

# Approaches to coastal & estuarine flood defence & management



## Flood defence policies

The Environment Agency's flood defence policy is to reduce the risk to people and property from flooding, be it by rivers or the sea. The powers bestowed upon us to build, improve and maintain defences, as Operating Authorities are permissive. This means that works will only be carried out where they are deemed to be economically, environmentally and hydrodynamically sustainable.

In the Anglian region the Environment Agency's flood defence team have to contend with a wide variety of estuarine and coastal issues. In the region varying coastlines exist from the sand dunes of north Norfolk, to the shingle beaches and spits of Suffolk and finally the saltmarshes and mud flats of Essex.

The main policy options for flood defence are as follows:

- Hold the Line  
This flood defence option involves, through intervention, holding the existing line of defence where it is, which may

involve maintaining, sustaining or improving the defence. Due to sea level rise it may demand substantial modifications or reconstruction.

- Managed Realignment  
Breach a defence allowing tidal inundation to high land or build a newly aligned defence landwards of the original.
- Advance the Line  
Reclamation of the intertidal / subtidal foreshore seaward of the defence.
- Limited Intervention  
This flood defence approach involves not undertaking any work regarding maintenance and repair to the existing line of defence unless categorised as emergency works for health and safety reasons.
- No Active Intervention

## Policy methods

Given the current and predicted rates of sea level rise for this coast it has become increasingly difficult to justify building walls higher and higher to keep the sea out. The Environment Agency is therefore endeavouring to find more sustainable approaches to flood defence.

## Managed realignment

Managed realignment, foreshore recharge and regulated tidal exchange are being put forward as additional coastal management options in addition to traditional methods to try and help solve some of the increasing pressures on our coasts and estuaries.



ENVIRONMENT AGENCY



124350

[www.essex-estuaries.co.uk](http://www.essex-estuaries.co.uk)  
[www.suffolkestuaries.co.uk](http://www.suffolkestuaries.co.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)



ENVIRONMENT  
AGENCY

# Approaches to coastal & estuarine flood defence & management



Shotley, Foreshore recharge

## Foreshore recharge

Foreshore recharge involves the placement of material in front of existing sea walls and defences.

Recharge works in a similar way as saltmarsh by reducing wave energy at sea defences. This material would otherwise be dumped at sea and the sediment would be lost completely from our coastal systems. This beneficial use of dredgings to protect existing defences and create new foreshores also saves money. The frequency of journeys to sea by the dredgers is reduced, as is the amount of maintenance required at the sea walls.

It is also important to keep coastal sediments within the coastal system. Foreshore recharge allows sediments to travel to other parts of estuaries and shorelines as part of the natural processes that occur near the shore. Once sediment has been disposed of at sea it can only be replaced in the coastal zone by human intervention.

## Regulated tidal exchange

This process allows the land behind the defence to be slowly converted to saltmarsh favourable conditions in preparation for saltmarsh creation. Reversing the flow through the drainage sluice allows the controlled flow of seawater to inundate the site. This process alters the soil chemistry, allows siltation to take place, permits local species to adjust and encourages a saltmarsh seed bank to develop.

Sustainable flood defence policies have to look at strategic planning for our coasts and estuaries and managed realignment, foreshore recharge and regulated tidal exchange are simply three options that can be considered. There will always be locations that must be protected by traditional hard defences. These options can also be seen as important in terms of creating new habitats, providing new recreational areas, and producing local economic gain.

It is hoped that by using options like recharge and realignment in some estuary and coastal locations, some of the tidal energy and wave energy can be removed sufficiently to reduce coastal erosion and flooding elsewhere.



Flowering saltmarsh

Chris Lawrence

H0



ENVIRONMENT AGENCY

Information Services Unit

Please return or renew this item by the due date

Due Date

25-OCT-05



ENVIRONMENT AGENCY

[www.essex-estuaries.co.uk](http://www.essex-estuaries.co.uk)  
[www.suffolkestuaries.co.uk](http://www.suffolkestuaries.co.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)