

COASTAL DEFENCES AND NEW FOREST DISTRICT COUNCIL

Coast protection works, that is works to prevent erosion and encroachment by the sea, are carried out under the Coast Protection Act 1949, which applies to the coastline of Great Britain. Powers to carry out works are mainly vested in 88 maritime district councils in England, 22 in Wales and 11 regional and island councils in Scotland.

The coastline of England, for coast protection purposes is 2981km long, and approximately 570km (or about 20%) is protected against erosion. Many of these defences have been built privately and are maintained by "private" frontagers, including government departments, nationalized industries, county councils, port and harbour authorities, commercial organizations and private individuals.

In addition, some 560km of coastline are protected against flooding by walls or banks maintained by water authorities using powers conferred by the Land Drainage Act 1976. Some 40% of this length lies within the Anglian Water Authority area, 25% within Southern Water Authority area, and 17% within North West Water Authority area. Substantial lengths of flood banks also protect MOD property.

For the purposes of the operation of the Coast Protection Act the New Forest District Council (NFDC) has 50km of coastline which includes approximately 9km of frontages on the Beaulieu and Lymington Rivers. The shoreline on the upper reaches of the Lymington River, Beaulieu River and Southampton Water are not regarded as coastline by the Act.

LEGAL FRAMEWORK

The Act establishes maritime district councils as "coast protection authorities" and vests in them general powers to carry out "coast protection work", which is defined as: "Any work of construction, alteration, improvement, repair, maintenance, demolition or removal for the purpose of the protection of any land". Protection is defined as "protection against erosion or encroachment by the sea". The Act also lays down the limits of its application by defining excluded waters. It does this by defining boundaries, mainly across rivers, estuaries, harbours and the like above which the Act does not apply.

The procedures for carrying out new coast protection works include:

Advertise the proposals in one or more local newspapers and if the costs are estimated to exceed £50,000 the London Gazette.

Notify water authority or local drainage authority of proposals

Notify neighbouring coast protection authorities, County Council and other affected bodies

Obtain planning approval

Obtain agreement of owner of site if council is not the owner

Obtain a licence under the Food and Environmental Protection Act 1985 for element of works below high water mark

Notify the Department of Transport and the Regions

An application has to be made to the Department of Environment, Food and Rural Affairs (DEFRA) (formerly MAFF) for approval. The application includes: Details of the proposals, engineer's report, cost:benefit analysis, and evidence that the appropriate procedures detailed above have been carried out.

There is a right of objection to the District Council's proposals. If appropriate, the Minister will either order a local enquiry to be held or give the objector(s) an opportunity of being heard by an appointed person. Special provisions involving joint ministerial decisions apply where an objection is made by a water authority or certain other public bodies.

Section 5 of the Act is used in emergencies. This gives coast protection authorities powers to waive most of the normal procedures, if they consider that the work is urgently needed, and is normally used to deal with severe storm damage. Approval for such works and grant aid can therefore be sought retrospectively.

Works proposed by private land owners require the approval of the District Council; power is available to require private landowners to maintain coast protection works on their land. The Council's role also extends beyond its boundaries, in that there is a need to assess consultations made by adjacent coast protection authorities in connection with their proposals.

Works of repair and maintenance are carried out by the District Council. Prior approval is not required, nor is planning permission. However, the approval of other affected bodies may be required. These could include the DETR, The Crown Estate, Water authorities, adjacent landowners and maritime councils.

FINANCE

Approval by DEFRA normally carried with it a government grant towards the costs. It is current government policy to pay grant on approved capital works. Subject to a minimum scheme cost, below which no grant is payable, authorities can expect to receive between 24 and 70 percent of the cost of the scheme.

Where DEFRA makes a grant towards a scheme, the County Council is also required by the act to make a contribution to the cost of the scheme, the amount being agreed by the District and County Councils. In practice it is usual for the County Council to contribute 50% of the balance of the cost after deduction of the government grant.

CHRISTCHURCH BAY

Christchurch Bay is a unique feature from both the geological and hydrographical points of view. The extent of the bay is defined by the two headlands, Hengistbury head in the west and Hurst Castle in the east. The District Council's major protection works are located in this bay at Barton on Sea and Milford on Sea.

WINDS AND WAVES

The prevailing wind and hence the dominant wave action is from the south west. The direction of maximum fetch for exposure is also from the south west; the nearest land in this direction is the coast of South America.

Other fetches for the bay are unusually short since it is sheltered to the south east by the Isle of Wight and to the South, France. When wind is from the south-south east long swells do not develop and waves are short and flat.

Some protection from the full force of the south west waves is provided by the English Channel; the South Coast of England does not receive the long Atlantic swells experienced on the West Coast.

The tidal range in Christchurch Bay is approximately 2m and mean high water springs is approximately 0.7m above ordnance datum Newlyn.

OFFSHORE TOPOGRAPHY

In the west Christchurch Ledge extends for 5km south east from Hengistbury Head at a depth of 5-10m below OD. The ledge gives some protection from waves from west-south west, south west and south-south west.

In the east, the Shingles/Dolphin Bank extends 8km south-south west from Hurst at 0.3m below OD. It is believed to be formed from shingle removed from Hurst Spit and sediments from the Solent. The Shingles Bank protects Barton on Sea from the full effects of large waves generated over the shorter distance from the south east.

Waves greater than 4m deep become unstable in crossing either bank and tend to break. Smaller waves are shortened and steepened.

In the 2.5km between the ends of Christchurch Ledge and the Shingle Bank, the sea bed extends to 15-20 metres below OD. The full force of waves therefore approaches Barton on Sea between south-south west and south, over an arc of approximately 20 degrees, and Milford on Sea directly from the south west. Refraction of the waves as they pass through the gap tends to reduce their power, although focusing of wave energy can lead to localized severe attack, especially at Barton on Sea. The immediate offshore gradients are approximately as follows:

Barton on Sea 1:120

Hordle Cliff 1:177

Hurst Spit 1:40

The littoral drift of material in the bay is generally west to east.

GEOLOGY

The coastline is formed of tertiary beds – sands and clays – which are young in geological terms and tend to be soft not having undergone the great pressures that form

the hard, well cemented rocks as in the west of the country. The age of the tertiary beds is 45 to 38 million years.

Between Chewton Bunny and Milford there are three main types of cliff outcrop; clay in the west, sand and gravel above clay in the centre and sand and gravel in the east. The strata start to dip towards the east.

At Barton on Sea the cliffs consist of plateau gravel 4.5 – 6m thick, overlaying Barton Beds approximately 60 metres thick which comprise sands (24 metres) over clay; 30 metres are exposed under normal conditions. Ground water in the sand and gravels is contained by the underlying clay. The sands can become unstable and, especially in winter, the clays soften. In the Barton area the boundary between sands and clays is part way up the cliff and the methods of dealing with ground water are therefore critical to any coastal defence measures. The objectives must be to keep the quantity of ground water as low as possible and to intercept any flow before it discharges, uncontrolled from the face of the cliff.

At Hordle, the cliffs are approximately 15m high and consist solely of sands and gravel, the clay being well below datum. The cliff peters out just west of Milford on Sea.

EXISTING DEFENCES

Of a total length of coastline of 50km about 24.1km has some form of protection and of this, 4.7km is maintained by the District Council. Historically, the protection of the coastline in the NFDC area has relied upon a regular supply of material being transported along the shore by natural forces (littoral drift). The precise mechanisms are difficult to define, especially in relation to the circulation of material within Christchurch Bay, but the installation of coastal defence works to the west in Christchurch and Bournemouth has had a significant effect in reducing the amount of material available. The most serious effect was probably the severe depletion of Hurst Spit and the consequent increase in the incidence of breaching. Beach nourishment now forms part of most schemes in the New Forest.

NFDC is directly responsible for existing coastal defence measures at:
Barton on Sea, Milford on Sea, Hurst Spit, Calshot.