The Wash Shoreline Management Plan

Interim Report – October 2008

What is a Shoreline Management Plan?

A Shoreline Management Plan (SMP) is a plan for future management of the risks associated with coastal processes (e.g. tidal patterns, wave height, wave direction and the movement of beach and seabed materials) which aims to reduce the impact of those risks on people and the developed, historic and natural environments. SMPs cover the entire 6000 kilometres of coast in England and Wales and identify the most sustainable approach or approaches to managing risks in the short term (0-20 years), medium term (20-50 years) and long term (50-100 years). (Known as 'Epochs' 1, 2 and 3 in the 2006 guidance issued by the Department for Environment, Food and Rural Affairs - Defra).

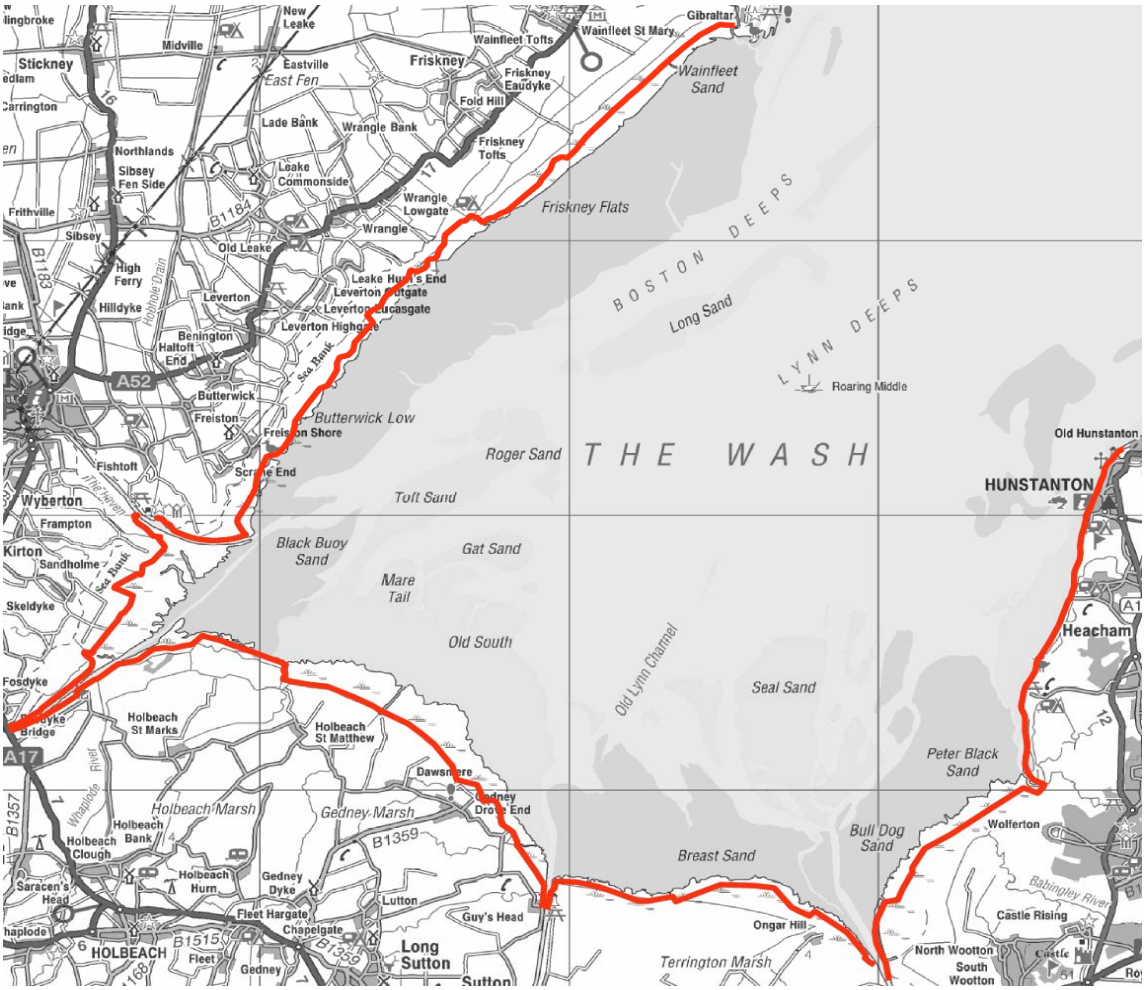


Figure 1: The Wash SMP study boundary

The first generation of SMPs were published in 1996/7 and were a major step forward in assessing how coastal processes are likely to impact on the coast in the future. The second generation of SMPs are now being developed, incorporating 10-12 years of further coastal monitoring and research into climate change and sea level rise, and will be finalised by March 2010.

Shorelines constantly change due to waves and tides. The amount of physical change depends on many things, and happens over timescales from seconds to centuries. The changing coastline has also been influenced by people's actions throughout the years, particularly in attempts to stop the effect of erosion or flooding. In some cases, this has taken place without an appreciation of the effect these actions could have on other places up and down the coast.

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

Shoreline Management Plans are produced in accordance with the 2006 Defra guidance, which ensures that the SMPs:

- set out the risks from flooding and erosion to people and the developed, historic and natural environment within the SMP area;
- identify opportunities to maintain and improve the environment by managing the risks from floods and coastal erosion;
- identify the preferred policies for managing risks from floods and erosion over the next century;
- identify the consequences of putting the preferred policies into practice;
- set out procedures for monitoring how effective these policies are;
- inform others so that future land use, planning and development of the shoreline takes account of the risks and the preferred policies;
- discourage inappropriate development in areas where the flood and erosion risks are high;
- meet international and national nature conservation legislation and aim to achieve biodiversity objectives.

The SMPs are governed by a Client Steering Group (CSG) and an Elected Members' Forum (EMF) (please see **Appendix A** for full details of project governance), co-ordinated by a lead authority (the Environment Agency in the case of The Wash), and follow a set pattern of stages according to the Defra guidance. The programme for The Wash SMP is set out below:

Stage 1:	**Scope the SMP**	March - June 2007
Stage 2:	**Assessments to support policy development**	April 2007 – Early/Mid 2008
Stage 3:	**Policy development**	Mid 2008 – Late 2008
Stage 4:	**Public consultation**	January 2009 – April 2009
Stage 5:	**Finalise Plan**	July 2009
Stage 6:	**Plan dissemination**	Summer 2009

Progress so far

Over the last year the following work has been completed:

Stage 1: Scope the SMP

The beginning of the project which is primarily concerned with:

- defining the SMP (confirming CSG and EMF membership, setting out the stakeholder engagement strategy, confirmation of the study area and boundary etc) and;
- data collation (defence data, mapping, determination of estuary limits, heritage data etc).

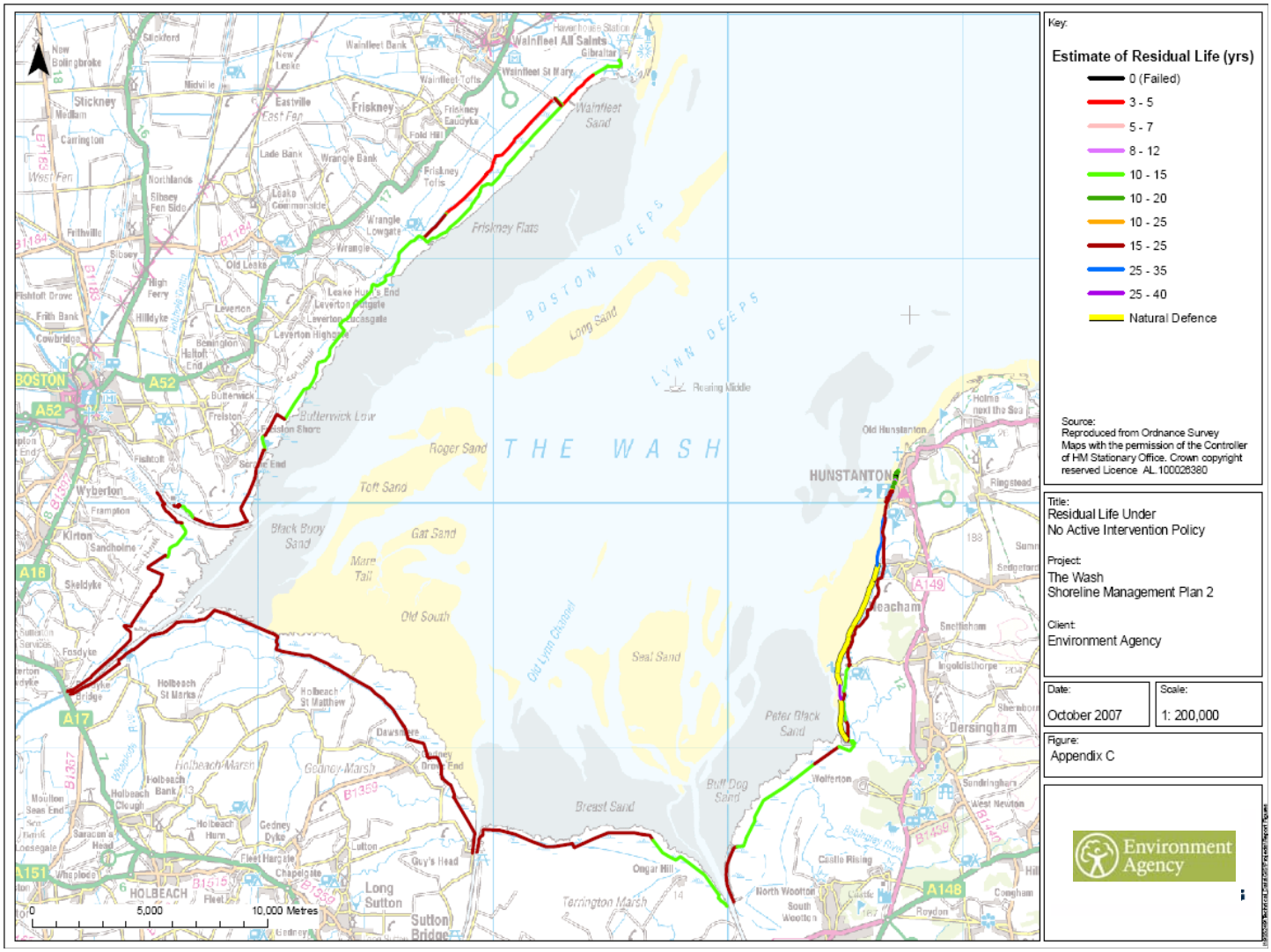


Figure 2: Residual life of defences under the 'No Active Intervention' policy (i.e. if all maintenance ceased immediately)

Stage 2: Assessments to support policy development

The stage of the project where we gain a basic understanding of the shoreline and everything that matters for shoreline management by:

- defining the features, benefits and issues in the area - by producing a review of features and their locations (see **Appendix B**), and why those features are important in terms of the benefits they provide e.g. landscape value, heritage value, designated habitat or infrastructure etc)

- developing 'baseline scenarios' - assessing and mapping the evolution of the shoreline under the extremes of '*no active intervention*' (showing the value of the current defences i.e. what would be at risk, and the extent of flooding if the defences weren't there) and '*with present management'* (showing the pressures the defences will be subject to and the effects of 'coastal squeeze' if we sustain today's standard of protection by maintaining and building up defences in line with sea level rise) - see **Appendix C**

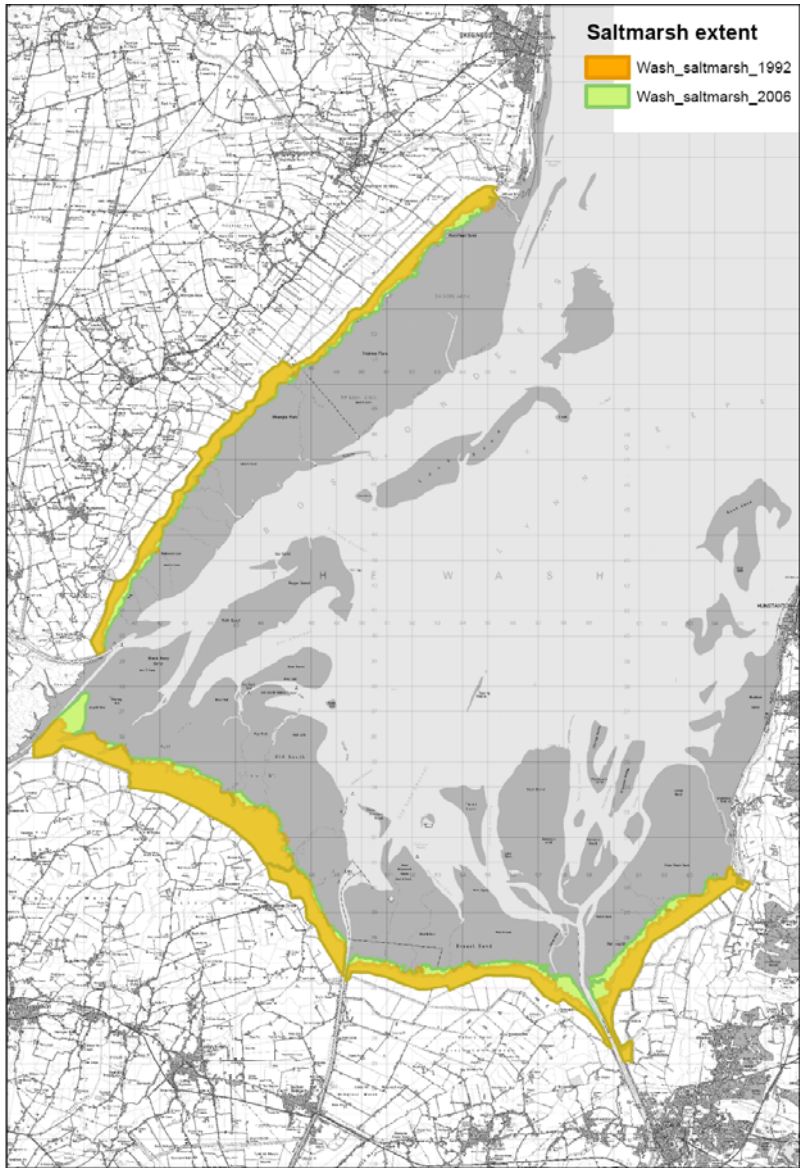


Figure 3: Evolution of saltmarsh in The Wash - an example of the data gathered for this project, displaying the results of a long-term EA monitoring programme

- defining the objectives of the project

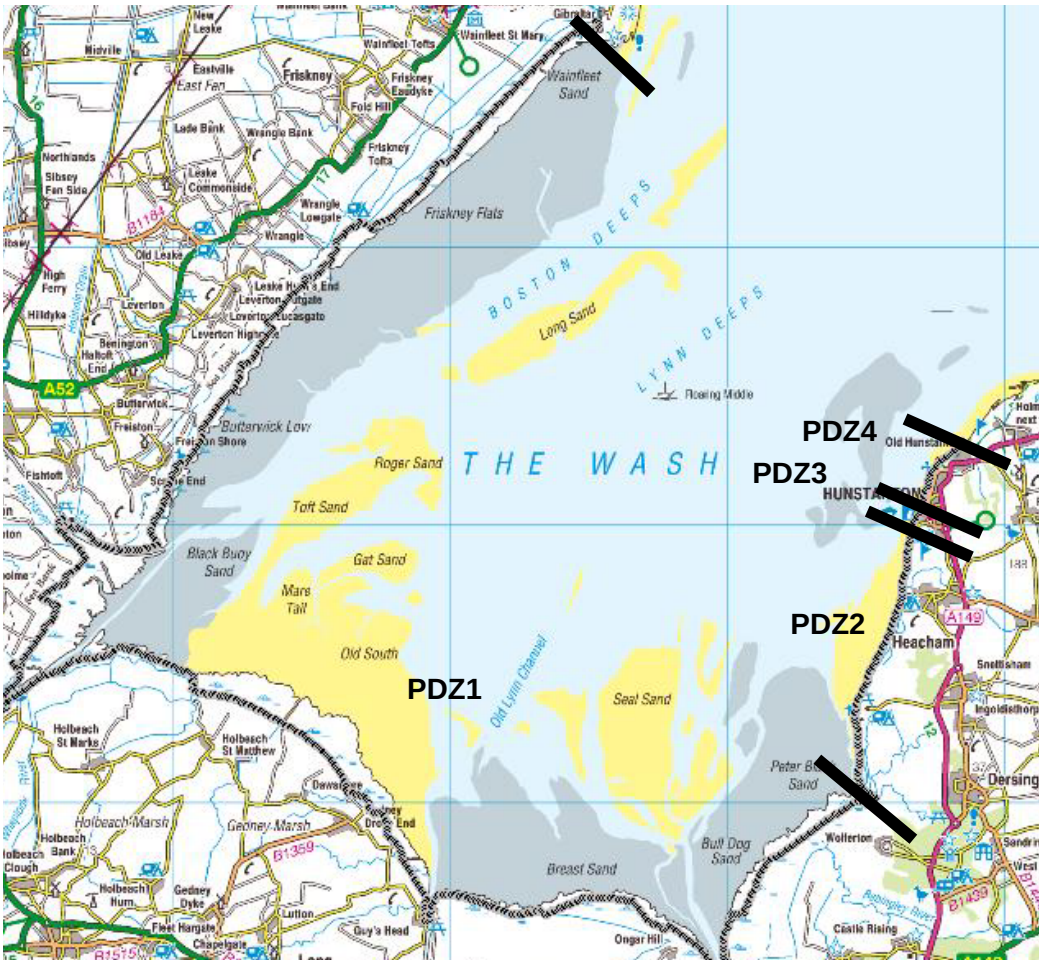
- identifying flood and erosion risks

The approach to policy appraisal

An SMP policy defines the way that a shoreline is managed. The final outcome of the SMP will be the application of one such policy to each section of shoreline along the SMP frontage for all three epochs (0-20 years, 20-50 years and 50-100 years), thereby setting out a vision for how The Wash will be managed for the next 100 years.

For the purposes of this project, The Wash is divided up into discrete 'policy development zones' - PDZs - sections of shoreline that are relatively independent and which exhibit broadly similar characteristics. The policy for a particular PDZ can be different in each epoch to take account of time-dependant factors such as the need for infrastructure adaptation or the expected increase in sea-level rise.

Figure 4: PDZ Locations for the Assessment



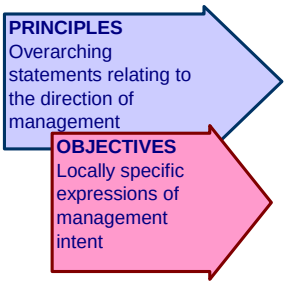
- PDZ1: Gibraltar Point – Wolferton Creek
- PDZ2: Wolferton Creek – South Hunstanton
- PDZ3: Hunstanton Town
- PDZ4: Hunstanton Cliffs

As set out in the Defra guidance, four policies are available:

- **No Active Intervention (NAI)**: where there is no investment in coastal defences or operations.
- **Hold the Line (HtL)**: keep the existing defence line (by maintaining or changing the standard of protection).
- **Advance the Line (AtL)**: by building new defences on the seaward side of existing defences.
- **Managed Realignment (MR)**: allowing the shoreline to move backwards or forwards, with management to control or limit movement.

The final choice of a preferred SMP policy for a certain stretch of coastline is made after an extensive period of 'policy appraisal' which evolves through the following logical steps:

- Using the outcomes of earlier tasks (Theme Review, Baseline scenarios) a ***characterisation*** of the shoreline is developed (i.e. physical characteristics, defence information and environmental features/designations);
- A set of ***key values*** (such as communities, agriculture, recreation, habitats and infrastructure etc) is determined, based on the characterisation;
- ***Principles*** that should govern shoreline management of The Wash are then identified, based on the key values and on local and national ambitions. These are statements which provide a clear expression of position which will inform and guide the decision making process within the SMP. For example, a possible principle could be:



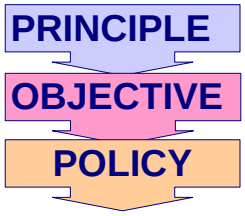
'To ensure that shoreline management supports the continuation of sustainable patterns of development and considers possible effects on communities and their welfare'.

Principles therefore effectively constitute the 'rules' within which objectives will be developed and policy formulated. (A full, SMP-wide set of principles has been agreed with the Elected Members Forum, see **Appendix D**).

- Finally, ***policy appraisal objectives*** are identified, combining the principles with locally defined key values. These objectives then represent locally specific criteria that can be used to appraise how well a policy meets the principles. They relate to specific targets for management and should wherever possible provide a means for the monitoring and assessment of their effectiveness. An objective could therefore be:

  'No net loss of Saltmarsh habitat in the plan area in the first epoch'.

  Such an objective provides a clear intent of management and is 'measurable'. In this respect, the direction and effectiveness of management can be readily determined.

  This approach enables policy development in a simple hierarchy of ***principles*** ➡ ***objectives*** ➡ ***policy***.

  For The Wash, the SMP will need to find the right balance between numerous potentially competing issues such as:

  - communities
  - areas of grade 1 and 2 agriculture
  - habitats
  - ports
  - the need for flood and erosion risk management

  whilst also taking account of other factors such as historic environment, regional transport routes, MoD use of the foreshore, drainage and recreation.

  An example of the objectives for one specific frontage is included in **Appendix E**.

Current work – The confirmed 'playing field' and 'policy packages' to be appraised.

In order to progress with policy appraisal, it was first necessary to identify policies that are sufficiently realistic to justify carrying out a full appraisal (and in doing so define the project 'playing field'). Table 1 below shows the details of the playing field for PDZ1, the frontage from Gibraltar Point to Wolferton Creek – this is just one area, but the process has been applied to the whole Wash.

Table 1: Playing field, Gibraltar Point – Wolferton Creek

Policy	Yes/No	Comments
No Active Intervention	No	Ruled out for all epochs. Defended area is very extensive. NAI would lead to uncontrolled increase in flood risk all the way to the high ground. Land use adaptation within the SMPs planning horizon is not realistic.
Advance the Line	No	Large scale seaward movement is ruled out for all epochs. There are large disadvantages (loss of intertidal habitats; technically very difficult; sustainability of defences; increased flood defence management), and potential drivers (e.g. future need for land) are considered insufficient.
Hold the Line	Yes	This is sufficiently realistic to justify appraisal, plus it is the current policy and therefore needs to be appraised.
Managed Realignment	Yes	This is sufficiently realistic to justify appraisal. However, it is not realistic beyond a certain maximum extent: • Epoch 1: need to keep defending as a minimum all dwellings, A-roads and power lines. It is not realistic to assume that such features can be relocated within Epoch 1. Appraisal is needed to decide about the area seaward from there (including high grade agricultural land). • Epochs 2 and 3: need to keep defending established settlements and the area landward. The justification for this is that there is no realistic flood defence line between the belt of settlements around the Wash and the high ground far inland. Appraisal is needed to decide about the area seaward from the established settlements (including hamlets, individual dwellings, infrastructure and high grade agricultural land.

This is followed by the identification of a number of 'policy packages' that span the playing field and represent the fundamental choices that the SMP has to make (i.e. whereas ***policies*** can only be the pre-defined options (NAI, HtL, AtL, MR), ***policy packages*** indicate the proposed intent of management and include nuances such as the extent of proposed realignment (e.g. 'up to but not including settlement X').

Therefore, *for this frontage*, based on this playing field, the CSG and EMF recommended that we appraise the policies of **'Hold the Line'** and **'Managed Realignment'** in the form of the following four policy packages:

a) **Hold the Line**: Keep the existing alignment for all frontages and for all three epochs by maintaining or changing the standard of protection. The policy covers those situations where works are carried out in front of the existing defences (such as beach recharge or building offshore breakwaters etc) to improve or maintain the standard of protection provided by the existing defence line, and other works involving operations to the back of existing defences (such as building secondary floodwalls) where they form an essential part of maintaining the current coastal defence system;

b) '**Maximum landward realignment'**: Landward managed realignment to the maximum extent per epoch as defined in the playing field, including land use adaptation as required;

c) **'Habitat led' realignment**: Setting a target size for the increase of intertidal habitat per epoch and find the most appropriate frontages to achieve this;

d) '**Local rebalancing'**: rationalise the alignment of the defence (if needed) to optimise the value for agriculture, habitats and other interests.

N.B. As previously mentioned, the example above applies to only one section of The Wash, but it is important to note that during the process of identifying the playing field the policies of 'No Active Intervention' and large scale 'Managed Realignment' have effectively been ruled out as unrealistic for most of The Wash.
(Hunstanton Cliffs currently has the policy of NAI and it is therefore a realistic option for appraisal in this location for all epochs).

Next, having established the project playing field and decided on the policy packages which are realistic enough to be taken forwards, the policy appraisal is carried out using qualitative scores per objective as illustrated by Table 2. Each individual objective will be assessed against the predicted shoreline evolution resulting from the chosen policy package, and results will be indicated by a combination of a number and colour.

Table 2: Scoring of assessment per objective

Decreasing fulfilment of Objective ↓	Score	Description	Associated Colour
	9	The scored Objective will be **fulfilled** by the Policy Package	
	8		
	7		
	6	The scored Objective will be **partially fulfilled** by the Policy Package	
	5		
	4		
	3	The scored Objective will **not be fulfilled** by the Policy Package	
	2		
	1		

For each Policy Development Zone, this assessment will be undertaken for each agreed Policy Package, and for all three Epochs (0-20 years, 20-50 years and 50-100 years).
A narrative will also be included for each Objective for further explanation of the impact of the Policy Package on the specific Objective.

'Key value' graphics have also been developed to aid in the assessment, these cross sections illustrate the key values for each discrete frontage around The Wash and help to visualise their relative significance in each location.

The cross sections typically consist of up to 5 zones:
A: Intertidal zone, seaward of the defences
B: Zone among existing defences
C: Zone between most landward existing defence line and belt of established settlements
D: Belt of established settlements
E: Zone landward of belt of established settlements, up to high ground.

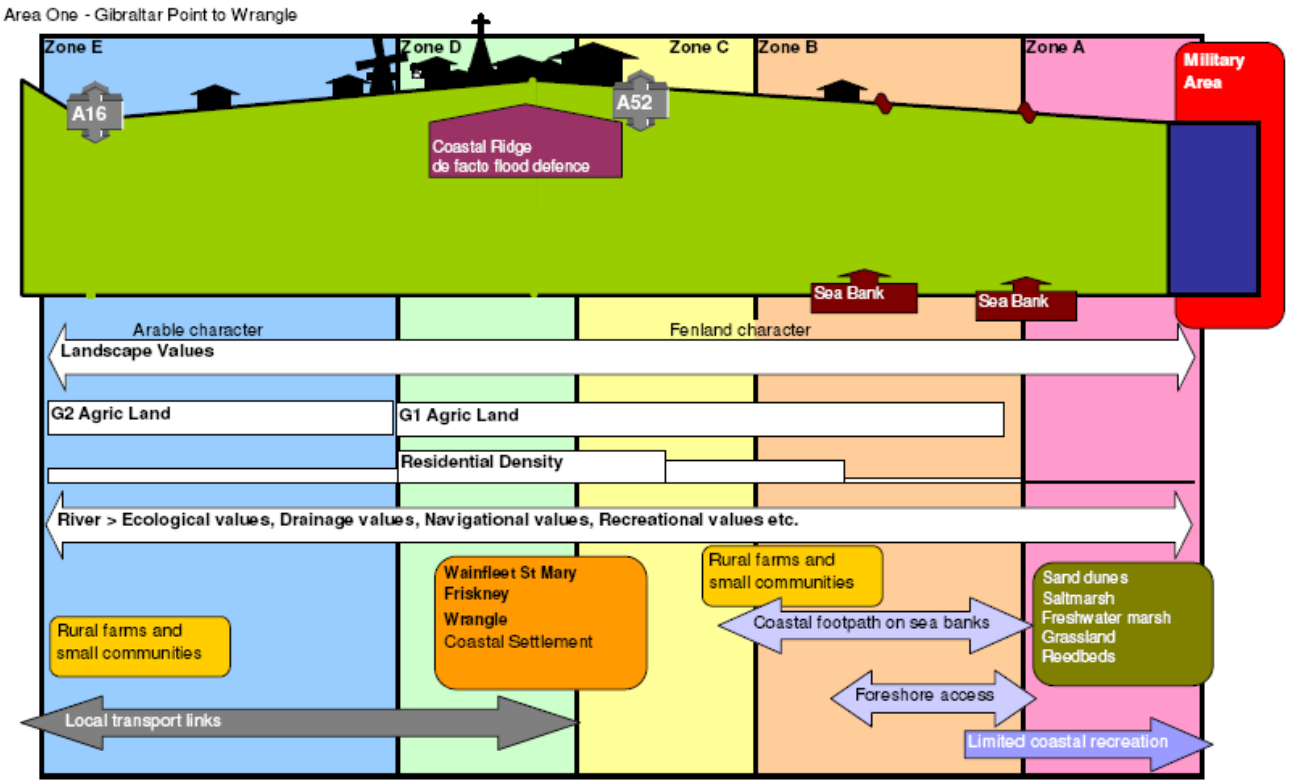


Figure 5: Key Value graphic for Gibraltar Point – Wrangle

The initial findings of the policy appraisal will be subject to a process of 'fine tuning' by the CSG and EMF (re-examining scores if they don't accurately reflect local specifics or the relative importance of values in different areas, or agreeing on the realistic extents of any proposed realignments etc). Once these scores are agreed, they will be presented as in Table 3 below.

Table 3: Results of assessment per objective

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
1. XXX	5	Text	4	Text	1	Text
2. XXX	9	Text	7	Text	6	Text

Finally, an aggregate score for each Objective category will be calculated and visualised schematically to provide an overview of an individual PDZ using symbols to represent the Objectives. The symbol is then shaded in green, orange, or red, to visualise how well a policy package scores against each category of Objectives – **Figure 6** below shows how these summaries will look.

The policy which achieves the best balance of Objectives (and is then agreed by the CSG and EMF) will be presented as the preferred option for each Policy Development Zone and each epoch.

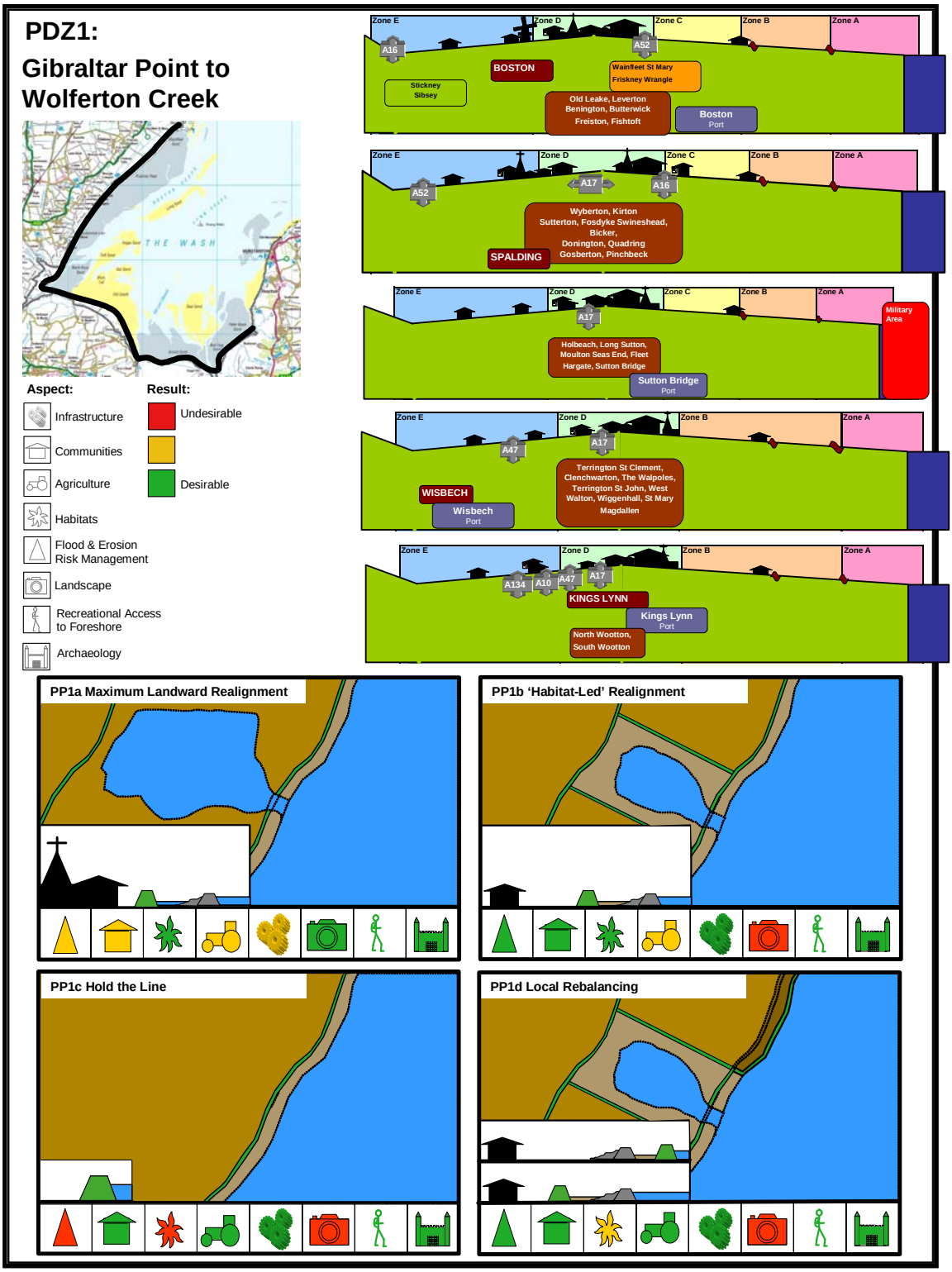


Figure 6: Draft policy appraisal graphic for PDZ1, combining key value cross sections and appraisal results for objective categories

Next steps

Once the policies have been appraised against the objectives through the process described above and the preferred options identified and agreed by the CSG and EMF, a draft SMP will be produced containing:

- Policy statements for each policy unit, outlining:
  -details of they policies for each time period and how they will be put into practise
  -justification of the policies

- A realistic action plan for putting the SMP into practice

Please see **Table 4** and **Figure 7** on the following pages for generic examples of these deliverables relating to a fictional frontage. This gives an idea of the format and content of the draft SMP. At the time of production of this report, local examples had not progressed sufficiently far to be included.

The draft SMP will be issued for 3 months public consultation in early 2009. During this time, the public, key stakeholders (including Local Authorities) and interested parties will be invited to comment on the preferred policies via paper questionnaire either contained within the draft SMP or handed out at public events, the Wash SMP email address, or via an electronic version of the questionnaire online.

All responses submitted during this time will be collated and reviewed, and any necessary revisions to the draft SMP will be made to incorporate valuable information, take account of any breaking developments, or address any specific omissions or errors etc.

Once any changes have been made, the agreed preferred policies will be formally adopted by the organisations represented on the CSG and EMF, feedback will be given to consultees as to how their comments have been addressed, and the final SMP will be published and disseminated.

Table 4: Example policy statement table using a fictional frontage

Location reference: 'Frontage X' **Policy Unit reference: 2d15**	
Summary of Plan recommendations and justification **Plan:** There is a requirement to avoid a promontory being formed along this section, which would impact on the sediment supply along this coast and be detrimental for the defence of adjacent areas. Therefore in the long-term a retreat policy will be implemented, which would improve sediment input and throughput. This would, however, impact on seafront properties at Frontage X; therefore measures need to be put in place to manage the risk and potential relocation/ mitigation of loss of properties and land. Due to the seafront assets, in the short term it is recommended that this retreat be managed through continued maintenance of existing defences, whilst technically and economically acceptable.	
Policies to implement Plan:	
From present day:	The policy for the immediate future is to **hold the line** through maintaining the existing defences until they reach the end of their effective life (i.e. minor repairs may be carried out during this period). However, these defences should not be enhanced or replaced. With maintenance, the concrete seawall along the southern section of this frontage is estimated to have a residual life of 15 to 20 years, although the timber revetment and groynes may fail before this. This policy will continue to protect assets so that measures can be put in place to manage or mitigate for loss. This policy will not be detrimental to the long-term Plan due to the rapid nature of shoreline response along this coastline once defences are no longer in place.
Medium-term:	Once the existing defences fail, it would not be economically viable or technically appropriate to replace them with similar structures. There is also a need to ensure sediment input to adjacent shorelines to enhance defence there. Therefore the medium-term policy is to allow the coast to retreat, through a policy of **managed realignment**. Measures will need to be in place to manage risks along this frontage, as any retreat will result in the loss of cliff top land and mainly holiday properties.
Long-term:	The long-term policy is to allow coastal retreat, through **no active intervention**, as the most sustainable option. This will ensure sediment is provided to beaches both here, thus not accelerating erosion, and to adjacent coasts. Whilst further loss of some property will occur, the main village of 'X' is expected to be mostly unthreatened by retreat over the next century.

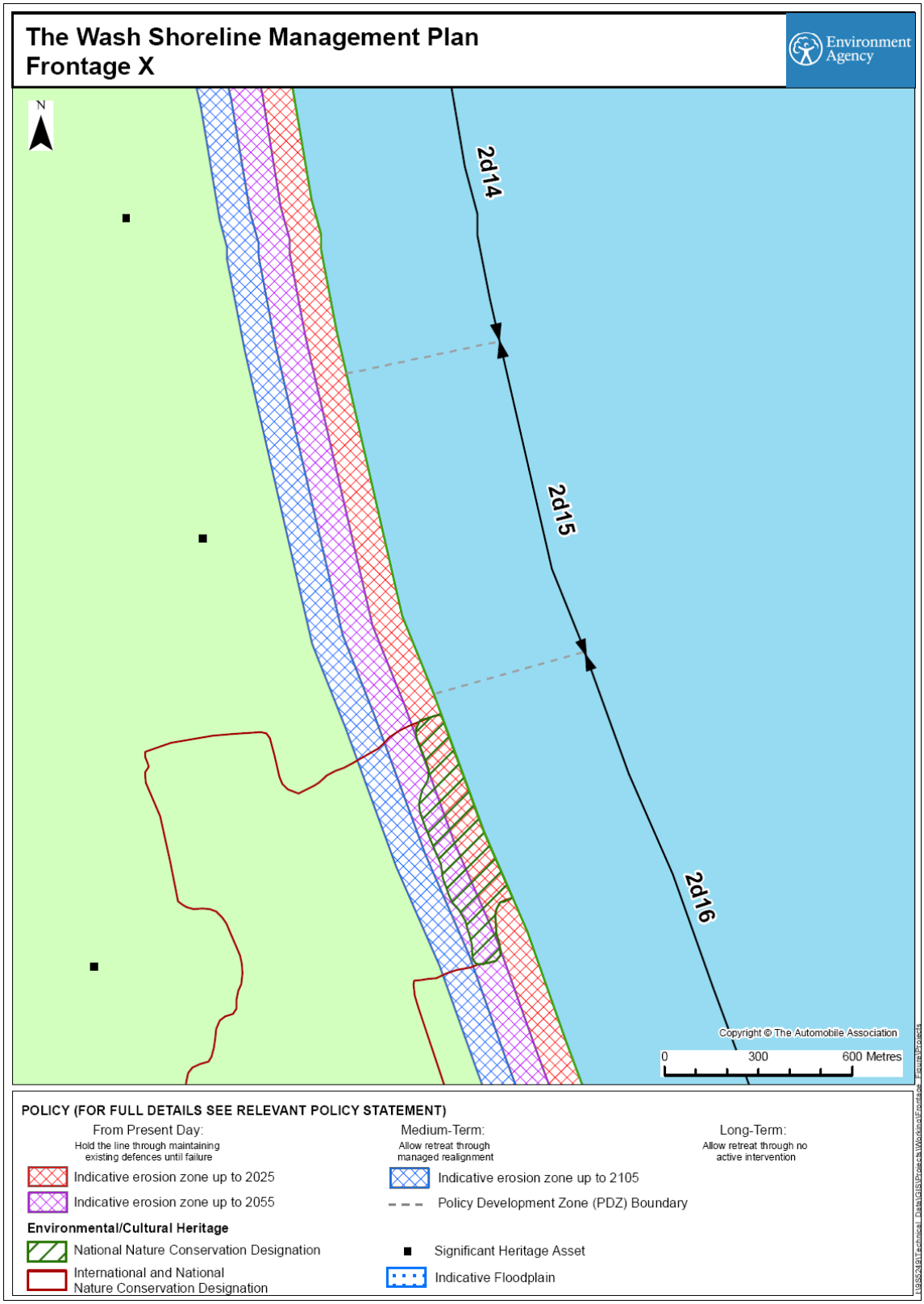


Figure 7: Example of policy mapping using a fictional frontage

If you have any comments or questions, please contact us at the addresses below:

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Appendix A:

Project governance – The roles of the Client Steering Group, Elected Members Forum and Key Stakeholders Group.

Client Steering Group

The Client Steering Group (CSG) has overall responsibility for the delivery of the SMP. The CSG initiates the SMP development process, undertakes any scoping tasks requires and manages the development and adoption processes.

The Wash CSG comprises the main client local authorities for the SMP, plus representatives from Natural England and other authorities such as County Councils. The Environment Agency is the Lead Authority for this SMP and has responsibility for procurement, management and administration of the Consultant.

Roles and responsibilities of the CSG include:

- Providing Client expertise in deciding the scope and extent of the SMP
- Maintaining liaison with Defra
- Reporting back to Client organisations
- Working in partnership with the Consultant to develop:
  - the overall scope of the SMP
  - the issues to be dealt with by the SMP
  - the priority of the issues
  - the objectives for the SMP
  - the draft proposals of the SMP

- Directing consultation, including methods and material to be employed
- Overseeing public consultation
- Seeking ratification of the SMP policies
- Supporting their respective members at the Elected Members Forum

Elected Members Forum

The involvement of Elected Members in the process of SMP development reflects the 'Cabinet' style approach to decision making operating in many local authorities. It comprises of elected Member representatives from local authorities and members of our Regional Flood Defence Committees. Members are involved from the beginning, thereby minimising the risks of producing a draft document with policies that are not approved by the local authorities. The members are involved through a forum, building trust and understanding with the Client Steering Group.

Roles and responsibilities of the Elected Members include:

- Agreeing the activities of the Client Steering Group
- Agreeing the overall scope of the SMP
- Agreeing the stakeholder engagement strategy
- Agreeing key stakeholders representation
- Agreeing the issues to be dealt with by the SMP
- Agreeing the priority of the issues
- Agreeing the objectives for the SMP

- Agreeing the draft proposals from the Consultant
- Reviewing and/or agreeing the policies to be contained within the draft SMP
- Communicating project progress and messages back to their respective full councils, and seeking ratification of SMP policies

Key Stakeholders Group

A Key Stakeholder is a person or organisation with a significant interest in the preparation of, and outcomes from, a shoreline management plan. This includes agencies, authorities, organisations and private bodies with responsibilities or ownerships that affect the overall management of the shoreline in a plan.

The Key Stakeholder Group (KSG) acts as a focal point for discussion and consultation through development of the plan. The membership of the group should provide representation of the primary interests within the study area, ensuring consideration of all interests during the review of issues. This group will be involved through meetings and workshops. The incorporation of this group provides direct feedback and information to the CSG and EMF.

Roles and responsibilities of the Key Stakeholder Group include:

- Amending its membership to suit the issues to be considered within the SMP
- Suggesting issues and their priorities to be considered within the SMP
- Meeting periodically throughout the production of the SMP
- Providing comments on proposals being made by the CSG and EMF

Appendix B: Example features and issues table

Feature	Issue associated with Feature	Affect Policy?	Benefits / Why is issue important?	Beneficiaries	Scale	What could affect its value/ sustainability? (Threats)	Is there enough of this benefit?	Potential for substitution	Objectives
The Wash National Nature Reserve	Modification due to change in coastal processes/management	Yes	Yes Recreational, educational and economic (via tourism) benefits	Broader society	National	Various, including: -Coastal squeeze -Development -Disturbance	Yes	No	To maintain the conservation, amenity and educational benefits of the NNR
Built properties east of A52	In the event of encroachment of sea inland - displacement of residents and loss of housing stock	Yes	Yes Homes for people – loss of housing stock and alteration of local communities	Individual residents/ local community	Local	Direct loss through coastal flooding or coastal erosion Loss of roads or services Loss of value due to envisaged future coastal management/natural change	No	Yes	To ensure that the risk to properties from coastal erosion and coastal flooding is minimised
Shell fisheries	Acute decline in shellfish abundance from long term pre-1980s levels	Yes	Economic value	Local economy	Regional	Water quality/ Sedimentation Bird predation Over-fishing	No	No	To enable recovery of the shell fisheries

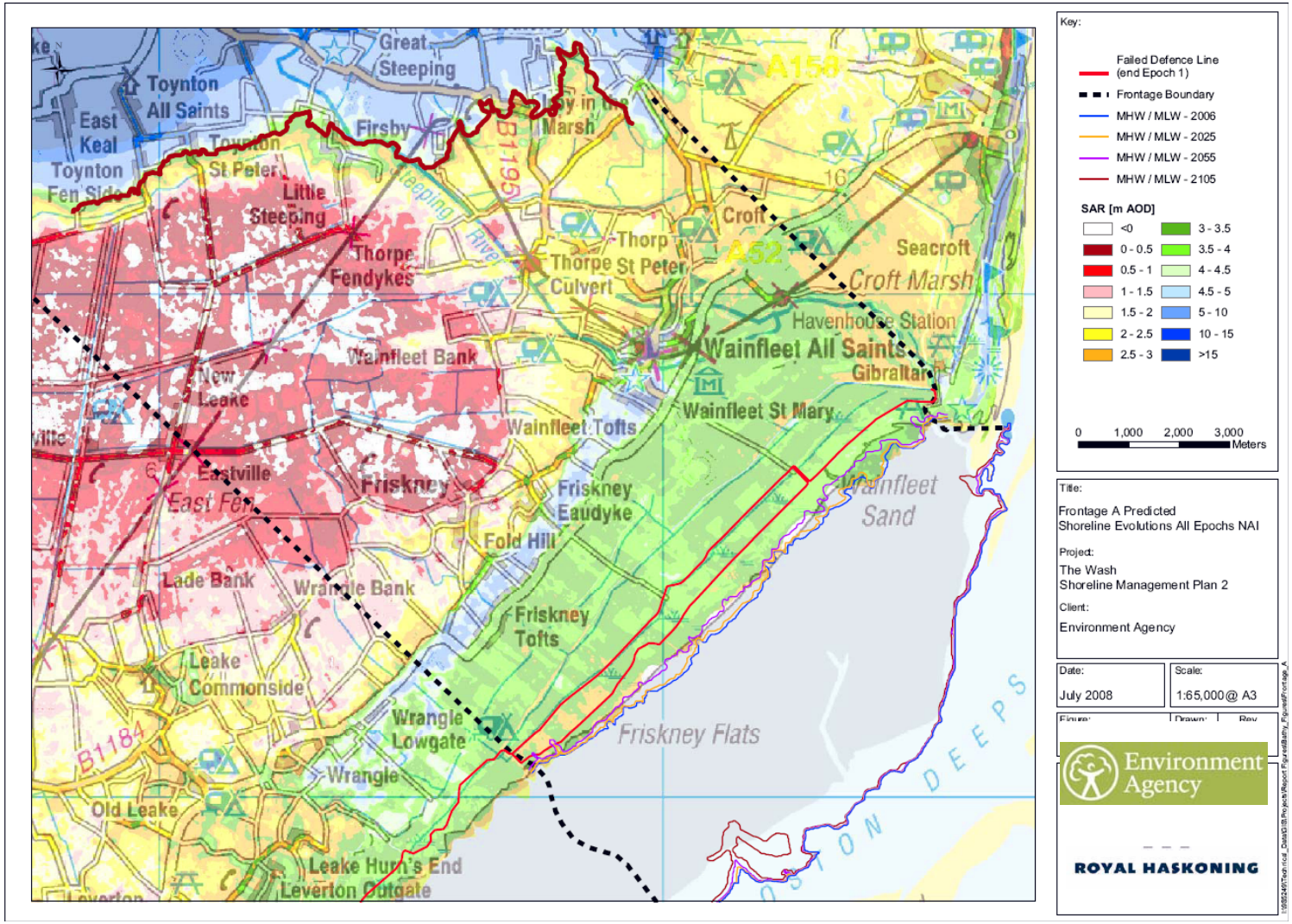
N.B. This table provides an example by reproducing a very small proportion of the representative issues identified within the SMP. The full table (which will appear in the SMP document) contains all the major features and issues recognised as important by the EA Project Team, Client Steering Group and Elected Members Forum during meetings, and by the Key Stakeholders Group/general public in responses returned from a data-gathering questionnaire that was circulated at the beginning of the SMP process, and during public awareness events held in March 2008.
This information is invaluable as it provides local input, thereby ensuring the project addresses locally important issues, plus it lays the groundwork in identifying broad themes such as agriculture, housing, the environment etc on which to base policy appraisal objectives.

Appendix C: Baseline scenarios for frontage A

Frontage A – **Wainfleet and Friskney**	**No Active Intervention (NAI), Predicted Change For:**		
	Epoch 1 - *Years 0 – 20 (2025)*	**Epoch 2 - *Years 20 – 50 (2055)***	**Epoch 3 - *Years 50 – 100 (2105)***
	• Defences remain.	• Defences will have failed by the beginning of this Epoch.	• No defences remain.
	• Continued vertical accretion across the saltmarsh and mudflat. • Landward movement of the mean high and mean low water marks. • Movement seaward of the saltmarsh/mudflat boundary. • Expect a general increase in established saltmarsh. • Towards the end of the Epoch flooding will occur only on the highest tides of the year, or during high tides combined with adverse weather conditions.	• No further increase in saltmarsh area. • More frequent inundation of the former reclaimed area, particularly during storm events. • Backshore will be subject to localised areas of erosion during storm events.	• Overall decrease in saltmarsh area. • Increased inundation of the former reclaimed areas, during the majority of high tides. • Towards the end of the Epoch, the backshore will begin to see the initial stages of saltmarsh development (landward of the mean sea level).

Frontage A – **Wainfleet and Friskney**	**With Present Management (WPM), Predicted Change For:**		
	Epoch 1 - *Years 0 – 20 (2025)*	**Epoch 2 - *Years 20 – 50 (2055)***	**Epoch 3 - *Years 50 – 100 (2105)***
	• Defences remain.	• Defences remain	• Defences remain. • Need for higher, strengthened sea banks.
	• Continued vertical accretion across the saltmarsh and mudflat. • Landward movement of the mean high and mean low water marks. • Movement seaward of the saltmarsh/mudflat boundary. • General increase in established saltmarsh.	• Continued vertical accretion across the saltmarsh and mudflat. • Landward movement of the mean high and mean low water marks, at higher rates than seen in Epoch 1. • Increased pressure on the saltmarsh/mudflat boundary, but it should be able to hold its position. • Steepening of the saltmarsh/mudflat profile, causing it to become unstable, particularly during storm events.	• Tendency for erosion. • Rate of sedimentation significantly outpaced by rate of sea level rise. • Reduced rate of vertical accretion on both the saltmarsh and mudflat. • Further landward movement of the mean high and mean low water marks. • Landward movement of the saltmarsh/mudflat boundary. • Coastal squeeze • Large loss of saltmarsh area.

Figure 8: Mapping of the 'No Active Intervention' baseline scenario for the section of frontage from Wainfleet to Friskney showing the predicted Mean High, and Mean Low Water marks for each future Epoch, and for the present day. This clearly shows the value of the defences in this area



Appendix D:

Principles of the SMP

-To balance flood and erosion risk management with the value of the features that it protects.

-To ensure that shoreline management takes into account longer term adaptation options.

-To develop policies for flood and erosion risk management that will enable appropriate future development.

-To ensure that localised decisions do not affect the natural balance of the coastline and shoreline management elsewhere.

-To ensure that shoreline management supports the continuation of sustainable patterns of development and considers possible effects on communities and their welfare.

-To ensure that shoreline management informs the land use planning system.

-To ensure that shoreline management supports the sustainable provision of the social and economic values of the area to the wider society.

-To ensure that shoreline management supports conservation and enhancement of biodiversity.

-To ensure that shoreline management takes into consideration the management objectives of environmentally designated sites and species.

-To ensure that shoreline management recognises the character of the coastal landscape.

-To ensure that shoreline management has regard to the historic environment.

Appendix E:

Objectives for Gibraltar Point to River Witham (including Boston)

Flood and erosion risk

- Minimise flood risk to people, property and the environment
- Have as little flood and erosion risk management throughout the plan period as possible
- Maximise the use of existing man-made or natural defences (e.g. saltmarsh) where possible: the inland lines of (historical) defences and the ridge of high ground between Wainfleet and Wrangle

Communities

- Protect as many settlements as possible
- Protect as a minimum, throughout the plan period, to an appropriate standard of protection, all established strategic settlements in the unit and the area landward from these settlements

Habitats

- Maintain natural processes relating to mudflats, saltmarsh, sand dunes and saline lagoons
- Maintain and if possible increase the area of mudflats, saltmarsh, sand dunes and saline lagoons
- Possible objectives related to habitats in defended area
- Ensure that the impact on the UK's area of intertidal habitat is acceptable

Agriculture

- Protect as much grade 1 and grade 2 land as possible
- Ensure that the impact on the UK's area of grade 1 and grade 2 land is acceptable

Infrastructure

- Avoid interruption of the functioning of Boston Port throughout the plan period
- Avoid interruption of the drainage function of River Witham throughout the plan period
- Avoid interruption of transport connections and utility supply throughout the plan period

Timing of policies

Provide sufficient time, if required, for

- community adaptation
- change of flood risk management practices
- relocation of regional infrastructure, ensuring continued A-road and rail transport links between Boston and Skegness
- relocation / adaptation of MoD use of the foreshore, prison facilities and sewage works
- research of archaeological features and ecological surveys