

Tendring Coast Protection Strategy

2002 to 2007



Tendring
District Council



Tendring Coast Protection Strategy
2002 to 2007

Technical and Procurement Services
Town Hall
Station Road
Clacton- on - Sea
Essex

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

FORWARD

In its 'Policy Statement on Flood and Coast Defence April 2000' the Council supported the Government's policy aim 'To reduce the risk to people and the developed and natural environment from flooding and coastal erosion by encouraging the provision of technically environmentally and economically sound and sustainable defence measures'.

This Coast Protection Strategy for the Tendring Peninsular supports that aim by drawing together information from national, regional and local plans into one document. It explains the current situation and allows a holistic approach to be taken towards the provision of coast protection in Tendring now and in the future.

This strategy is a key contribution towards the Council's Corporate Plan Core Values. It enables the Council to provide leadership and vision in tackling the key coast protection challenges that face the district and considers and provides for the long term well being of the community through appropriate measures to protect the coastline. It seeks to improve the quality of life for local residents, whilst protecting the natural and man made environment for future generations. It does this in partnership with Government, coastal authorities and other stakeholders and it provides a method of evaluating and providing a prudent approach to the long term management of the Council's finances and to financial decision making.

The task of planning, designing, building and managing Coastal Defences in a cost effective, environmentally acceptable and sustainable manner is a complicated undertaking. This Strategy presents relevant issues in a straightforward manner and scopes the need for future work and detailed studies.

Portfolio Holder
Technical/Contract Services
Tendring District Council

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

CONTENTS		Page
1	Introduction	6
2	Background to Coast Protection in Tendring	8
2.1	Tendring District Council.	8
2.2	Boundaries.	8
2.3	Legislative Framework.	9
2.4	Funding and Budgets – Maintenance	10
2.5	Funding and Budgets – Capital Schemes.	11
2.6	Emergency Works	12
2.7	Strategic Planning	12
2.8	Consultation	12
2.9	Coastal Interest Groups	12
2.10	Sustainability	12
2.11	Major Development Proposals	13
2.12	Climate Change	13
3	Policy Overview	14
3.1	National Strategy	14
3.2	Essex Shoreline Management Plan	15
3.3	Problem Investigation.	16

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

	Page
4. Description of the Defences	
4.1 Management Unit 6c – Brightlingsea.	22
4.2 Management Unit 7c – Clacton and Holland.	23
4.3 Management Unit 7d – Holland Sluice to south of the Naze.	27
4.4 Management Unit 7e – The Naze.	31
4.5 Management Unit 9a – Little Oakley to Dovercourt	33
4.6 Management Unit 9b – Dovercourt and Harwich	34
5 Monitoring	36
6 Summary Action Plan	38
7 Conclusions	43
References	44
Appendix	45

TENDRING DISTRICT COUNCIL

Coast Protection Strategy



**Map of Tendring District
Showing Lengths of the Coastline Subject to Coast Protection Powers**

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TENDRING DISTRICT COUNCIL

Coast Protection Strategy

1 Introduction

Reasons for the Strategy

Tendring District Council (TDC) has a frontage with the sea of approximately 60km, of which the Council under the Coast Protection Act 1949 manages 18.6km. Almost all of this length is protected by coastal defence structures. Maintenance and replacement of these works is vital.



Failed sea wall at Holland

The seafront area also represents a valuable asset to the Council. Well maintained promenades, seawalls and good beaches attract visitors and provide amenity to the residents of the district.

A Coastal Strategy is required in order to provide a framework for developing, appraising and implementing coastal defence works in a logical manner. The strategy should, where possible, be used to extend ownership of both problems and opportunities amongst all bodies and individuals with a legitimate interest in the issues.

The Shoreline Management Plan for Essex¹ identifies the coastal management units and process cells (see section 3.2) and sets the coast protection objectives for each unit. The powers relating to coast protection within Tendring lie with the District Council, which historically has implemented coast protection schemes through a combination of revenue financed maintenance and capital financed renewal. The main reason to produce a strategy for Tendring is

therefore to make best use, throughout the district, of scarce resources in carrying out maintenance and renewal work. In order to do this the strategy needs to work within the following parameters:

- Be proactive in considering problems and solutions.
- Provide a sound decision making base.
- Work in partnership with adjacent operating authorities and with stakeholders.
- Promote sustainable solutions through strategic thinking and planning.
- Work within budgetary constraints

It is important when considering coastal problems and their solutions not to view them in isolation but to take a holistic view of coastal processes.

New thinking has emerged in coast protection in the past 10 years and it has been realised that it is essential to try to work with the forces of the sea rather than against them. This has led to a presumption against

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

hard defences such as sea walls that reflect wave energy and actually exacerbate the erosive power of the waves. In preference we should use so called soft defences which are designed to work with the forces of nature by absorbing as much wave energy as possible.



Wave dissipation blocks at Clacton

This Strategy will detail the administrative and legislative background to Coast Protection before considering in some detail the existing coastal defences which are the responsibility of the District and defining an action plan for future work and studies identified.

A Strategy for Coast Protection will provide a framework that will produce a sound basis for decisions about maintenance and capital renewal of coastal defences. It will also allow a financial programme that can be sustained by forward planning.

The Tendring Coast Protection Strategy covers the next five years. During that time period a number of strategic studies have been identified and various proposals for schemes and for studies have been scheduled. Details of this are shown in the Action Plan in Section 5.

It should be noted that this schedule is provisional and represents a best current assessment of the work and time scale. It is likely that the timetable and requirements will need to be reviewed from time to time in response to new demands and the results of the research being carried out.

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

2 Background to Coast Protection in Tendring

2.1 Tendring District Council

Tendring is a Maritime District Council set within a peninsular with the majority of its boundary formed by the sea. Although the District is semi rural in nature the urban areas have in general developed adjacent to the coastline indicating the importance that the sea has played in the development of the area. The continued existence of a great deal of property and infrastructure is dependent upon the continued maintenance of the coastal defences that protect the cliffs from erosion. In addition sand beaches are one of the districts most valued assets and these are also being eroded. It is important that a strategy for coastal protection considers both physical and economic factors when considering options for maintenance and renewal.

Tendring's coastline is dynamic and the natural processes of flooding and erosion have been modified and prevented, over the years, by both

coast and flood defence works. Construction of future coastal works will involve balancing the desire to protect property whilst maintaining the integrity of the natural processes. Creative engineering solutions will be required and difficult decisions will have to be made about where when and how to protect.



An example of an offshore breakwater holding in place a sand beach

This document sets out the Council's powers and the areas over which it has jurisdiction, it details government policy and how the Council spends its coast protection budgets. It identifies future work that is required and an action plan for maintenance, renewal and study.

2.2 Boundaries

In general it can be said that where land is above sea level and

therefore subject to coastal erosion the Maritime District Council has powers to protect the land under the provisions of the Coast Protection Act 1949. Where land is at or below sea level and therefore subject to coastal flooding then the powers for protection are vested in the Environment Agency (E.A.) under the Water Resources Act 1991. Both acts provide powers not duties or responsibilities.

This arrangement leads to a rather fragmented situation in Tendring where jurisdiction over sea defences is as follows.

(See also map on page 5)

River Stour	E.A.
Harwich and Dovercourt	T.D.C.
Hamford Water	E.A.
The Naze	T.D.C.
Frinton & Walton	T.D.C.
Holland Marshes	E.A.
Holland & Clacton	T.D.C.
Jaywick to Brightlingsea	E.A.
Brightlingsea	T.D.C.
River Colne	E.A.

T.D.C. and E.A. liaise closely on matters of coastal and flood defence and both authorities are members of

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

the Anglian Coastal Authorities Group (ACAG), which meets quarterly to share information.

Lengths of coastline for which the Council is responsible under the Coast Protection Act are as follows:

Harwich /Dovercourt	4.6km
The Naze	1.0km
Walton/Frinton	5.9km
Holland/Clacton	5.9km
Brightlingsea	1.2km
Total	18.6Km

(shown on the maps on pages 17 to 21)

The whole of these frontages are protected by seawalls, with the exception of the cliff at the Naze, which is unprotected.

2.3 Legislative Framework

The Coast Protection Act 1949 empowers Maritime Local Authorities to undertake measures to protect the coastline from erosion and encroachment by the sea.

The powers provided to Coast Protection authorities include:

- Powers to undertake coast protection work
- Power to enter into agreement with any person to enable the carrying out of coast protection works
- Power to acquire land
- Power to carry out emergency work
- Power to maintain and repair coast protection works including those in private ownership
- Provision to pay compensation for damage, loss of value or enjoyment, caused by coast protection works

The Act also empowers the Department of Environment, Food and Rural Affairs (DEFRA) to:

- Direct the advertisement of coast protection schemes
- Direct the process of inquiries to determine objections to schemes
- Approve or reject authorities' proposals for coast protection schemes and impose modifications
- Pay grant towards expenditure incurred under the Coast Protection Act

DEFRA co-ordinate the service provision of both coastal and flood defences in England.

The Coast Protection Act powers set out above are permissive, not mandatory. However, there are clauses within the Act that require Coast Protection Authorities to undertake necessary protection and maintenance works. Failure to meet this requirement can result in the Minister directing the Coast Protection authority or appointing a Coast Protection Board to carry out works in the public interest.

Local authorities also have a duty of care to ensure that their actions or omissions do not endanger others. The immediate health and safety issues of the public having access to coastal defences are covered by a system of regular inspection for hazards. But to ensure fulfilment of legal obligations a Council must be able to show it has taken all reasonable precautions to safeguard the public against loss and injury, whilst using powers under its control.

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

This does not mean that the Council must protect the coastline from erosion under all circumstances but it does mean that the Council must give due consideration, within government guidelines, to the provision, maintenance and renewal of coastal defences along its frontage. This strategy document and its conclusions are a key element in that consideration.

The main legislation concerning coast protection is the Coast Protection Act 1949. However, there are other items of legislation that have to be taken into account in the promotion of coastal works. Details of these are referred to in the Appendix.

Beyond the legislation mentioned above the promotion of this strategy mobilises the Council in a community leadership role and provides an important element in promoting the economic, social and environmental well being of the area. In so doing it supports the government's new approach towards well being and community planning as enshrined in the Local Government Act 2000.

2.4 Funding & Budgets - Maintenance

The maintenance costs of coastal defences are funded from revenue budgets, which in turn are recouped from central government through the funding mechanism described below.

The average actual expenditure for the previous 3 years is included in the Standard Spending Assessment (SSA), this leads to Revenue Support Grant (RSG). These costs are subject to a scaling factor to keep national totals to a pre-determined level of expenditure; currently the factor is 0.97. Put simply the Council will currently (at 2002) get £97 back from government for every £100 it spends on coast protection revenue work.

The Council has budgeted to spend £470,000 on maintenance works in 2002/3. Around £100,000 of this budget is spent on reactive maintenance to relatively small defects and about £370,000 will be spent on larger scale schemes aimed at extending the life of

structures through refurbishment or urgent repairs to prevent sea wall failure.

The Council has 17.6km of coastline protected by sea walls and other structures. It is estimated that the total rebuilding cost of these structures would be in the order of £70m. The Council is therefore currently spending about 0.7% of the asset value of the walls on maintenance each year.

The maintenance budgets have been increased in recent years in recognition of the severe backlog of maintenance work. Nevertheless the work required still outstrips the available budget. In recognition of this and in order to prioritise spending of maintenance budgets a 5-year rolling programme of repair work has been identified. The current approved programme is regularly revised to take account of erosional episodes, which identify new schemes and affect the urgency of already identified schemes

TENDRING DISTRICT COUNCIL

Coast Protection Strategy



Rock armour Work at the Naze to prevent outflanking of the sea wall

2.5 Funding & Budgets - Capital Schemes

Major Coastal Engineering works are very expensive and could not, realistically, be met from the Council's revenue maintenance budgets.

Typically the life of a sea defence is about 50 years so given that the Council's defended frontage is 17.6km then it might, on average, be expected that a kilometre of wall will need replacement every 3 years at a cost of about £4m. It would be difficult to justify this expenditure without government support.

Grant is available to Maritime Authorities towards approved capital expenditure under the powers of the Coast Protection Act.

To qualify for grant a scheme has to be submitted to DEFRA for approval under guidelines set down. The rate of grant is determined by a formula and varies between 45% and 75% of scheme cost.

The balance of capital expenditure, after grant, is covered by a Supplementary Credit Approval (SCA) the national total of which is limited in any one year. SCA's are effectively permission to borrow additional sums.

This additional borrowing has an impact on the Revenue Account of the Council. The SCA's are fed into the Standard Spending Assessment (SSA) mechanism and so impact on the Revenue Support Grant (RSG) calculation. The additional RSG received is less than the costs incurred.

As an example the most recent estimate of a £6.5m capital scheme indicated that after grant of 75% the net cost to the Council in the first full year would be £32,000 or about 0.5% of the scheme cost.

DEFRA has established a strategic approach, delivered through Coastal Defence Strategies, Project Appraisal Guidance Notes, Grant Memoranda and Scheme Approvals. Their policy aim is to reduce risks to people, the developed environment and the natural environment.

Applications for grant aid are required to:

- Comply with certain absolute thresholds
- Achieve an appropriate priority score
- Comply with DEFRA Project Appraisal Guidelines.

In order to achieve this the proposed schemes need to:

- ◆ Have a benefit cost ratio of at least one and preferably two or more

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

- ◆ Have a choice of options based on guidance
- ◆ Be based on an understanding of and work with natural processes
- ◆ Be consistent with the Shoreline Management Plan
- ◆ Be environmentally acceptable

2.6 Emergency Works

To meet all the above requirements is a lengthy process, not least, because most works require detailed study, consideration and consultation. However there is on occasion the need to carry out work to rebuild coast defences damaged by extreme weather or unforeseen ground failure. These works will sometimes need to be carried out on an emergency basis.

Such works will be eligible for retrospective consideration for grant aid but will need to meet the same project guidance requirements as other works. Any money spent by the Council on emergency schemes is at risk until DEFRA approval is forthcoming and this approval cannot be guaranteed. Therefore where possible the best course of action is

to try to anticipate future failures and to proactively promote revenue or capital schemes in advance of possible failure.

2.7 Strategic Planning

One of the main reasons for producing this strategy is to take stock of the existing coastal defences, to consider any evident or emerging problems, to anticipate future impacts and to take prudent action within budgetary constraints to safeguard the coastline in an appropriate manner.

2.8 Consultation

Consultation is an essential process as part of strategy development and all stakeholders should be involved in the process at an appropriate time. Extensive consultation was carried out as part of the study, which provided the Essex Shoreline Management Plan¹ (which determined the process units). Further consultation will result from the production and adoption of this strategy.

This document will be considering the extent of work and of further studies, which are required for each of those management units to meet the objectives, derived in the Shoreline Management Plan. As such, future consultation with stakeholders and interested parties will be required into any local proposals that result from further detailed strategy studies.

2.9 Coastal Interest Groups

The realisation that sea defence structures can have a significant impact on the coastline has led to the formation of various coastal groups. These forums have been set up in order to exchange and disseminate information relating to all aspects of the coastline and also to influence government policy. In the Appendix are details of some of the local groups that input to the Council's management of its coastline.

2.10 Sustainability

All coast protection proposals will be appraised for their impact on the

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

environment. The principles of Sustainability will be addressed in the choices made regarding the materials used in constructing new schemes and the options for reusing or reclaiming material will be considered.

that this part of East Anglia is subject to sea level rise of approximately 6mm per year. These predictions are used when designing the level of future defences.

2.11 Major Development Proposals that may Impact on Coast Protection

At the time of publishing this Strategy there are two major coastal development proposals within the District. One is the offshore Wind farm on Gunfleet Sands, Clacton, the other is the Bathside Container Port Development at Harwich. Both are subject to providing an Environmental Impact Assessment during the design and planning stage. However, it is considered that neither development will have a negative affect on the elements of the Council's coast protection responsibilities.

2.12 Climate Change

Predictions of climate change and observations of sea level rise show

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

3 Policy Overview

3.1 National Strategy

The National Strategy for Coastal Defence is set out in the Department of Environment Food and Rural Affairs (DEFRA) document 'Strategy for flood defence in England and Wales. Published in 1993

This document defines the DEFRA policy aim as:-

'To reduce the risk to people and the developed and natural environment from flooding and coastal erosion by encouraging the provision of technically, environmentally and economically sound and sustainable defence measures.'

The key objectives to achieve this policy are:-

'To encourage the use of adequate and effective flood warning systems.'
'To encourage the provision of adequate, economically, technically and environmentally sound and sustainable flood and coastal defence measures.'

'To discourage inappropriate development in areas at risk from flooding and coastal erosion.'

In 1998 the government committed to preparing a series of High Level Targets in order to deliver the flood and coastal defence aims and objectives. These targets were published in November 1999 and those relevant to Coastal Defence Authorities are enumerated below with a commentary on how the Council are meeting these targets.

The Council's Response to National High Level Targets

Target 1A

Production of a publicly available policy statement describing plans for the delivery of Government policy aims and objectives –

A policy statement was prepared and approved by the Council in March 2001.²

Target 4B

To provide the Environment Agency with information on flood and coastal defence assets that are the responsibility of the operating authority. Such information should be in an agreed format. –

To date no agreed format has been produced by the EA, but TDC have a Register of Coast Protection Assets already in place.³ The register is updated annually.

Target 6A

Ensure that a programme is in place for the regular inspection of all coast protection assets. –

TDC operates an annual survey of its coast protection assets and records them in text and photographic format.⁴ In addition maintenance inspections are carried out at programmed intervals.

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

Target 7

To provide DEFRA with a prioritised forward programme of capital and maintenance work. –

TDC supplies this information annually.

Target 8

Completing strategy plans necessary to implement Shoreline Management Plans -

A detailed strategy plan is currently being prepared for the Clacton frontage. This strategy document for Tendring identifies where further strategy work will be required in the future.

Target 9A/B

To avoid damage to environmental interests.
To ensure no net loss to habitats covered by Biodiversity Action Plans. Seek opportunities for environmental enhancement.

To report losses and gains of habitats covered by Biodiversity Action Plans. –

When carrying out coastal defence works, TDC will seek opportunities for environmental enhancement, and aim to avoid damage to environmental interest and to ensure no net loss to habitats covered by Biodiversity Action Plans. The Council will monitor all losses and gains of such habitats as a result of these operations and report on them annually to the Environment Agency.

Target 13

Local Authority development plans to identify the extent to which they contain coastal erosion statements and reflect the assessed risk of coastal erosion. –

TDC have adopted this ethos in their Policy Statement on Flood and Coast Defence.² The SMP, the Council's Policy Statement and this Strategy will be taken into account in drawing up the Review Local Development plan, due in December 2002.

3.2 Essex Shoreline Management Plan

In 1994 DEFRA published the Coast Protection Survey of England, which reported on the condition of the sea defences at that time; Tendring District was within the Cambridge Area report. The Ministry updates the condition survey, annually, with reports supplied by the local authorities concerned.

Following on from the Coast Protection Survey, the Ministry issued a guide to coastal defence authorities for the production of shoreline management plans. The aim of these plans is to determine a strategy for the development of sustainable coastal defences and to set objectives for the future management of the shoreline.

Research indicated that the coastline of England and Wales could be divided into 11 major sediment 'cells'. A sediment cell is defined as a length of coastline which is relatively self-contained as far as movement of sand and shingle is concerned and where

TENDRING DISTRICT COUNCIL

Coast Protection Strategy

interruption to such movement should not have a significant effect on adjoining sediment cells. The map on page 16 shows the boundaries of these major sediment cells, which form discrete units for the development of Shoreline Management Plans. In many cases, however, sub-cells provide a more manageable unit.

Tendring District Council was the lead authority in the commissioning of the Essex Shoreline Management Plan¹, covering Sub-Cell 3d. This Sub-Cell is divided into 9 coastal management units and Tendring's frontage is contained within Units 6 to 9. (See pages 17 to 21)

The Shoreline Management Plan analyses the various elements within a sub-cell and sets the criteria for future coastal works within that cell. For the majority of the Tendring frontage the strategic defence option is 'hold the existing defence line'.



3.3 Problem Investigation

Working on the basis of each SMP coastal management unit, Section 4 reports on the existing structures and conditions within each unit. An action plan is attached for each unit.