



Kent Coastal Network

Towards integration on the Kent Coast

This topic paper is part of a KCC coordinated project to develop an Integrated Coastal Action Plan for Kent. The aim is to generate wider discussion and it is accompanied by a consultation response form.

Title: - Shoreline Management

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Introduction

The coordination of shoreline management on the Kent coastline, like so many regions across the UK, is a complex issue due to its variety of uses. The coast exhibits some of the most spectacular natural environments such as its chalk cliffs, diverse geology and environmentally protected vegetated shingle beaches whilst also being one of the most urbanised counties in the UK. Over a third of Kent's population lives in a coastal area which inevitably leads to conflict over its use.

Shoreline management, in the context of this paper, is a term used to describe not only the coastal defences that are put in place along the coast but also the emerging policies that are intended to integrate and coordinate the policy for defending or not defending the coast against erosion and flooding in Kent. Through the implementation of Shoreline Management Plans (SMP's) and better communication between Local Government and stakeholders at the coast, shoreline management in Kent is certainly progressing in achieving integrated and strategic management of the coastline.

This topic paper

- Summarises Shoreline Management for the Kent coast.
- Identifies the natural and man-made threats to the Kent coastline and examines how these are being monitored.
- Invites comment from representatives involved in this area of concern, the responses will be used to ensure a well informed and supported plan is developed.

Key Policy Drivers

The key policy drivers in any community take into account the economic, social and environmental considerations of the local areas and features. Over a third of Kent's population live in urbanised coastal areas and therefore its coastline is economically and socially valuable.

This combined with the threats posed by climate change such as sea level rise and an increase in storm activity means that there are many factors to promote shoreline defence and management.

Where coastal erosion is considered to be hazardous to the safety of the public or threatens the established built environment coastal protection measures are generally put in place.

SMP policies consider and reflect current best estimates of the impact of future climate change. However issues such as the increase in the rate of sea level rise are difficult to accurately predict, this is just one of the reasons why SMPs (which recommend shoreline management policy for the next 100 years) may be reviewed as often as every decade.

Access and Amenity – The public can use and enjoy a significant length of the coast via a number of sea walls and promenades constructed for coastal defence purposes. These sea walls allow easy access to previously inaccessible locations and are often of high amenity value. Public access to promenades is one of the issues raised by the Marine & Coastal Access Bill. It remains to be seen exactly how the Bill will affect LA governance over coastline activities and planning, however one of the key purposes of the Bill is to provide greater recreational access to the English coast.

A Shoreline Management Plan (SMP) is a regional policy document which aims to provide a strategic and integrated approach to coastal zone management. Three SMPs have now been adopted for Kent: South Foreland to Beachy Head, Isle of Grain to South Foreland and Medway Estuary and Swale. The SMPs are non-statutory policy option documents that are frequently reviewed to determine the coastal defence policies for the Kent coastline over the next 100 years. They are widely encouraged in Defra's programme for flood and coastal erosion risk management. The development of county-wide policies has promoted both partnership working and extensive stakeholder engagement (including the general public), with Local Authorities taking the lead role, to ensure consideration of all coastal interests in policy direction planning and creation.

The most common management policy currently implemented in Kent is 'Hold the Line' which means the defences will be maintained and upgraded as required in their existing position. This provides essential coastal defence to most urbanised coastal areas. Management unit policies for managed realignment or no active intervention have also been selected but to a much lesser degree (although these policies are recommended more frequently in the SMP's for the medium to long term). Some policy decisions are ultimately selected according to 'key policy drivers' such as economic loss through lack of coastal protection. For instance, if a feature has sufficient importance in terms of the benefit it provides, that potentially has an overriding influence

upon shoreline management policy selection. This is the case at Dungeness where the policy is to hold the current line of defence in order to protect the nuclear power station behind the artificially maintained shingle bund.

However in some less critical locations or areas of low population, defences exist which if tested against the current outcome measures ranking system would not be successful in securing funding. Defences which fall within this bracket are perhaps a legacy of a former funding climate where applications were evaluated using benchmarks which did not necessarily consider the long term sustainability of a scheme. The cost of continued maintenance in such areas can be a significant issue and ultimately the most appropriate course of action may be to allow natural processes to take over once again. Although allowing this in itself to occur may raise further funding issues.

Coastal Defences across Kent

The Kent coastline displays many different forms of coastal defences. Around several major towns such as Folkestone, Margate and Ramsgate hard defence structures protect the valuable economic, social and environmental assets from the threat of coastal erosion and flooding.

The Kent coastline is generally heavily defended to protect the valuable economic and social assets that exist. Wherever possible, the preference is to use soft engineering defence design to minimise environmental implications. This is often the socially preferred option due to the aesthetic issues associated with hard concrete defences. Beach recycling is now common place along many of the shingle coastlines in Kent. Recycling shingle to mitigate the impacts of long shore sediment drift provides adequate protection from wave action along low-lying towns such as at Hythe, Deal, Herne Bay and Whitstable.

Implementing a successful coastal defence scheme can rely heavily upon the previous experience of similar schemes. Many of the coastal defences in Kent were constructed during the 1950s and 1960s when coastal data and science was not as widely available as it is today. In some instances, these defences tended to change the natural coastal processes occurring further up the coast from the constructed works. This was particularly apparent after the Reculver to Minnis Bay sea wall was built in the 1950s which caused a greatly increased rate of long shore drift sediment movement meaning that erosional processes were occurring at a faster rate along the beach face. In response to this, groynes had to be placed on the beach during the 1960s and then again during the 1990s. The financial and coastal science implications of the original sea wall obviously helped with the provision of better schemes in the future.

Funding

The Department for Environment, Food and Rural Affairs (Defra) has overall responsibility for flood and coastal erosion risk in England. Local Authorities

undertake almost all coastal protection (erosion risk) functions with the majority of flood defence (flood risk) areas being managed by the Environment Agency.

The Environment Agency, through Defra, also provide Local Authorities with grant funding under a strategic overview role to undertake significant coastal protection work using the Outcome Measures system of funding allocation. Where the economic losses would be significant if no protection/defence is put in place or maintained, the Outcome Measures point system award is likely to be high and the proposed scheme is therefore likely to be implemented.

Alternative funding sources are possible although the most common source is Government funding via the route described above. Where significant infrastructure such as a railway line or power station is the major beneficiary of a coastal defence scheme funding may be sourced privately via the company concerned. Such projects are still required to be evaluated environmentally to ensure that the scheme does not disturb natural coastal processes beyond the physical extent of the new works.

A potential method of dramatically enhancing a capital funded scheme is via a match funding bid. Bids for European or Heritage Lottery Funding for a scheme which can be demonstrated to promote social and economic regeneration have the potential to significantly improve the amenity value of the project.

Education and Engagement

The publication and media coverage of the Marine and Coastal Access Bill in 2008 has highlighted the national importance of the marine and coastal environment across the UK. Raising the profile of the coast as a resource to the public has highlighted the need to protect their homes, towns and environmentally/historically important sites from coastal erosion and flooding. However protection provided in an unsustainable manner can lead to a situation known as coastal squeeze. The term 'coastal squeeze' is applied where the coastal margin (or intertidal zone) is squeezed between a fixed landward boundary (such as a sea wall or even a natural cliff) and the rising sea level. In areas where sediment availability is reduced, the 'squeeze' includes a steepening of the beach profile and foreshortening of the seaward zones.

If a sea wall is maintained indefinitely on the same line and raised to take account of sea level rise it is quite likely that the tidal zone in front of the wall will be subject to coastal squeeze. In the long term, any inter tidal beach, reef or flats which formally existed would be reduced in width or may even disappear completely with the water barely leaving the base of the sea wall at low tide. Furthermore, at high tide the water would be very deep against the sea wall causing wave energy to be high during storm conditions. This would make the wall more expensive to maintain but more importantly, it would

make the implications of a sea wall failure/breach far greater due to the increased energy and volume of water involved.

Human interventions to prevent or reduce flooding and erosion have undoubtedly had an influence on the evolution of our coastline. In some cases these interventions have taken place without an appreciation of the effect that they have on other locations up and down the coast.

Whilst these changes continue, social, economic and environmental pressures are increasing in coastal areas. People enjoy living by and visiting the coast and so there is always pressure for more housing. As international trade increases so does the demand for port space and associated coastal-based industry. Such development places stress on natural coastal habitats that are often unique and of national and international importance.

Shoreline Management and Planning

Since the need to defend the coast is fundamentally determined by the location of property on the coast, the planning system has an important long-term role to play. Land-use plans need to ensure that unnecessary development does not take place where it would increase the amount of property at risk and increase demand for future coast protection. This position is supported by Government planning statements/guidance and Environment Agency policies for protecting flood plains, and by the current Kent and Medway Structure Plan (anticipated to be superseded by the South East Plan in summer 2009).

District Authorities in Kent have prepared (or are preparing) Strategic Flood Risk Assessment documents (SFRA's). A SFRA provides detailed information on flood risk areas in a district and in particular the flood risks associated with areas being considered for future development as part of Local Development Frameworks. National planning legislation and policy guidance are considered throughout SFRA's.

Construction of coastal defences normally also requires planning permission. The statutory Local Plans need to provide and implement policies to restrict inappropriate defence schemes, ensure quality of schemes when implemented and provide for access to maintain defences.

Partnership working

Working in partnership along the coast can develop shoreline management policies substantially. Across Kent, there are three coastal partnership projects currently operating;

- The Medway and Swale Estuary Partnership - A voluntary forum that seeks to address the various issues currently facing the estuary. It

consists of 14 organisations from the private, statutory and voluntary sectors, who have a common interest in promoting a sustainable future for the estuary. The partnership's work is centred around raising awareness of the estuary and its associated issues, managing competing demands and increasing knowledge of the estuary through research, publications and educational activities.

- Thanet Coast Project - Set up in 2001, this project was the result of workshops held with stakeholders to drive forward the priorities which people had identified within the North East Kent European Marine Sites Management Scheme. The project aims to raise awareness of the area's important marine and bird life, work with people to safeguard coastal wildlife and be a one-stop shop for coastal information. The project also promotes wildlife events and activities and attracts a large amount of local interest. It also helps implement the current North East Kent European Marine Sites Management Scheme.
- Thames Estuary Partnership. - Provides a neutral forum for local authorities, national agencies, industry, voluntary bodies and local communities to work together for the good of the Thames Estuary. The partnership holds charity status and provides a framework for the management of the estuary. It coordinates a programme of projects and facilitates new projects and forums for joint working. Regular events and workshops are held and the Partnership seeks to further the interests of local communities, as well as the local economy and environment.

The South East Coastal Group (SECG) brings together the Environment Agency, local authorities, county councils, Natural England, Defra and land owners to provide a more coordinated approach to shoreline management across Kent. This integrated approach to coastal defence management has created extensive partnership working to achieve the most scientifically aware and environmentally sensitive approaches to managing the protection of the valuable coastal assets in Kent. As a forum for most stakeholders and the general public along the coast, it provides a central base for discussing coastal issues and problems and developing effective responses to these.

Such cooperation of partnerships in Kent has expanded the sharing of data and scientific information across the county. The Strategic Regional Coastal Monitoring Programme is just one example of local authorities (Canterbury City Council and Shepway District Council) working together to provide better information about the science at our coasts. The programme includes annual surveying of the sediment movements all across the Kent coastline and this data is freely available. The analysis of this data aids decision making regarding coastal defence structures and the effects these may have on natural processes.

The East Kent Engineering Partnership unites the Coastal Engineering departments of five Maritime District Authorities and the Environment Agency on Coastal Defence functions and other Municipal duties. The benefits of

working with neighbouring Coastal Operating Authorities have been enjoyed for many years in Kent however this recently formed partnership formalises the arrangement. The Partnership approach to capital works opens up many advantages over solo district scheme development. Cross District working allows the best expertise in a particular field to be utilized at a very low cost to the originating Authority. Larger cross boundary schemes can be let producing a better economy of scale. Training opportunities are far greater with secondments a real possibility, providing good investment in professionals for the future. A central programme of work is also produced to allow better long term planning and help identify schemes which may be combined.

Environment

Predictions for environmental factors such as sea level rise and increased frequency of storms along the Kent coastline indicates potential long-term changes to the regional climate variability. It is difficult to account for these changes at this stage as not enough of the science is known to predict what will happen for certain 50 -100 years from now. The long-term prospect is that more economic, social and environmental assets will become subject to coastal flood and erosion risks. It will therefore prove difficult in some future scenarios to protect the coastline without some detrimental effects to property and the environment.

Integration of Shoreline Management on the Kent Coast

Biodiversity

Shoreline management can be both beneficial and detrimental to local biodiversity along the coastline. There is an increasing requirement to protect coastal biodiversity both through legislative requirements and adopted policy structures (such as the SMP's) when considering the economic, social and environmental scenarios of coastal protection options. Policy directions can inevitably create some biodiversity loss in the intertidal zone through coastal defences but also it can protect habitats and agricultural land from the threat of a retreating coastline. The loss of biodiversity rich habitat is considered to be a significant enough issue that the new outcome measures approach to capital flood and erosion risk works encourages schemes which create new habitat or include a provision for replacing any lost as a result of the scheme.

Historic Environment

The historic environment along the coastline requires protection, but where there are few economic or social benefits it is unlikely that a scheme would be implemented for historical preservation alone when the cost/benefit ratio is considered. Policy directions for hold the line could be considered but again this would be dependent on a cost/benefit ratio analysis.

Geology and Geomorphology

The geology and geomorphology of the coastline can often be compromised when constructing hard coastal defences. Generally, this occurs when coastal protection structures either conceal or destroy geological features. Geological exposure is also inherently reliant upon erosional processes along the coastline and the construction of hard defences can alter natural coastal processes including inhibiting cliff erosion which maintains the display of geological features.

Industry

Dover Harbour acts as a defence to the low lying land behind it. At either side of the valley the reduction in erosion on the chalk cliffs can be seen where the port shelters them from wave/wind action. Areas of significant industrial value will usually justify coastal defences, on economic grounds.

Quality of the water environment

The environmental quality of the coastline is now paramount in all shoreline management considerations. During the construction phase of coastal defences and shingle beach recharge there can be short term implications to the localised water quality. A standard part of the development of a modern coastal engineering scheme is an environmental impact assessment (EIA). This assessment explores the possible impact (positive or negative) that a proposed project may have on the natural environment. The purpose of the assessment is to ensure that decision makers consider the potential environmental impacts to decide whether to proceed with the project.

Recreation

Shoreline management ultimately promotes the public use of the coastline. Many specific projects have led to better coastal zone access and improvements to the local beach facilities i.e. Folkestone Coastal Park development.

Regeneration and Coastal Towns

Regeneration work in Kent includes improving buildings and public spaces in our towns, development of business parks and working with community groups to help bring their ideas to fruition to improve the area. Regeneration programmes are generally funded from a variety of sources. All European and UK Government grants must be match funded by at least 50 per cent from other sources. This can be the private, public or voluntary sector and can include direct financial allocations or assistance in kind, such as time involved in managing projects. Although the work achieved through such projects is undoubtedly positive the goals and funding can be short term.

Tourism and the Visitor Economy

The coastline in the UK is one of the biggest assets to the nation's tourism industry, and Kent is certainly no exception. Tourism on the coast can provide

part of the demand for coastal defences. Shoreline management schemes can often deliver attractive environmental improvements to local areas.

Policy directions for Shoreline Management on the Kent coast

Having considered the issues raised by this paper the following questions are intended to commence the discussion on shoreline management and help inform the consultation response.

1. How important is engagement of wider stakeholder groups and the public in ensuring that long term sustainable policies can be implemented?
2. Do you feel the current mechanisms for engaging stakeholder groups and the public on shoreline management policy are effective?
3. Where schemes have the potential to deliver benefits to other areas e.g. regeneration, should the costs of such projects be shared and would this allow further benefits to be added to planned schemes?
4. What are your thoughts on policies such as "hold the line" and "managed realignment" and do you feel they are being chosen using sustainable criteria, in other words a balance of socio - economic and environmental considerations?
5. How can partnership working benefit the management of the Kent coastline? Which organisations/groups should work together with regard to Shoreline Management and how?
6. Where defences exist which are costly to maintain but do not attract capital funding for repairs, should the abandonment or even removal of those defences be considered by Operating Authorities?
7. The amenity value of much of the Kent coast is clearly high but how should this value be considered or utilized in future shoreline management planning?

Acknowledgements:

www.coastalkent.net

www.thamesweb.com

www.thanetcoast.org.uk

www.english-nature.org.uk

www.se-coastalgroup.org.uk

Towards policy for Dorset's Coast: Coastal Defence. Dorset County Council.