAs.
- WAG also agreed the following specific changes which impact largely on the EA and its FDCs:
- A move from the two-tier structure of FDCs to a single tier committee structure.
 - A move to Assembly Government block grant to be paid to the EA for its flood defence capital works and, dependent upon the chosen committee structure, its revenue works.
 - LAs and IDBs should continue to have flood defence and land drainage responsibilities.

Issues Arising

Even with the rationalisation of coastal defence policy, the division of responsibilities between coast protection, sea defence and development planning, particularly at the lower levels of the organisational hierarchy, have perpetuated narrow, sectoral and non-innovative approaches to coastal risk management^{xxiii}. It has also been suggested that this division is a considerable impediment to managed realignment practice^{xxiv}. However, separating coastal defence policy from land flood defence policy would arguably create another artificial boundary between coastal and inland flood defence.

Although recent policy developments have addressed the interface between coastal defence and the statutory planning system, the co-ordination between shoreline management / coastal defence strategies and forward planning / development control at local levels is often less than ideal^{xxv}. Consultation with the EA and other operating authorities on planning applications in areas of coastal risk or on applications affecting physical coastal processes and defence measures, is discretionary rather than mandatory although this is strongly recommended in Government advice (TAN 15).

Despite the recent clarification of the EA’s environmental duties and the introduction of High Level Targets for flood and coastal defence, there is arguably still room for greater clarification of the extent to which operating authorities should fully integrate conservation measures into their respective coastal defence programmes^{xxvi}. Furthermore, it has been argued that further new legislation is required so that the marine environment is considered alongside other coastal defence priorities and that a ‘no net loss’ scenario should be adopted by regulatory authorities^{xxvii}. It is also now widely recognised that the CPA 1949 needs revision to take account of environmental and conservation aspects. Furthermore, it

has been argued that EIAs should become mandatory for coast protection works to safeguard coastal habitats and fulfil biodiversity commitments.

There is a considerable body of opinion in favour of upgrading the status of SMPs so that they play a greater role in the statutory planning process. The possibility of making SMPs supplementary planning guidance could bring benefits of wider consultation, and enhanced co-ordination between LA forward planning and engineering teams. However, this could induce negative time and cost implications as well as a possible loss of flexibility. A minimum requirement should be inclusion of land use policies from the SMP in the relevant development plans.

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