Humber Estuary Coastal Authorities Group

Flamborough Head to Gibraltar Point Shoreline Management Plan

Appendix J - Strategic Environmental Assessment Environmental Report

Final

December 2010




Prepared for

Humber Estuary Coastal Authorities Group

Revision Schedule

Flamborough Head to Gibraltar Point Shoreline Management Plan
Appendix J - Strategic Environmental Assessment: Environmental Report

December 2010

Rev	Date	Details	Prepared by	Reviewed by	Approved by
CD1	2 November 2009	Consultation draft	**Clare Postlethwaite** Consultant	**Laura Mitchell** Engineer	**David Dales** Director
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Table of Contents

J1 Non-Technical Summary

What is a Shoreline Management Plan?

J1.1 A Shoreline Management Plan is a plan for managing coastal flood and erosion risk for a particular stretch of coastline looking at the short, medium and long-term. This Shoreline Management Plan covers the coastline from Flamborough Head to Gibraltar Point including the outer Humber Estuary.

J1.2 Shoreline Management Plans identify policies for sections of coastline in order to best manage coastal flood and erosion risk to people and the developed, historic and natural environment.

What is Strategic Environmental Assessment?

J1.3 Strategic Environmental Assessment is a system for assessing the environmental consequences of certain plans and programmes. The requirements of the process are set out in European legislation known as the SEA Directive. The aim of Strategic Environmental Assessment is to ensure that the impact on communities, the natural and historic environment, landscape, material assets, climatic factors, water, soil and air are fully taken into consideration when planning decisions are made.

J1.4 Strategic Environmental Assessment is not legally required for Shoreline Management Plans, however, the Department for the Environment, Food and Rural Affairs recommend that the environmental impacts (in their widest sense) of Shoreline Management Plans are assessed using a Strategic Environmental Assessment process.

What is this document?

J1.5 This document is the Environmental Report which details the Strategic Environmental Assessment process for the Flamborough Head to Gibraltar Point Shoreline Management Plan.

J1.6 This document includes the following information:

- A summary of a range of policies, plans, programmes, strategies and initiatives which are relevant to the Shoreline Management Plan;
- A summary of the current situation across a range of topics including: agriculture and industry; coastal processes; communities; flood and erosion risk; historic environment; infrastructure; landscape; natural environment; and tourism.
- A description of the assessment process undertaken for this Shoreline Management Plan. In summary, this involved the splitting the coastline into a number of areas of similar character and identifying policies for assessment for each area. Based on the information about the current situation, objectives were identified for each area covering the topics listed above. These objectives were used to assess the policies selected for each area. The final preferred policies were selected based on the assessment process and additional checks were made about environmental legislation and whether the policies provided more benefits than the cost of putting them into practice. This process was undertaken through consultation with a range of organisations and decisions were reached through consensus between partner organisations at a series of workshops throughout the process.

- A summary of the likely significant environmental effects (in their widest sense) of the Shoreline Management Plan;
- A summary of where negative environmental effects have been avoided, reduced or where compensation will be needed;
- A set of recommendations for future monitoring of expected environmental impacts.

What is the Environment like between Flamborough Head and Gibraltar Point?

J1.7 The coast between Flamborough Head and Gibraltar Point has been divided into 21 character areas, which reflect the diverse nature of the coastline. There are varied and complicated issues; in summary, the Holderness cliffs (in the northern section of the SMP area) are made of glacial till (clay) and are eroding quickly, by as much as 2 metres per year along much of the Holderness coastline. The coastline is defended in some stretches by lengths of coast protection works (e.g. at Bridlington, Hornsea, Mappleton, Withernsea and Easington). Further south, the tidal floodplain of the Humber includes some of the most productive agricultural land in the UK as well as major concentrations of industrial and commercial properties.

J1.8 Within the Humber area, there are large areas which are protected for their ecological importance. Within East Lindsey, coastal defences protect extensive areas of low-lying land which are potentially at risk of flooding from the sea. The Environment Agency undertakes the Lincshore scheme which artificially nourishes a 24 kilometre stretch of coastline between Mablethorpe and Skegness.

J1.9 There are a number of documents that relate to the environment along this stretch of coastline and a number of policies and legislations in place to protect this. All relevant information was collated and has been summarised in this document.

How do you check whether the Shoreline Management Plan will have an impact on the Environment?

J1.10 The different policies regarding coastal management between Flamborough Head and Gibraltar Point have been checked to see what effect they could have on a number of features: biodiversity (animals and plants), populations and health (the local community), soil, water, air, climate factors, landscape and cultural heritage. The policies that will have the least harmful impacts are then used in the Shoreline Management Plan.

Will the Shoreline Management Plan have an impact on the Environment?

J1.11 The Shoreline Management Plan proposes policies to manage coastal processes, erosion and flood risk along the coast between Flamborough Head and Gibraltar Point.

J1.12 The addition of new or maintenance of existing coastal defences may have an effect on the landscape which will be managed to reduce any potential negative impacts. There may also be an impact on the ecology of the shoreline as intertidal habitat is lost to coastal squeeze

between the existing shoreline and the defences. This may cause beaches to narrow, which could have an adverse effect on tourism and the economy of coastal resorts.

J1.13 For the areas where the preferred policy option is 'No Active Intervention' and the coast is already eroding, there will be the loss of areas of agricultural land and some residential properties.

J1.14 Overall, the Shoreline Management Plan will have a positive effect on the Environment by protecting the majority of households and businesses against flooding and coastal erosion. Improved and maintained coastal defences in the towns and settlements along the coast will also be an important step in ensuring economic growth and attracting investment and more tourism to the area.

J2 Introduction

Introduction to Strategic Environmental Assessment

J2.1 Strategic Environmental Assessment (SEA) is a process that ensures appropriate consideration is given to the environment during the development of certain plans and programmes. SEA is based on a European Directive (2001/42/EC), which has been transposed into domestic law (SI 1633, 2004). The Directive entered into force in the UK on 21 July 2004 and applies to a range of plans and programmes, although is not a statutory requirement for Shoreline Management Plans (SMPs).

J2.2 SEA involves the systematic identification and evaluation of the potential environmental impacts of high-level decision-making (e.g. a plan or programme). By addressing strategic-level issues, SEA aids the selection of the preferred options, directs individual schemes towards the most appropriate solutions and locations for the environment and helps to ensure that resulting schemes comply with legislation and other environmental requirements. The SEA process also facilitates a transparent audit trail of how the Plan has been revised to take into account the SEA.

J2.3 Guidance on producing Shoreline Management Plans (Defra, 2006a, b) states that the potential environmental effects of all policies must be considered before deciding which policies will be adopted. Consideration should be made with regards to both the positive and negative effects of options on wildlife and habitats, populations and health, soil, water, air, climate factors, landscape, cultural heritage and the inter-relationships between these receptors.

J2.4 It is important to note that production of an SEA is not a statutory requirement for an SMP; however, Defra SEA guidance recommends that the approach described in the SEA Directive is used so this methodology will be followed when undertaking this assessment.

J2.5 This document constitutes the Environmental Report or Stage C (see) of the process of providing an SEA for the Flamborough Head to Gibraltar Point SMP. The SEA methodology has been developed using the following documents and guidance:

- Environment Agency guidance: Strategic Environmental Assessment – internal plans and strategies (2009);
- Environment Agency guidance: Strategic Environmental Assessment – advice for application to Shoreline Management Plans (2009);
- English Heritage guidance: Shoreline Management Plan Review and the historic environment (2006); and
- Shoreline Management Plan guidance: Volume 1: Aims and requirements (2006).

Introduction to Shoreline Management Plans

J2.6 A Shoreline Management Plan (SMP) provides a large-scale assessment of the risks associated with coastal processes and presents a long-term policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner. An SMP aims to manage risk by employing a range of methods which reflect both national and local priorities, to:

- reduce the threat of flooding and erosion to people and their property; and
- benefit the environment, society and the economy as far as possible, in line with the Government's 'sustainable development principles '.

J2.7 Guidance on the production of SMPs published by Defra (Defra, 2006a) provides the following SMP objectives:

- 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; and
- meet international and national nature conservation legislation and aim to achieve the biodiversity objectives.

J2.8 Four generic SMP policy options available for shoreline management in the second generation SMPs are presented in Table 2.1. The choice of policy for shoreline management depends on the technical, environmental, social and economic characteristics of each section of coastline.

Table 2.1 Shoreline Management Policies

Shoreline management policy	Description of policy
Hold the line (HtL)	Hold the existing defence line. This policy will cover those situations where work or operations are carried out on the existing defences (such as beach recharge, rebuilding the toe of a structure, building offshore breakwaters and so on. Included in this policy are other policies that involve 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.
Advance the line (AtL)	Advance the existing defence line by building new defences on the seaward side of the original defences. Using this policy should be limited to those policy units where significant land reclamation is considered.
Managed Realignment (MR)	Managed realignment by allowing the shoreline to move backwards, with management to control or limit movement (such as reducing erosion or building new defences on the landward side of the original defences).
No Active Intervention (NAI)	No active intervention, where there is no investment in coastal defences or operations.
* These policies may be applied to any of the three timescales: short term (up to the year 2025), medium term (between 2025 and 2055) and long term (between 2055 and 2105). These three periods are known as 'epochs' within the SMP.	

J2.9 In addition to the four generic shoreline management policy options described in Table 2.1, this SMP has made use of a fifth policy: hold the line on a realigned position (HR). This has been used for reasons of clarity in areas where the policy is managed realignment for an early epoch. The policy of hold the line on a realigned position may then be specified for subsequent epochs (in preference to a hold this line policy) as this gives greater clarity over which defence line is being held.

J2.10 Where flood risk is an issue, shoreline management policies which explicitly address flood risk are also considered. The Catchment Flood Management Plan (CFMP) policies (P2-P5) are assessed in terms of viability/applicability for the flood risk of specific sections of the coast. P2 – P5 are defined as:

- P2: Reduce activity level, accepting increase of risk over time
- P3: Continue at existing activity level, accepting gradual increase in risk over time due to future changes
- P4: Increase activity level to sustain existing level of flood risk into the future, compensating for future changes.
- P5: Increase activity level to reduce flood risk, despite future changes

J2.11 SMPs are the first stage in Defra's hierarchy of plans for achieving coastal and flood defence protection. SMPs are a high-level planning document identifying policies to manage risks. The next stage is the production of Strategies which identify appropriate schemes to put the SMP policies into practice. The final element of work is undertaken at scheme level where different options are compared and a preferred option selected and designed for putting the preferred scheme into practice.

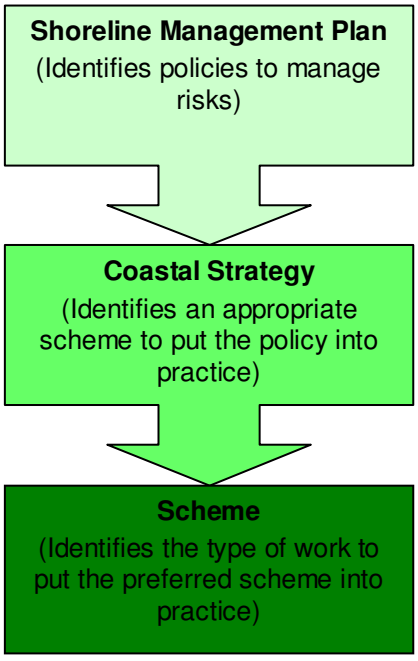


Figure 2.1: Defra's hierarchy of coastal plans

J2.12 The current program of SMPs around the coast is a review of the first generation of SMPs produced in the 1990s and reflects the availability of new coastal processes information, new considerations (such as new legislation), and greater certainty about climate change.

J2.13 SMPs are part of the evidence base for strategic planning documents, such as Regional Spatial Strategies and Local Development Frameworks.

Relationship between Shoreline Management Plan development and Strategic Environmental Assessment

J2.14 The Strategic Environmental Assessment process was fully integrated into the appraisal of shoreline management policies. Figure 2.2 shows the stages in the SEA process.

Scoping report

J2.15 An SEA scoping exercise was carried out as the first stage in the process of providing an SEA for this SMP. The scoping report was sent for consultation to Natural England, the Environment Agency, English Heritage, East Riding of Yorkshire Council and the CSG. Comments received were incorporated into the final scoping report.

J2.16 The scoping report laid the foundation for the main SEA Environmental Report; in particular the scoping report identified the main receptors that should be assessed by the SEA process. A data review was carried out as part of the scoping study, to identify any data gaps. The scoping report also identified issues that were outside the scope of the SEA process and which would not be considered further in the assessment. See section 2.3 below for further details of the identification of receptors. The final SEA Scoping Report is included in Annex E of this report.

Environmental Report

J2.17 This SEA Environmental Report was produced based on the Scoping Report. The CSG, including Natural England, the Environment Agency, English Heritage and the four local authorities as well as the Quality Review Group were consulted on the draft Environmental Report and comments received were incorporated into the final revision. A full table of comments and responses is provided in Annex G of Appendix B of the SMP. The comments and responses from the Quality Review Group are provided in Annex H of Appendix B of the SMP.

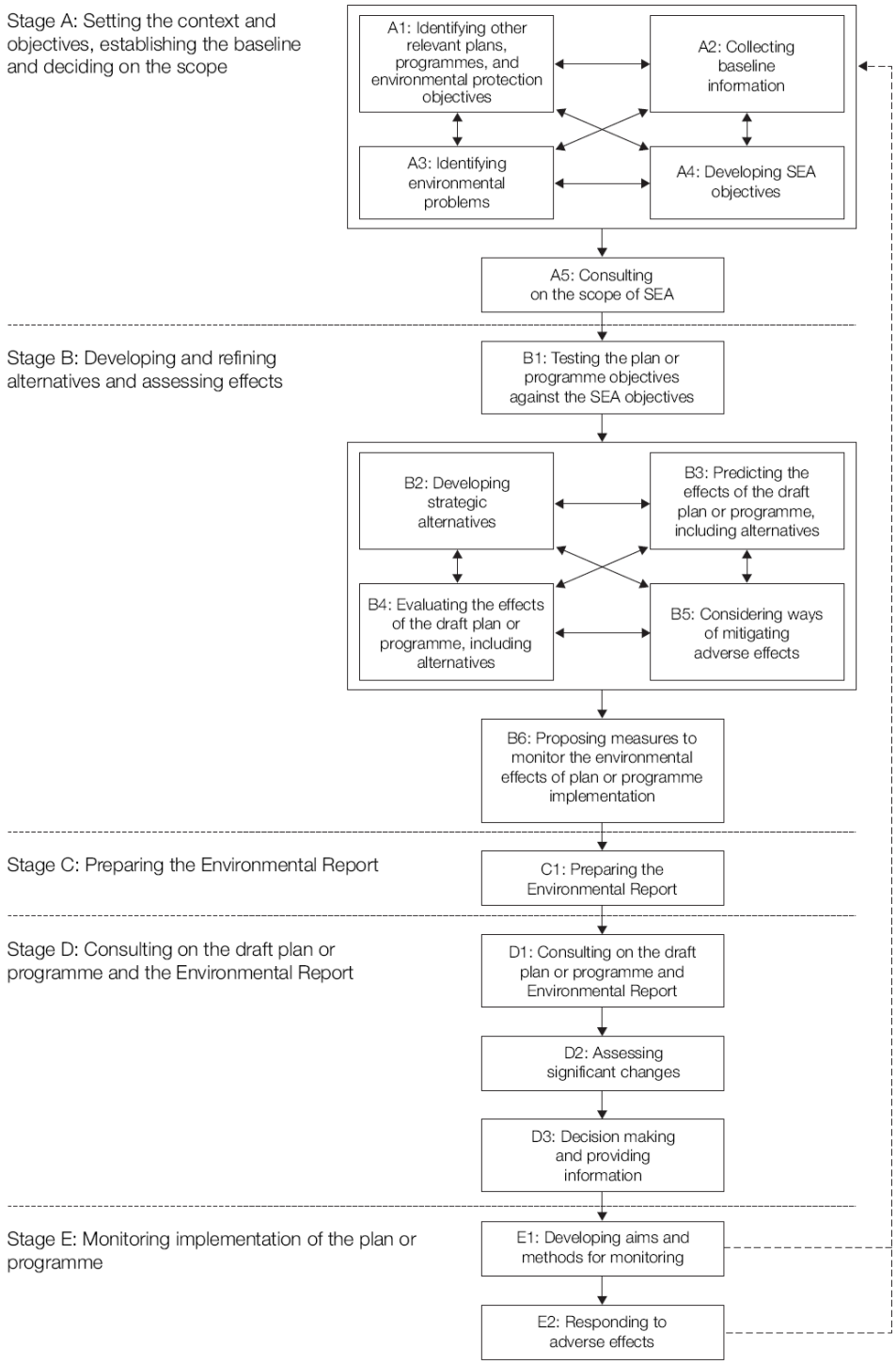


Figure 2.2 SEA Stages

SEA receptors

J2.18 Defra SEA guidance recommends that the approach described in the SEA Directive is used, so this methodology will be followed when undertaking this assessment. The SEA methodology lists the receptors that should be considered by the SEA process, these are:

- Human health;
- Population;
- Biodiversity;
- Fauna;
- Flora;
- Material assets;
- Cultural heritage including architectural and archaeological heritage;
- Landscape;
- Climatic factors;
- Water;
- Soil; and
- Air.

SMP appraisal topics

J2.19 The client steering group agreed the SMP appraisal topics which should be assessed as follows:

- Flood and erosion risk;
- Communities;
- Natural environment;
- Agriculture and industry;
- Tourism;
- Infrastructure;
- Historic environment;
- Landscape; and
- Coastal processes.

J2.20 Figure 2.3 demonstrates how the SEA receptors link to the SMP appraisal topics, as described above and established by the client steering group.

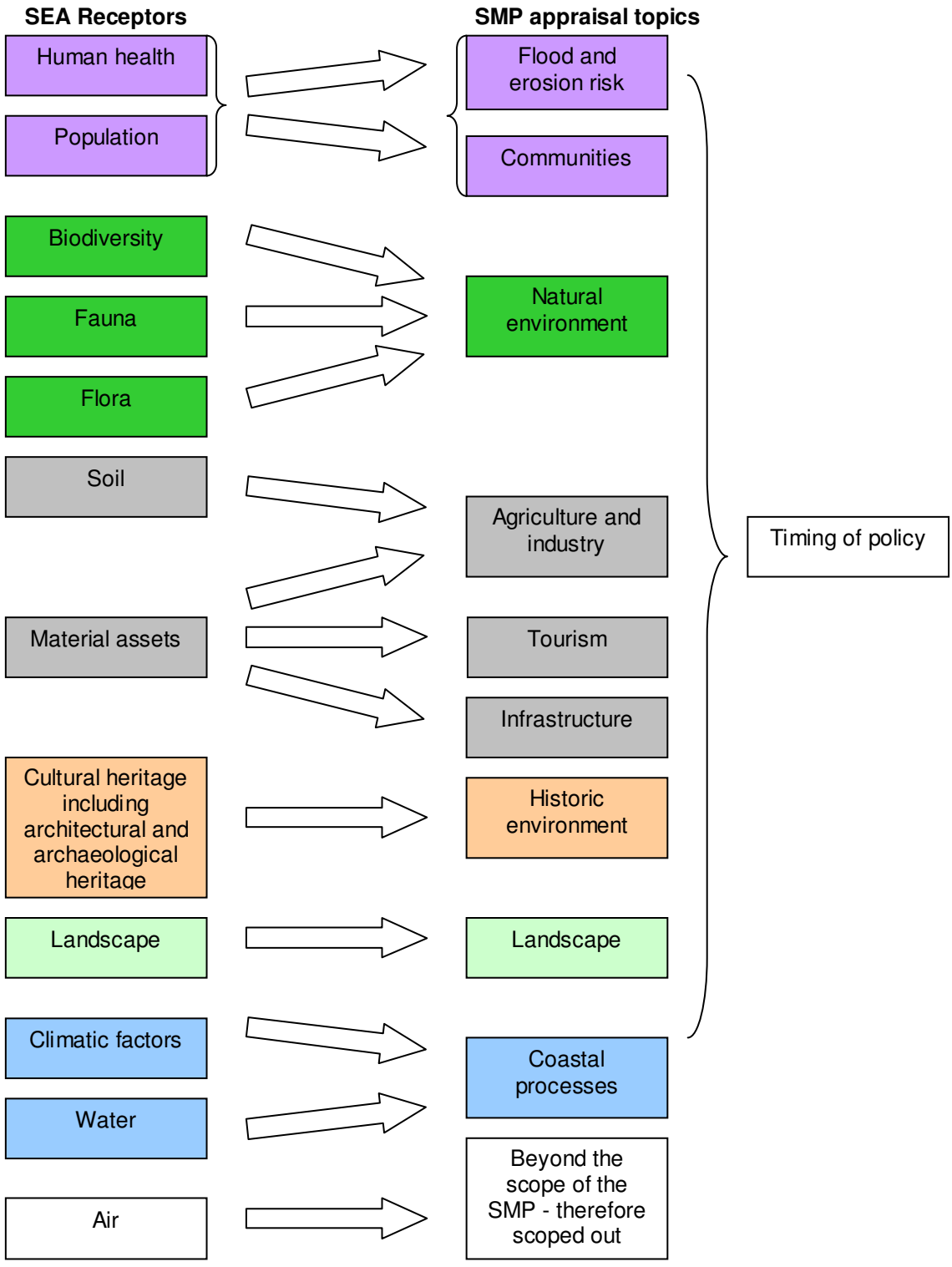


Figure 2.3 Relationship between SEA receptors and SMP policy appraisal topics

J2.21 It was established at the Scoping stage, that Soil and Air quality were deemed to be issues beyond the scope of the SMP. However, it has subsequently been recognised that while soil quality is beyond the scope of the SMP, there is the potential for impacts on soils from areas of eroding coast where the preferred policy is either 'No active intervention' or 'Managed realignment'. In such areas, there is the potential for areas of land to be lost to the sea in Policy Units B-I through erosion.

J2.22 Based on the mapping showing erosion lines accompanying the policy statements in Chapter 9 of the Main Document, it is estimated that over the length of undefended frontage, almost no grade 2 agricultural land will be lost to erosion by 2025, approximately 10 hectares between 2025 and 2055, with further grade 2 agricultural land lost by the end of the Plan period in 2105. It is estimated that over the length of undefended frontage, approximately 160 hectares of grade 3 and 4 agricultural land will be lost to erosion by 2025, approximately 280 hectares between 2025 and 2055 with further losses of grade 3 and 4 agricultural land by the end of the Plan period in 2105.

J2.23 Soils will therefore be assessed within the SEA, within the heading of Agriculture and Industry, as the largest areas of land that will be lost are predominantly agricultural.

J2.24 The relationship between the stages of the SEA and the remainder of the tasks for the SMP is shown in ; this report constitutes the Environmental Report or Stage C. See Chapter J3 below for further details of the SEA methodology.

Table 2.2: Relationship between SEA and SMP

	SEA	SMP
Stage A	Setting the context and objectives and establishing the baseline and deciding on the scope	Scope the SMP Assessments to support policy development
Stage B	Developing and refining alternatives and assessing effects	Policy development
Stage C	Preparing the Environmental Report	Draft SMP preparation
Stage D	Consultation on the draft plan and Environmental Report	Public examination Review and finalisation of SMP
Stage E	Monitoring implementation of the plan	Plan dissemination and implementation

Background to HECAG Shoreline Management Plan

J2.25 This SMP has been commissioned by the Humber Estuary Coastal Authorities Group (HECAG) and covers the coastline from Flamborough Head to Gibraltar Point. Scott Wilson has been commissioned to prepare the Shoreline Management Plan.

J2.26 This SMP covers an area which comprises an amalgamation of two first generation SMPs; the first HECAG Shoreline Management Plan covered the coast from Flamborough Head to Humberston Fitties and was published in 1998. The Lincolnshire coast from Humberston Fitties to Gibraltar Point was considered separately in the Lincolnshire Shoreline Management Plan, prepared under the direction of the Anglian Coastal Authorities Group in 1996. Work undertaken since 1996 has established that sediment transport occurs across the mouth of the

Humber so processes along the Holderness coast have an impact along the Lincolnshire coastline. The boundary for the second Shoreline Management Plan has therefore been extended to ensure effective management of these wider coastal processes; the SMP covers the coastline from Flamborough Head to Gibraltar Point, which comprises sediment cells 2a, 2b and 2c. Figure 2.4 shows the study area.

J2.27 The northern open-coast boundary of the SMP is at Flamborough Head (as shown on Figure 2.4) where this SMP joins the adjacent North East Coastal Authorities Group (NECAG) SMP, to the north. Consideration of this area will need to take into account the No Active Intervention policy selected for Flamborough Head in the NECAG SMP and the fact that there are environmentally designated areas around Flamborough Head coastline which straddle both SMPs.

J2.28 The southern open-coast boundary of the SMP is at Gibraltar Point (as shown on Figure 2.4) where this SMP joins the adjacent Wash SMP, to the south. The boundary runs along the right bank of the River Steeping. Gibraltar Point spit system provides a morphological break between the sandy beaches to the north and the mudflats and salt marsh of the Wash; the Gibraltar Point spit system is included within this SMP.

J2.29 The estuary boundary of the SMP is the boundary of sediment cells 2a and 2b (HR Wallingford, 1993); Stone Creek on the north bank of the Humber and the eastern jetty at Immingham on the south bank of the Humber.

J2.30 The Humber Flood Risk Management Strategy has recently been published (March 2008) and the area covered by the Humber Flood Risk Management Strategy (shown as a green hatched area in Figure 2.4) overlaps the SMP area. The Humber Flood Risk Management Strategy covers the inner, middle and outer Humber Estuary including the coastline between Easington and Saltfleet. To ensure this overlap is addressed, there has been close communication between the project teams with the Humber Strategy team represented on the SMP Client Steering Group.

J2.31 This plan area covers a highly dynamic coastline with a great diversity of land use and environments. Much of the Holderness coastline has been subject to rapid erosion over recent centuries and due to the presence of human settlement at the coastal fringe, there are many conflicting local issues and objectives. The floodplain of the outer Humber Estuary includes some of the most productive agricultural land in the UK and major concentrations of industrial and commercial properties. In Lincolnshire flooding is the core issue, as there are extensive areas of land at or just above present day sea level.

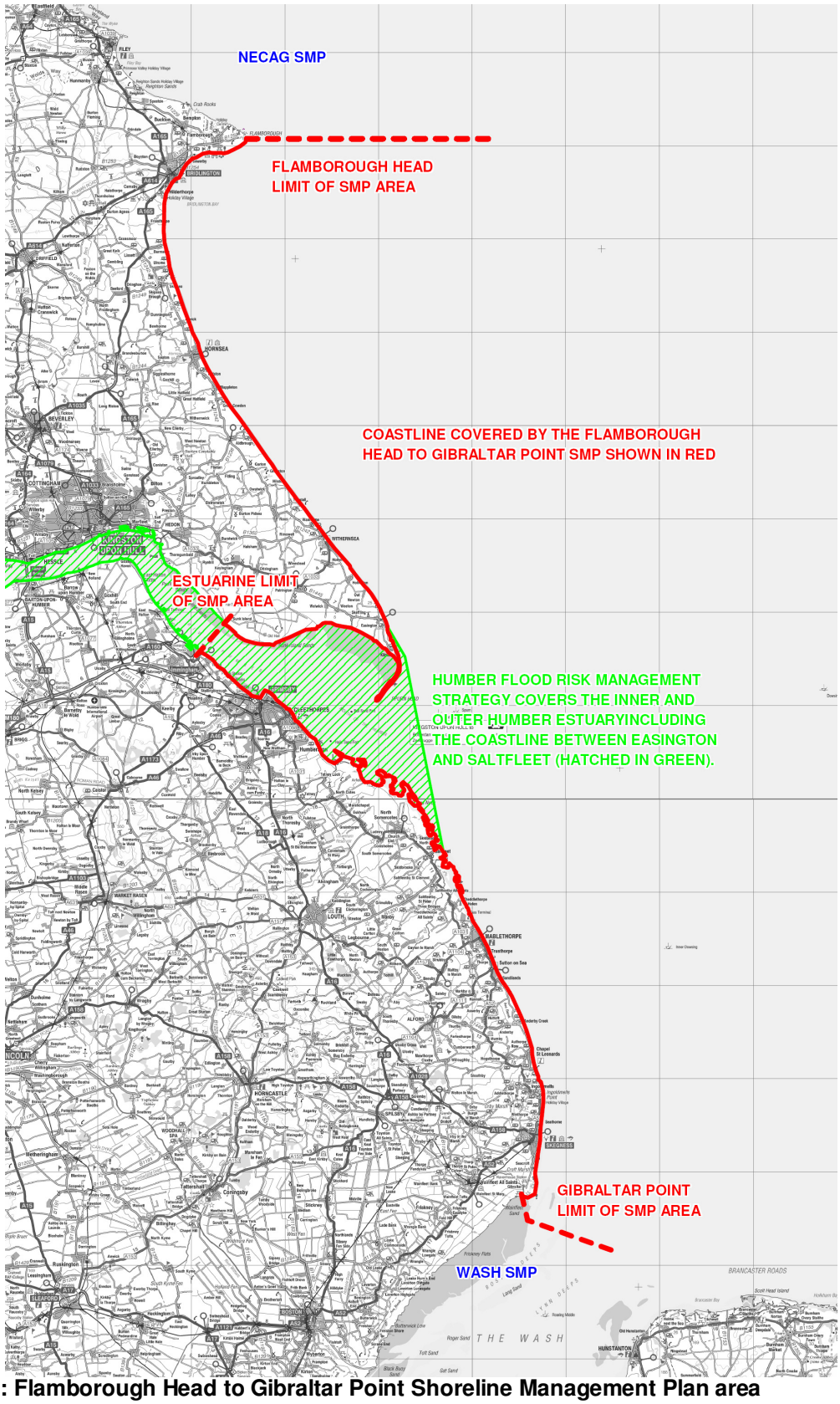


Figure 2.4: Flamborough Head to Gibraltar Point Shoreline Management Plan area

Structure of the Environmental Report

J2.32 The structure of the Environmental Report will build upon the findings of the SEA Scoping Report, and assess the impacts of the SMP policies on the receptors identified during the scoping process. In order to try and reduce the magnitude of unavoidable negative impacts, mitigation and monitoring measure will be proposed.

J2.33 A description of the SEA methodology is included in Chapter J3 and a breakdown of the SEA Directive requirements and where they are addressed in this report is shown in Table 4.

Table 2.3 SEA Directive Requirements

Environmental Report Requirements (from SEA Directive)	Section of this Report
(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;	Section J1
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Section J5
(c) the environmental characteristics of areas likely to be significantly affected;	Section J5
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC (The Birds Directive) and 92/43/EEC (The Habitats Directive);	Section J5
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	Section J4
(f) the likely significant effects on the environment, including on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage including architectural and archaeological heritage; landscape; and the interrelationship between the above factors;	Section J6
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Section J7
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Section J6
(i) a description of the measures envisaged concerning monitoring in accordance with Article 10;	Section J8
(j) a non-technical summary of the information provided under the above headings.	Section J1

J3 Assessment Methodology

J3.1 The SEA Directive requires that the environmental assessment is carried out during preparation of the Plan so that any environmental effects identified can be used to influence the decision-making process.

J3.2 At an early stage in the SMP, a set of principles was agreed among the organisations involved in developing the SMP that reflect the range of interests on the coast. These principles summarise what the SMP aims to achieve across the breadth of issues affected by the SMP. Some of these principles may be contradictory; during development of shoreline management policies, the intention is that an acceptable balance is sought between these competing interests. The following set of principles forms the basis for setting policy appraisal objectives for shoreline management. In applying the principles it should be understood that all principles are to be considered in conjunction with one another and that their order is not significant.

- To balance flood and erosion risk management in a sustainable manner appropriate to the overall value of the features affected;
- To ensure that shoreline management policies encompass longer term adaptation options, and give time for communities and individuals to adapt to changing climate conditions and levels of risk;
- To develop policies for flood and erosion risk management that will inform spatial planning processes and provide a robust evidence base for Local Development Frameworks;
- To support sustainable patterns of development and consider possible effects on communities and their welfare;
- To support the nationally, regionally and locally important social and economic assets of the area in a sustainable manner;
- To consider the effects of coastal change on local industries, agriculture and employment and provide a secure environment for economic activity and development;
- To ensure that local decisions do not have a disproportionately adverse affect on the natural balance of the coastline and shoreline management elsewhere;
- To contribute to the positive management and enhancement of environmentally designated sites and protected species, subject to natural change;
- To support the conservation and enhancement of biodiversity in the wider coastal zone;
- To support the maintenance and enhancement of the character of the coastal landscape;
- To support the preservation and enhancement of the historic environment; and
- To comply with legislative requirements and contribute to a safe and healthy environment.

J3.3 Based on the baseline information presented in Chapter J5 which highlights features and issues of importance along the coastline, combined with the understanding of how the shoreline will develop under different policies, the coastline was divided into nineteen areas of broadly similar character; these were termed Character Areas. The divisions between the areas have been created so that each area has a broadly similar character in terms of land use, geography and coastal character. Further detail about the divisions between character

areas and the key features and issues within each area is provided in Annex B. The boundaries between the character areas are shown in Figure 3.1.

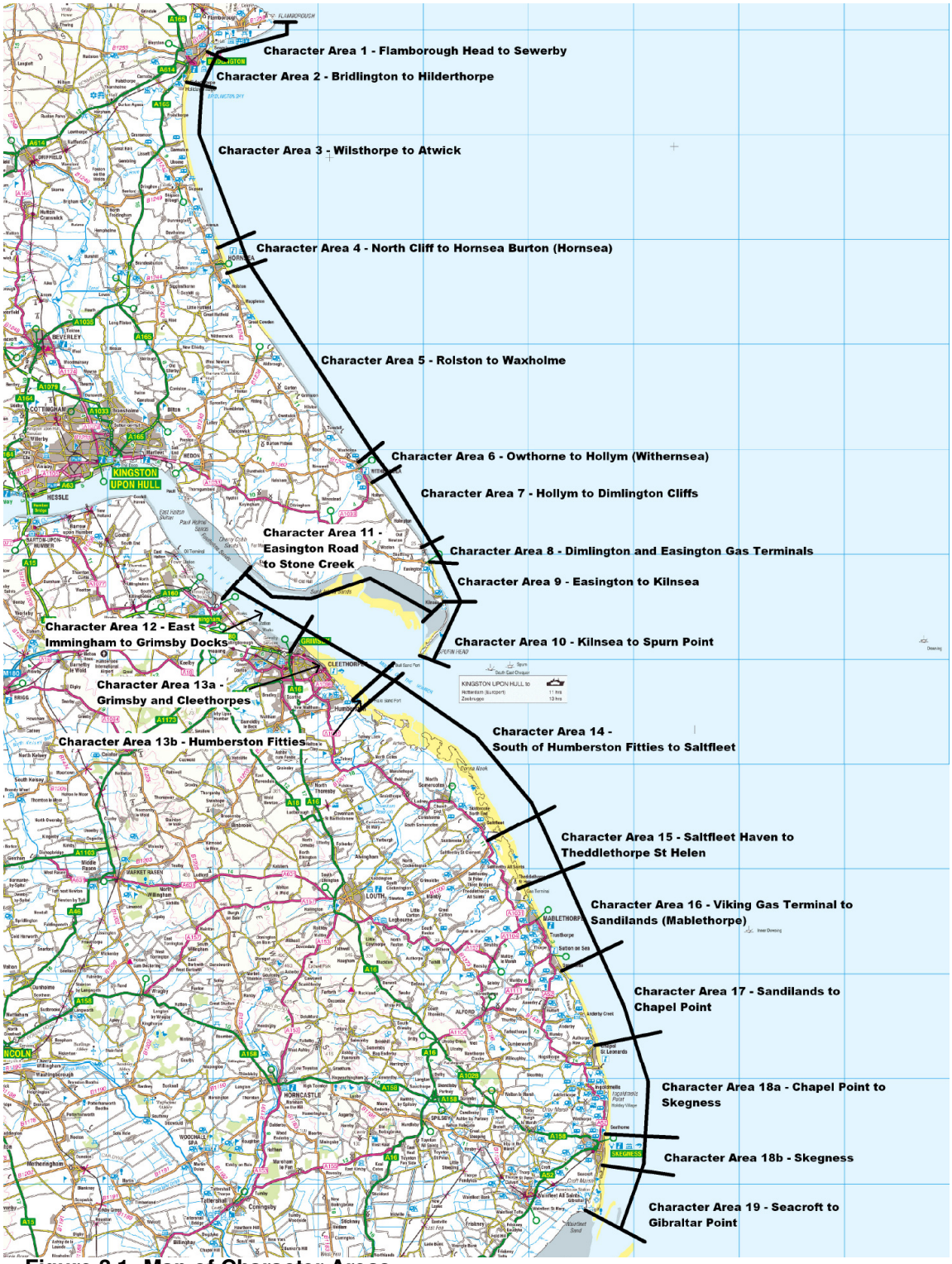


Figure 3.1: Map of Character Areas

Policy alternatives considered

J3.4 For each Character Area, SMP policies were identified for appraisal from Defra's four generic policy options (Table 2.1). In relevant areas, the flood risk management policies were also selected for appraisal. The policies were put forward if they were deemed sufficiently relevant and realistic to be worthy of full appraisal, but did not necessarily need to be viable.

J3.5 The policies agreed for appraisal are shown in Table 3.1. As shown in the table, some policies were discounted by inspection as there were not considered to be significant drivers for these policies. This decision was reached through consensus between partner organisations including the involvement of elected members.

Table 3.1: Summary of SMP policy options for each area

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
CA1 – Flamborough Head to Sewerby	This is the current policy and it was agreed that it would appraised for all epochs.	Ruled out for all epochs. There were no potential locations or drivers identified for Managed Realignment in this area.	There were no significant drivers in this area to make this a realistic general policy along the frontage. However the potential for local works to maintain access and the functionality of the lifeboat station at South Landing was identified..	The large scale seaward movement of the shoreline was ruled out for all epochs. There are large disadvantages (technically very difficult; loss of intertidal habitats) and no significant drivers in this area that would make this a realistic policy for appraisal.
CA2 – Bridlington to Hilderthorpe	Ruled out for all epochs. The potential loss of the large urban centre of Bridlington due to erosion was identified as a sufficiently significant driver to rule out a policy of No Active Intervention.	Ruled out for all epochs. There were no potential locations or drivers identified for Managed Realignment in this area.	This is the current policy and it was agreed that this policy should be appraised for all three epochs. P4 flood risk management policy to be appraised.	Although the large-scale seaward movement of the shoreline for the entire frontage was considered unrealistic, the potential for substantial land reclamation and an advancing of the defence line at the site of the proposed new marina was identified. It was agreed that this local Advance the Line policy should be appraised as part of an overarching policy of Hold the Line elsewhere. The marina scheme is planned to be undertaken during epoch 1 and would be appraised for this timeframe.
CA3 – Wilsthorpe to Atwick	This is the current policy for the majority of this frontage and would	A potential location for Managed Realignment was identified at	A Hold the Line policy would be appraised in all epochs due to the	The appraisal of a large-scale seaward movement of the

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
	be appraised for all epochs.	Barmston Outfall. Managed realignment would be appraised locally as part of an overarching policy of No Active Intervention along the frontage.	potential extent of cliff retreat and the value of assets at risk of being lost to erosion (i.e. agricultural land and rural businesses / settlements).	shoreline was ruled out for all epochs. There were no significant drivers identified in this area that would make this a realistic policy.
CA4 – North Cliff to Hornsea Burton (Hornsea)	Ruled out for all epochs. There were no significant drivers identified that would warrant the appraisal of a No Active Intervention policy.	Ruled out for all epochs. There were no significant drivers identified that would warrant the appraisal of a significant landwards Managed Realignment of the defences.	This is the current policy would be appraised for all epochs. P4 flood risk management policy to be appraised.	The appraisal of a large scale seaward movement of the shoreline was ruled out for all epochs. There is no significant driver in this area that would make this a realistic policy.
CA5 – Rolston to Waxholme	This policy would be appraised for all epochs as it is the current policy for the majority of this frontage. This policy would only be appraised in epoch 3 for the currently defended section at Mappleton as no drivers were identified for ceasing maintenance of the defences at Mappleton before epoch 3.	A potential location for Managed Realignment was identified at Tunstall drain. This local Managed Realignment policy would be appraised as part of an overall policy of No Active Intervention for the frontage as a whole.	A Hold the Line policy would be appraised in all epochs for the entire frontage due to the potential extent of cliff retreat and the value of assets at risk of being lost to erosion (e.g. agricultural land and rural businesses / settlements). In addition to this large scale Hold the Line policy, a local policy of Hold the Line at Mappleton would be appraised for all epochs, and then just for epochs 1 and 2 as part of another overarching policy such as No Active intervention for the rest of this area. This is because Mappleton is currently defended due to the close proximity of the settlement and the B1242 to the cliffs.	The appraisal of a large-scale seaward movement of the shoreline was ruled out for all epochs. There were no significant drivers in this area that would make this a realistic policy.
CA6 – Owthorne to Hollym (Withernsea)	Ruled out for all epochs. There were no significant drivers identified that warrant the appraisal of a policy of No Active Intervention.	Ruled out for all epochs. There were no significant drivers identified that would warrant the appraisal of a significant landwards Managed Realignment of the defences.	This is the current policy and would be appraised for all epochs. P4 flood risk management policy to be appraised.	The appraisal of a large scale seaward movement of the shoreline was ruled out for all epochs. There are no significant drivers in this area that would make this a realistic policy.

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
CA7 – Hollym to Dimlington Cliffs	This policy would be appraised for all epochs as it is the current policy for this frontage.	Ruled out for all epochs. There are currently no defences along the frontage that could be realigned.	This policy would be appraised in all epochs due to the potential extent of cliff retreat and the value of assets at risk of being lost to erosion (i.e. agricultural land and rural businesses / settlements).	There are no significant drivers identified in this area that would make this a realistic policy.
CA8 – Dimlington and Easington Gas Terminals	This policy would be appraised for epochs 2 and 3 as the current planning permission of defences is due to expire by 2025. The current planning status also demands the removal of defences at this time.	A Managed Realignment policy ruled out as if the current Hold the Line policy was abandoned, No Active Intervention would be most sensible as there would be no significant drivers for a landwards realignment of defences.	A Hold the Line policy should be appraised in all epochs due to potential for the Gas Terminals to continue functionality. This provides a significant driver to warrant evaluation of a protection scheme. Current planning status states that defences should be removed at the end of epoch 1, however it was anticipated that the defence life may be extended, and a Hold the Line policy therefore required appraisal.	There were no significant drivers identified in this area that would make this a realistic policy for appraisal.
CA9 – Easington to Kilnsea	This policy was identified for appraisal for the currently undefended areas with no flood risk. This policy was ruled out for flood risk areas due to the potential severity and extent of flooding that could result.	This policy was identified for appraisal. This has been identified as worthy of appraisal due to the predicted loss of lagoon habitats in front of the flood bank due to sea level rise and the issue of maintaining flood defence sustainability in the future. P4 appraised.	This policy was identified as being worthy of appraisal due to the significant flood risk. P4 appraised.	There were no significant drivers identified in this area that would make this a realistic policy for appraisal.
CA10 – Kilnsea to Spurn Point	This policy would be appraised for all epochs as there were potential legal and sustainability issues identified over providing defences in this area. This would include a conscious decision not to maintain or rebuild the access road if the barrier breaches and does not	A Managed Realignment policy would be appraised involving managing and maintaining the integrity of the barrier as long as this is sustainable. This would include artificially helping to maintain and heal the barrier following breaching if necessary. The access	This policy would be appraisal in all epochs due to the potentially adverse effects identified of a non-healing barrier breach on estuarine navigation and on the towns of Grimsby and Immingham.	There were no significant drivers identified in this area that would make this a realistic policy for appraisal.

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
	naturally re-heal.	road would also be maintained by a process of rebuild and roll back as the barrier realigns		
CA11 – Easington Road to Stone Creek	A No Active Intervention policy was considered unviable for appraisal in this area due to the large flood cell at risk and need not be appraised.	The appraisal of a wholesale Managed Realignment policy was not deemed relevant for appraisal due to the highly valuable agricultural assets in the floodplain. It was recognised that there could be potential for localised managed landward realignment of the defences as part of an overarching Hold the Line policy to ensure defence sustainability and compliance with environmental legislation. P4 appraised.	This policy was identified as being worthy of appraisal due to the significant flood risk to valuable assets in the flood lain such as high grade agricultural land. P4 appraised.	There were no significant drivers identified in this area that would make this a realistic policy for appraisal.
CA12 – East Immingham to Grimsby Docks	A No Active Intervention policy was considered unviable for appraisal in this area due to the large flood cell at risk and need not be appraised.	The appraisal of a wholesale Managed Realignment policy was not deemed relevant due to the lack of potential sites and the highly industrial and urbanised nature of the coastal hinterland. It was recognised that there could be potential for localised managed landward realignment of the defences by epoch 3. This should be appraised as part of an alternative overarching policy such as Hold the Line for the frontage as a whole.	This policy would be appraised in all epochs due to the potential loss due to flooding and erosion of valuable assets (i.e. industry, major transport links, large employment area etc.). P4 flood risk management policy to be appraised.	By virtue of commercial interests and due to ABP recently advancing the current defence line in specific areas, the Advance the Line policy would be appraised for specific locations for all epochs. This would be appraised as part of an overarching policy of Hold the Line elsewhere.
CA13a – Grimsby and Cleethorpes	A No Active Intervention policy was considered unviable for appraisal in this area due to the highly populated hinterland and the large flood cell at risk.	Ruled out for all epochs. There were no significant drivers identified that would warrant the appraisal of a significant landwards Managed Realignment of the defences.	This is the current policy and would be appraised in all epochs. P4 flood risk management policy to be appraised.	There were large disadvantages identified (adverse effects on navigation; loss of intertidal habitats; increased flood defence management; sustainability of defences) and no

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
				significant drivers in this area that would make this a realistic policy for appraisal.
CA13b – Humberston Fitties	A No Active intervention policy was considered unviable for appraisal in this area due to the highly populated hinterland and the large flood cell at risk.	Potential for Managed Realignment using the existing secondary defence line at Humberston Fitties.* Managed Realignment of defences would be appraised. P4 evaluated.	This is the current policy and would be appraised in all epochs. P4 flood risk management policy to be appraised.	There were large disadvantages identified (adverse effects on navigation; loss of intertidal habitats; increased flood defence management; sustainability of defences) and no significant drivers in this area that would make this a realistic policy for appraisal.
CA14 – South of Humberston Fitties to Saltfleet	A No Active intervention policy was considered unviable for appraisal in this area due to the large flood cell at risk.	Although this policy would not be appraised on a large scale, the provision of local Managed Realignment should be appraised as part of an overarching policy, such as Hold the Line.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	It was recognised that although not currently a realistic policy for appraisal, there may be potential for land reclamation schemes in the future if the current trend for accretion continues. Although this policy would not apply to the whole frontage, the provision of local Advance the Line in epoch 3 as part of another overarching policy such as Hold the Line for the frontage as a whole would be considered.
CA15 – Saltfleet Haven to Theddlethorpe St Helen	Due to the potential for flooding to significant areas, No Active Intervention was ruled out for appraisal.	Local Managed Realignment of defences would be considered in epoch 3. By epoch 3 the potential for technical feasibility and the safety issues associated with increasing the height of the current defences exists and thus an alternative policy requires appraisal for defence sustainability purposes. This would be appraised as part of	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There were large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and no significant drivers in this area that would make this a realistic policy for appraisal.

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
		an overarching Hold the Line policy for the area as a whole.		
CA16 – Viking Gas Terminal to Sandilands (Mablethorpe)	A No Active intervention policy was considered an unviable option for appraisal in this area due to the highly populated hinterland and the large flood cell at risk.	Local Managed Realignment of defences would be considered in epoch 3. By epoch 3 the potential for technical feasibility and the safety issues associated with increasing the height of the current defences exists and thus an alternative policy requires appraisal for defence sustainability purposes. This would be appraised as part of an overarching Hold the Line policy for the area as a whole.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There were large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and no significant drivers in this area that would make this a realistic policy for appraisal.
CA17 – Sandilands to Chapel Point	A No Active Intervention policy was considered an unviable option for appraisal in this area due to the large flood cell at risk.	Local Managed Realignment of defences would be considered in epoch 3. By epoch 3 the potential for technical feasibility and the safety issues associated with increasing the height of the current defences exists and thus an alternative policy requires appraisal for defence sustainability purposes. This would be appraised as part of an overarching Hold the Line policy for the area as a whole.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There were large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and no significant drivers in this area that would make this a realistic policy for appraisal.
CA18a – Chapel Point to Skegness	A No Active intervention policy is considered an unviable option for appraisal in this area due to the large flood cell at risk.	Local Managed Realignment of defences would be considered in epoch 3. By epoch 3 the potential for technical feasibility and the safety issues associated with increasing the height of the current defences exists and thus an alternative policy	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There are large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and there were no significant drivers in this area that would make this a realistic policy for appraisal.

Character Area	No active intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
		requires appraisal for defence sustainability purposes. This would be appraised as part of an overarching Hold the Line policy for the area as a whole.		
CA18b – Skegness	Ruled out for all epochs. The potential loss of the large urban centre of Skegness, and the large flood cell at risk were identified as significant drivers to rule out a policy of No Active Intervention.	Due to the locally higher topography, and large urban centre, Managed Realignment was not considered realistic for appraisal.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There were large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and there are no significant drivers in this area that would make this a realistic policy for appraisal.
CA19 – Seacroft to Gibraltar Point	A No Active intervention policy was considered an unviable option for appraisal in this area due to the large flood cell at risk of flooding.	Managed Realignment of defences would be appraised in epoch 3 as a potential alternative policy to Hold the line. It was recognised that Increasing rates of sea level rise could make maintaining current defence alignments unsustainable. Also an alternative policy option should be considered in case adjustments to the defence alignments are required to meet environmental legislation.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies for appraisal.	There were large disadvantages identified (loss of intertidal habitats; increased flood defence management; sustainability of defences) and there are no significant drivers in this area that would make this a realistic policy for appraisal.

SEA Assessment

J3.6 Based on the features and issues of importance identified in the baseline review and the general principles within which the SMP is developed (see paragraph J3.2), a set of SEA assessment criteria were developed to aid in the identification of likely significant effects upon the environment of implementing the SMP (shown in Table 3.2). From these criteria, locally specific objectives were developed for each area and these were used to assess the impact of the policy (examples are shown in Table 3.2). It is these SMP objectives that have been used for the SEA assessment since they cover the range of receptors listed in the SEA Directive, with the exception of 'soil' and 'air' which have been scoped out as SMP policies will have no significant impact on these receptors. Table 3.2 shows the relationship between the SEA receptors, SMP topics and the general and examples of the locally specific objectives used in the assessment.

Table 3.2: Assessment criteria

SEA Receptor	SMP policy appraisal topic	Issue	Assessment criteria	Example locally specific objectives
Population/ human health	Flood and erosion risk/ communities	The scoping exercise has identified that communities within the SMP area are at risk of coastal flooding and erosion. There are significant pockets of deprivation along the coastal strip. The scoping exercise has identified that sufficient time is needed to allow communities to adapt to changes resulting from shoreline management.	• Does the Plan minimise coastal flood and erosion risk to people and property and protect all settlements? • Does the Plan provide sufficient time if necessary for community adaptation?	• Minimise coastal flood and erosion risk to people and property • Protect as many settlements as possible. • Maintain Grimsby and Cleethorpes as viable towns, seaside resorts and regional commercial centres throughout the plan period. • Provide sufficient time, if necessary for community adaptation. • Provide sufficient time, if necessary for provision of recreational access to the foreshore.
Material assets / Soil	Agriculture and industry	The scoping exercise has identified that there are potentially large areas of agricultural land at risk of coastal flooding. There are also areas of high grade agricultural land at risk from coastal erosion. There are a number of assets of national importance located at the coastline which are affected by shoreline management policy.	• Does the Plan ensure that the impact on the UK's area of agricultural land is acceptable? • Does the Plan protect as much grade 1 and grade 2 land as possible?	• Ensure the impact on the UK's area of agricultural land is acceptable • Protect as much grade 1 and 2 agricultural land as possible. • Maintain and enhance the viability of the Dimlington and Easington gas terminals.
Material assets	Tourism	The scoping exercise has identified that tourism is a key input to the local economy.	• Does the Plan avoid interruption to the local tourist industry?	• Maintain and enhance the viability of a diverse tourism economy.
Material assets	Infrastructure	There are a number of assets of regional and local importance (such as roads, railways, drainage infrastructure and other services)	• Does the Plan avoid interruption to the functioning of the regionally and locally important social and	• Avoid interruption to the functioning of pumping stations and other key community services and

SEA Receptor	SMP policy appraisal topic	Issue	Assessment criteria	Example locally specific objectives
		which may be affected by coastal flooding or erosion over the lifetime of the SMP.	economic assets of the area?	utilities infrastructure. • Provide sufficient time, if necessary for relocation/ adaptation of sewage treatment works and other key community services and utilities infrastructure.
Biodiversity/ Flora/ Fauna	Natural environment	There are a number of internationally, nationally and locally environmentally designated sites along the coast, important for the wildlife and habitats that they support. These designations confer legal obligations in the case of internationally designated sites. Environmental policy documents recommend maintenance and, where possible, improvements to the quality of environmental sites. The scoping exercise has identified that there are areas at risk from coastal squeeze, including areas of salt marsh and saline lagoon. Some fragmentation of habitats has been identified, particularly in coastal areas which are used for recreation or where land reclamation has historically taken place.	• Does the Plan ensure that there are no adverse impacts to the UK's internationally designated sites and that the impact on habitats and protected species is acceptable? • Does the Plan support the conservation and enhancement of biodiversity in the wider coastal zone and provide sufficient time for ecological surveys?	• Ensure that the impact on the UK's internationally designated habitats is acceptable. • Maintain and where possible enhance the extent of Flamborough vegetated chalk cliff habitat. • Provide sufficient time, if necessary for ecological surveys.
Cultural heritage including architectural and archaeologica	Historic environment	The scoping exercise has identified that there are cultural heritage assets at risk from coastal erosion and flooding, including	• Does the Plan minimise damage to designated and significant historic environment assets from cliff erosion,	• Minimise damage to designated and significant historic environment assets (such as Great and Little Cowden

SEA Receptor	SMP policy appraisal topic	Issue	Assessment criteria	Example locally specific objectives
heritage		Scheduled Ancient Monuments, Listed Buildings and Conservation Areas.	flooding and coastal defence works, and provide sufficient time for adequate mitigation to alleviate negative impacts upon those assets?	DMVs and Ringbrough WW2 features) from cliff erosion, where possible. • Ensure coastal defence works do not threaten designated and significant historic environment assets, where possible. • Provide sufficient time, if necessary, for research of archaeological features.
Landscape	Landscape	The scoping exercise has identified the quality of the coastal landscape is a key feature of some areas of this coastline. Coastal defences have the potential to have an impact on coastal landscape quality.	• Does the Plan maintain and, where possible, improve the quality of the coastal landscape?	• Maintain and where possible, improve the quality of the coastal landscape.
Climatic factors/ water	Coastal processes	The scoping exercise has identified that sea level rise and climate change are likely to increase coastal erosion and flooding in the future.	• Does the Plan prevent interruption of coastal processes which supply sediment to other coastlines?	• Prevent interruption of coastal processes which supply sediment to other coastlines.
Air	Issues beyond the scope of the SMP – therefore scoped out			

J3.7 Following the identification of policy options for appraisal, policy packages were developed. Policy packages comprised coherent 'strings' of policies representing a particular intent of management and were used as intermediary mechanisms to assist and rationalise the appraisal process. By combining policy options into logical assemblages, an efficient comparison of various policy options could be undertaken. Without this rationalisation process, assessment of the enormous number of different policy combinations over the whole frontage would have been an extremely lengthy and an inefficient process. Policy Packages were formed for stretches of the coastline covering multiple Character Areas where issues and processes are largely similar and/or strongly linked.

J3.8 Policy packages were then assessed against the locally specific objectives for each Character Area. This process was undertaken systematically using an agreed 3-tier 'traffic light' approach based on how well a Policy Package fulfilled the individual criteria. A narrative was also

provided to explain the attributed colour and assessment. An integral part of the appraisal process included the assessment of shoreline responses to the different policy packages. To ensure a consistent and objective assessment was undertaken, a number of guidelines were devised to aid the appraisal processes. These guidelines are shown in Table 3.3.

Table 3.3 Guidelines for appraising objectives

SMP policy appraisal topic	Measurement method	Criteria to score a policy as 'green'	Criteria to score a policy as 'amber'	Criteria to score a policy as 'red'
Flood and erosion risk	Appraisal of risk to people and property is undertaken using the order of magnitude of the number of properties predicted to be affected. The projected erosion lines or flood outlines are used to identify the properties at risk in the Character Area for each epoch. The cumulative total of houses lost by the end of each epoch is scored. Flood standard is used as an indicator for scoring in flood areas.	No properties lost to coastal erosion.	No properties lost to coastal erosion. One or more properties with a flood standard between 1 in 50 years and 1 in 20 years.	One or more properties lost to coastal erosion. One or more properties with a flood standard less than 1 in 20 years.
Communities	The project erosion lines are used to identify settlements at risk in the Character Area for each epoch.	No settlements lost or affected.	Properties lost or affected on the periphery of settlements. For areas at risk of flooding, flood standard between 1 in 50 and 1 in 20 years.	Coastal erosion or flooding affects the integrity of one or more settlements. For areas at risk of flooding, flood standard less than 1 in 20 years.
Natural environment	Scoring of damage to natural environment assets is undertaken based on an assessment of the likelihood of impacts and the designation level of the affected site.	None or minimal impact likely on non-designated sites.	Potential for negative impacts on internationally designated sites or significant likely impacts on other sites.	Likely to be negative impacts on internationally designated sites or significant impacts on other sites.
Agriculture and industry	Losses of agricultural land in general are scored according to the order of magnitude of the agricultural land area lost in the Character Area, estimated using the predicted erosion lines. The losses are scored on the cumulative area lost by the end of each epoch. Losses of grade 1 and 2 agricultural land are scored on	Less than 100 ha of agricultural land lost and no grade 1 and 2 agricultural land lost. For areas at risk of flooding, flood standard greater than 1 in 50 years.	Between 100 – 1,000 ha of agricultural land lost or less than 100 ha of grade 1 and 2 agricultural land lost. For areas at risk of flooding, flood standard between 1 in 50 and 1 in 20 years.	More than 1,000 ha of agricultural land lost or more than 100 ha of grade 1 and 2 agricultural land lost. For areas at risk of flooding, flood standard less than 1 in 20 years. Loss of any

SMP policy appraisal topic	Measurement method	Criteria to score a policy as 'green'	Criteria to score a policy as 'amber'	Criteria to score a policy as 'red'
	the basis of the order of magnitude of the grade 1 and 2 combined area lost, estimated using the predicted erosion lines. The losses are scored on the cumulative area lost by the end of each epoch.			significant industrial site.
Tourism	The impact on tourism is considered in relation to the present day baseline.	None or minimal negative impact likely on tourism.	Potential for negative impact on tourism.	Significant negative impact likely on tourism
Infrastructure	The projected erosion lines and flood outlines are used to identify infrastructure at risk in each Character Area for each epoch. The impact on infrastructure is considered in relation to the significance of the infrastructure at risk.	None or minimal negative impact likely on infrastructure.	Potential for negative impact on infrastructure. For areas at risk of flooding, flood standard between 1 in 50 and 1 in 20 years.	Significant negative impact likely on infrastructure. For areas at risk of flooding, flood standard less than 1 in 20 years.
Historic environment	Scoring of damage to / loss of historic environment assets is based on the number of records from Rapid Coastal Zone Assessments (RCZAs) predicted to be affected in the Character Area. Scoring is based on the cumulative number of records affected by the end of each epoch. If a designated or significant historic environment asset (Scheduled Monument, Listed Building, Registered Parks and Gardens, or Registered Historic Battlefields or Conservation Area) is predicted to be detrimentally affected, the objective is considered to be unfulfilled (scored red).	Less than 10 RCZA records at risk and no designated historic environment assets.	Between 10 – 100 RCZA records at risk and no designated historic environment assets.	More than 100 RCZA records at risk. One or more designated historic environment assets lost.
Landscape	The effects of policies on landscape are in comparison to the current landscape condition in the Character Area – on the basis of an expert view.	None or minimal negative impact likely on landscape quality.	Potential for negative impact on landscape quality.	Significant negative impact likely on landscape quality.
Coastal processes	The effect of a policy on coastal processes is compared to the present day baseline and down-drift impacts are considered.	None or minimal negative impact likely on coastal processes.	Potential for negative impact on coastal processes.	Significant negative impact likely on coastal processes.

J3.9 For some objectives, the measurement of impacts is possible, but for others, their inherently subjective nature makes numerical measurement impossible. For this reason, consultation formed an important and integral part of the policy development process. Decisions were reached through consensus between all partner organisations at a series of workshops throughout the process.

J3.10 The initial preferred policy packages were identified on the basis of the appraisal against local objectives. The full assessment matrices are included in Annex D of this document for the preferred policy as well as a comparison between the different policy packages that were assessed. Appendix E of the main SMP provides full details of the policy appraisal process and appraisal matrices for every Policy Package assessed.

J3.11 A process of fine tuning and policy refinement was then required to ensure a coherent, sustainable and optimised Plan was achieved. A number of specific Client Steering Group and Elected Members Forum workshops were used to facilitate this fine tuning of policies.

J3.12 As part of this process of policy optimisation, a number of further steps were required to check economic viability of the policies, compliance with relevant environmental legislation (including a Habitat Regulations Assessment), and a high level check on the wider sediment transport impacts of the preferred policy scenario was also undertaken. These steps were necessary to confirm the selection the preferred policies, especially where there was little to choose between the appraisal results of different policy packages.

J3.13 The Client Steering Group and Elected Members Forum were closely involved in the entire process, agreeing the general approach, policy options for testing, assessment methodology and scoring and development of the preferred policies. The organisations involved were:

- East Riding of Yorkshire Council;
- North East Lincolnshire Council;
- East Lindsey District Council;
- Lincolnshire County Council;
- Environment Agency;
- Natural England;
- English Heritage; and
- National Farmers' Union.

J3.14 The preferred policies selected for each policy unit and each epoch are summarised in Table 3.4. The location of the policy units is shown in Figure 3.2.

Key

SMP policies

- HTL – Hold the Line
- ATL – Advance the Line

Flood risk management practices

- P2 – Reduce existing flood risk management actions, accepting increase of risk over time.
- P3 – Continue with existing or alternative

- MR – Managed Realignment
- NAI – No Active Intervention

actions to manage flood risk at the current level, accepting that flood risk will increase over time from this baseline.

- P4 – Take further action to sustain the current level of flood risk into the future (responding to the potential increase in risk from climate change).
- P5 – Take further action to reduce flood risk.

Table 3.4 Preferred policies

Policy Unit	Epoch 1 (present day to 2025)	Epoch 2 (2025 – 2055)	Epoch 3 (2055 – 2105)	Comments
Policy Unit A – Flamborough Head to Sewerby	NAI	NAI	NAI	The current policy of No Active Intervention will continue through all epochs. Works may be necessary to maintain the viability of the RNLI Station at South Landing; these will be permitted subject to necessary approvals.
Policy Unit B – Bridlington to Hilderthorpe	HTL (P4)	HTL (P4)	HTL (P4)	The current defence line will be held throughout all epochs, however if the marina development goes ahead, the defence line may be locally realigned seawards of its current position. If monitoring supports it, defence works may need to be considered to manage outflanking and protect the town of Bridlington.
Policy Unit C – Wilsthorpe to Atwick	NAI	NAI	NAI	No Active Intervention will occur through all epochs. However, works may be necessary to maintain the functionality of Barmston Drain. In keeping with existing permissions, the privately owned defences at Ulrome currently protecting caravan parks would not be maintained under this policy and erosion of the shoreline would occur as a result of natural processes.
Policy Unit D – North Cliff to Hornsea Burton (Hornsea)	HTL (P4)	HTL (P4)	HTL (P4)	If monitoring supports it, defence works may need to be considered to manage outflanking to protect the town of Hornsea. It is uncertain in which epoch this may be required.

Policy Unit	Epoch 1 (present day to 2025)	Epoch 2 (2025 – 2055)	Epoch 3 (2055 – 2105)	Comments
Policy Unit E – Rolston to Waxholme	NAI with HTL at Mappleton	NAI with HTL at Mappleton	NAI. HTL at Mappleton, but with other options considered subject to monitoring.	The policy of No Active Intervention would continue for the currently undefended sections through all epochs. However, works may be necessary to maintain a sustainable flood defence in the vicinity of Tunstall Drain. At Mappleton, the current defence line will be held for epochs 1 and 2 with monitoring of coastal processes undertaken. In the medium-term, assessment of options for maintaining a strategic north-south transport link is likely to be necessary. Monitoring will be undertaken to determine whether continuing to hold the line at Mappleton is still sustainable in epoch 3 and options may be considered.
Policy Unit F – Owthorne to Hollym (Withernsea)	HTL (P4)	HTL (P4)	HTL (P4)	If monitoring supports it, defence works may need to be considered to manage outflanking to protect the town of Withernsea. It is uncertain in which epoch this may be required.
Policy Unit G – Hollym to Dimlington Cliffs	NAI	NAI	NAI	The current policy of No Active Intervention will continue through all epochs. In the medium-term, assessment of options for maintaining a strategic north-south transport link is likely to be necessary.
Policy Unit H – Dimlington and Easington Gas Terminals	HTL for current defences. NAI elsewhere	NAI or HTL for currently defended areas. NAI elsewhere	NAI or HTL for currently defended areas. NAI elsewhere	Management policy will be to continue to protect the Gas Terminals in line with the existing planning permission for the Gas Terminals and as long as the planning status allows defences. No Active Intervention for currently undefended areas, however management of outflanking may be permitted, subject to necessary approvals to protect the nationally important gas supplies and while there is a strategic need for the site.

Policy Unit	Epoch 1 (present day to 2025)	Epoch 2 (2025 – 2055)	Epoch 3 (2055 – 2105)	Comments
Policy Unit I – Easington to Kilnsea	HTL (P3) for current defences. NAI elsewhere	HTL (P3) for current defences. NAI elsewhere	HTL (P3) for current defences. NAI elsewhere	The Policy of No Active Intervention will continue for the currently undefended sections through all epochs. At Easington Lagoons and the Kilnsea flood defence, the line will be held in epoch 1 and the intent of management will be to hold the line in epochs 2 and 3 but other options may be considered subject to monitoring of coastal processes, future studies and dependent on third party decisions. To ensure sustainable flood defences, and meet the requirements of environmental legislation, limited Managed Realignment of defences may occur. Any Managed Realignment of defences will not adversely affect property or known designated and significant historic environment assets. This process will be informed by the Humber Flood Risk Management Strategy.
Policy Unit J – Kilnsea to Spurn Point	MR	MR or NAI	MR or NAI	The intention is to intervene only when necessary to maintain access to the facilities and Spurn Point. The integrity of the barrier will be maintained until it becomes unsustainable to do so.
Policy Unit K – Easington Road to Stone Creek	HTL (P4)	HTL (P4)	HTL (P4)	The overarching policy is to Hold the Line and maintain the standard of flood protection in all 3 epochs. To ensure sustainable flood defences, and meet the requirements of environmental legislation, limited Managed Realignment of defences may occur. Detailed studies will identify sites which will be in the order of 100 hectares in epochs 1 and 2 combined. Any Managed Realignment of defences will not adversely affect property or known designated and significant historic environment assets. This process will be informed by the Humber Flood Risk Management Strategy.
Policy Unit L – East Immingham to Cleethorpes	HTL (P4)	HTL (P4)	HTL (P4)	The defences will be held in their current position and their function will be maintained.
Policy Unit M – Humberston Fitties	HTL with P3 for the front line and P4 for the second line.	HTL with P3 for the front line and P4 for the second line.*	HTL P4 for the second line of defence	*The Policy for the Chalet Park will be subject to further policy evaluation.

Policy Unit	Epoch 1 (present day to 2025)	Epoch 2 (2025 – 2055)	Epoch 3 (2055 – 2105)	Comments
Policy Unit N – South of Humberston Fitties to Theddlethorpe St Helen	HTL (P4)	HTL (P4)	HTL (P4)	The overarching policy is to Hold the Line and maintain the standard of flood protection in all 3 epochs. To ensure sustainable flood defences, and meet the requirements of current environmental legislation, limited Managed Realignment of defences may occur. Detailed studies will identify sites which will be in the order of 100 hectares of habitat on the south bank of the outer estuary in epochs 1 and 2 combined. Any Managed Realignment of defences will not adversely affect property or known designated and significant historic environment assets and will be informed by the Humber Flood Risk Management Strategy.
Policy Unit O – Viking Gas Terminal (Mablethorpe) to southern end of Skegness	HTL (P4)	HTL (P4)	HTL (P4) with localised MR considered where appropriate	The management intent will be to hold the line for all epochs continuing the present day standard of protection against flooding. In epoch 3, localised managed realignment could be considered in appropriate areas to increase defence sustainability. Specific sites have not been identified, but further detailed studies in the future should investigate potential sites.
Policy Unit P – Seacroft to Gibraltar Point	HTL with P4	HTL with P4	HTL or MR (P4)	The policies for the long term are conditional. They depend on the results of monitoring and research into climate change, shoreline response and the role of defences.

Figure 3.2: SMP policy units

J4 Policy Review

J4.1 The SEA Scoping Report identifies a range of policies, plans, programmes, strategies and initiatives which are relevant to the SMP and reviews their key objectives. The key objectives from international, community or national level plans with a direct impact on SMP policy development are summarised below. The full list of policy context review (including regional and local plans) is included as Annex A.

J4.2 Since publication of the Consultation Draft of the SEA Environmental Report, the Marine and Coastal Access Act has passed into law. This Act establishes the Marine Management Organisation to bring together the delivery of marine management functions into one organisation with the aim of delivering clean, healthy, safe, productive and biologically diverse oceans and seas. The Act also establishes a walking route and rights of access to coastal land within England and Wales. The detail of the full implications of this Act with need to be considered during the next Shoreline Management Plan review.

Table 4.1 Environmental protection objectives relevant to the Plan

Policy	Key environmental protection objectives	Impact of policy on the SMP
The Habitats Directive (92/43/EEC)	Requires the protection of species and habitats of EU nature conservation designation.	A Habitats Regulations Assessment is being completed for the SMP to assess the impact on Natura 2000 sites.
The Birds Directive (79/409/EEC)	Provides for the protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species.	The Habitats Regulations Assessment will assess impacts on Special Protection Areas (SPAs) as designated under the Birds Directive
The Convention on Wetlands of International Importance (1971) – Ramsar Convention	Provides for the protection of waterfowl habitat.	The Habitats Regulations Assessment will assess impacts on Ramsar sites
The Water Framework Directive (2000/60/EC)	Promotes an integrated and coordinated approach to water management at the river basin scale. Also encourages protection of soil and biodiversity.	A Water Framework Directive Assessment is being completed for the SMP
Convention for the Protection of the Archaeological Heritage of Europe (Valletta, 1992)	Provides for the protection of archaeological and historic assets	Reference will be made to the Rapid Coastal Zone Assessment surveys being undertaken by English Heritage for Bempton to Donna Nook and Donna Nook to Gibraltar Point
Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985)	Provides for the protection of archaeological and historic assets	Reference will be made to the Rapid Coastal Zone Assessment surveys for Bempton to Donna Nook and Donna Nook to Gibraltar Point
European Landscape Convention (Florence, 2000)	Provides for the protection of landscape character	'Landscape' is an SEA receptor and an SMP appraisal topic that will be assessed through the SEA.

Policy	Key environmental protection objectives	Impact of policy on the SMP
The Wildlife & Countryside Act (1981) – amended on several occasions, most notably by the Countryside and Rights of Way Act (2000)	Principal instrument for the protection of Sites of Special Scientific Interest and endangered wildlife within the UK.	'Biodiversity', 'Fauna' and 'Flora' SEA receptors will be assessed under the SMP appraisal topic of 'Natural Environment'
UK Biodiversity Action Plan (1994)	UK Response to the Convention on Biological Diversity. Sets out national and local biodiversity action plans.	'Biodiversity', 'Fauna' and 'Flora' SEA receptors will be assessed under the SMP appraisal topic of 'Natural Environment'
Biodiversity Strategy for England (2002)	Ensure biodiversity considerations become embedded in all the main sectors of economic activity, public and private.	'Biodiversity', 'Fauna' and 'Flora' SEA receptors will be assessed under the SMP appraisal topic of 'Natural Environment'
Rural White Paper (2000)	Deals with the importance of understanding, evaluating and protecting countryside character and diversity.	Agriculture will be assessed under the SMP appraisal topic of 'Agriculture and industry'. 'Landscape' is an SEA receptor and an SMP appraisal topic that will be assessed through the SEA.
Heritage White Paper (2007)	To put the historic environment at the heart of the planning system.	The 'Cultural heritage including architectural and archaeological heritage' SEA receptor will be assessed under the SMP appraisal topic of 'Historic environment'
The Historic Environment: A Force for our Future (2001)	The full potential of the historic environment should be realised and it should be accessible to all.	The 'Cultural heritage including architectural and archaeological heritage' SEA receptor will be assessed under the SMP appraisal topic of 'Historic environment'
Climate Change Act (2008)	Two key aims: to improve carbon management and help the transition towards a low carbon economy in the UK; and to demonstrate strong UK leadership globally.	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate change and the 'Coastal processes' SMP appraisal topic will cover the SEA Receptor of 'Climatic factors'.
UK Climate Change Programme (2006)	A suite of new and established measures are predicted to reduce UK carbon emissions to 15 – 18% below 1990 levels by 2010. Also promotes anticipatory adaptation	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate change and the 'Coastal processes' SMP appraisal topic will cover the SEA Receptor of 'Climatic factors'.
Making Space for Water (2005)	Advocates a holistic approach to flooding, addressing all types of flooding together	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate change and the recommendations of Defra's report.

Policy	Key environmental protection objectives	Impact of policy on the SMP
Sustainable Communities Plan (2003)	Key aims include reducing housing shortage, improving liveability and using land more effectively	The 'Communities' SMP appraisal topic will include an assessment of the impacts of the SMP on the population and communities within the SMP area.
Natural Environment and Rural Communities Act (2006)	Created Natural England, incorporating the Countryside Agency, English Nature and the Rural Development Service, with the aim of sustainable use of the natural environment.	SEA will assess the sustainability of the SMP
Planning Policy Statement 1: Delivering Sustainable Development (2005)	Sets out how planning should contribute to sustainable patterns of urban and rural development	SEA will assess the sustainability of the SMP
Draft Planning Policy Statement: Planning and Climate Change – Supplement to PPS1	Sets out how planning should minimise impacts on climate change through increased resource and energy efficiency, sustainable transportation and maximises resilience to the effects of climate change. This document is currently in draft form.	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate change and the 'Coastal processes' SMP appraisal topic will cover the SEA Receptor of 'Climatic factors'.
Planning Policy Statement 7: Sustainable Development in Rural Areas (2004)	Promotes support of a wide range of economic ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment The full potential of the historic environment should be realised and it should be accessible to all. Promotes support of a wide range of economic activity in rural areas. Promotes the use of Landscape Character Assessment.	SEA will assess the sustainability of the SMP
Planning Policy Statement 9: Biodiversity and Geological Conservation (2005)	States the importance of biodiversity conservation and enhancement to the promotion of sustainable development	'Biodiversity', 'Fauna' and 'Flora' SEA receptors will be assessed under the SMP appraisal topic of 'Natural Environment'
PPG15: Planning and the Historical Environment (1994)	Protect and enhance historic buildings, areas and landscapes, and their settings	The 'Cultural heritage including architectural and archaeological heritage' SEA receptor will be assessed under the SMP appraisal topic of 'Historic environment'
PPG 16: Archaeology and Planning (1990)	Archaeology is an irreplaceable resource and the presumption should be that important remains will be preserved in situ. Archaeology is a material consideration in the planning process.	The 'Cultural heritage including architectural and archaeological heritage' SEA receptor will be assessed under the SMP appraisal topic of 'Historic environment'

Policy	Key environmental protection objectives	Impact of policy on the SMP
PPS 23: Planning and Pollution Control (2004)	The precautionary principle should be invoked with regard the harmful effects of pollution	WFD assessment assesses the impacts of the SMP on water quality and will therefore ensure the precautionary approach is followed
PPS 25: Development and Flood Risk (2006)	Direct development away from areas at highest risk from flooding	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate change and the 'Coastal processes' SMP appraisal topic will cover the SEA Receptor of 'Climatic factors'.
PPG20: Coastal Planning (1992)	It is the role of the planning system to reconcile development requirements with the need to protect, conserve and, where appropriate, improve the landscape, environmental quality, wildlife habitats and recreational opportunities of the coast. As a general rule the limit of the coastal zone in the seaward direction is mean low water mark. Above mean low water mark, local planning authorities have powers to control the development and use of land under the Town and Country Planning Act 1990. The key policy issues for coastal planning are: • Conservation of the natural environment • Development, particularly that which requires a coastal location • Risks, including flooding, erosion and land instability • Improving the environment, particularly of urbanised or despoiled coastlines.	The 'Coastal processes' SMP appraisal topic will address Coastal Planning
Defra Policy Statement: Appraisal of Flood and Coastal Erosion Risk Management (2009)	Describes government policy on the appraisal of erosion and flood risk from coastal sources.	The 'Coastal processes' SMP appraisal topic will address Coastal Erosion management and the 'Flood risk and erosion' SMP appraisal topic will include an assessment of Coastal erosion risk management
Defra Consultation on Coastal Change Policy (2009)		The 'Coastal processes' SMP appraisal topic will address Coastal change issues
Planning Policy Consultation: Development and coastal change (2009)	• Ensuring a broad consideration of the impacts of coastal change in preparing spatial plans at regional and local level and in considering planning applications, recognising	The 'Coastal processes' SMP appraisal topic will address Coastal change issues

Policy	Key environmental protection objectives	Impact of policy on the SMP
	their long-term nature and the inherent uncertainty in our understanding of coastal processes. • Avoiding inappropriate development in areas vulnerable to coastal change, but recognising that activities that require a coastal location such as recreation and tourism may provide economic benefit to communities. Where such wider sustainability benefits exist, these types of development may be permitted where the lifetime of the development can be managed within the time-frame of the expected coastal change impact. • Expecting planning authorities to define a 'Coastal Change Management Area' (CCMA) in which the policy applies, related to the area likely to be affected by coastal change based on the best information available. • Regional Spatial Strategies (RSSs) (and the forthcoming integrated strategies) and Local Development Frameworks (LDFs) promote policies to assist the relocation of development affected by coastal change away from areas at risk; • Shoreline Management Plans outline the management policies for each section of the coast: hold the line, advance the line, no active intervention, and managed realignment. • Coastal change impacts to be considered alongside wider social, economic and environmental spatial policy objectives, and be integrated effectively with other strategies and plans of significance to the coast (such as Regional Economic Strategies) to secure a positive contribution towards managing the impacts from coastal change in a coherent and sustainable way.	
Draft Flood and Water Bill	• Delivers improved security, service and sustainability for people and their communities;	The 'Flood risk and erosion' SMP appraisal topic will include an assessment of the impacts of climate

Policy	Key environmental protection objectives	Impact of policy on the SMP
	• make clear who is responsible for managing all sources of flood risk; • protect essential water supplies by enabling water companies to control more non-essential uses of water during droughts; • modernise the law for managing the safety of reservoirs; • encourage more sustainable forms of drainage in new developments; and • make it easier to resolve misconnections to sewers.	change.

J5 Baseline Environmental Character and Key Environmental Issues

Current Baseline and Key Environmental Issues

J5.1 Since an SMP is a high-level document, this SEA considers key features and characteristics of the study at a strategic level.

J5.2 The full environmental baseline review is included in Annex B, arranged geographically. The key environmental issues are summarised below within each of the SMP topics.

Agriculture and industry

J5.3 The coastline along much of the SMP frontage is predominantly rural with substantial areas of land used for agriculture. For this reason, agriculture is a key employer throughout the SMP area with many jobs dependent on the agricultural industry, particularly in East Lindsey where just under 7% of the population is employed within the industry (based on East Lindsey District Council's Economic Development Strategy: 2006 – 2020) compared to a figure of just under 2% nationally, based on National Farmers' Union figures:

http://www.nfuonline.com/Media_centre/NFU_Quick_Stats/The_NFU_by_numbers/

(Accessed 19 March 2010)

J5.4 In the UK, agricultural land is classified according to its quality using a consistent, country-wide system. This is known as the Agricultural Land Classification system and is the responsibility of Defra. Descriptions of land categories are given below:

- Grade 1 – excellent quality agricultural land: land with no or very minor limitations to agricultural use.
- Grade 2 – very good quality agricultural land: land with minor limitations which affect crop yield, cultivations or harvesting.
- Grade 3 - good to moderate quality agricultural land: land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
- Grade 4 - poor quality agricultural land: land with severe limitations which significantly restrict the range of crops and/or level of yields.
- Grade 5 - very poor quality agricultural land: land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

J5.5 In the East Riding of Yorkshire, the coastal strip between the settlements of Bridlington, Hornsea and Withernsea is rural with predominantly grade 3 agricultural land (with some grade 2 agricultural land) mostly used for arable farming. There is a large area of grade 2 agricultural land on the north bank of the Humber between Spurn Head and Stone Creek with a small area of grade 1 agricultural land towards the centre of Sunk Island. In East Lindsey, the rural areas are predominantly grade 3 agricultural land with small areas of grade 2 agricultural land. There are areas of grade 1 agricultural land at Donna Nook and Gibraltar Point.

J5.6 There are significant areas of farmland being managed under agri-environment schemes; predominantly at entry level but with some areas at higher level, particularly around Flamborough Head, between Donna Nook and Mablethorpe, west of Skegness and at Gibraltar Point.

J5.7 Future food security is an important issue for the nation as a whole and relevant to the SMP because of the significant areas of agricultural land with the potential to be affected by coastal management policy. Chatham House produced a report in 2009 investigating future food security within the UK and suggesting a range of measures to improve our future food security. The report highlights the UK's dependence on a small number of critical sources and inputs from the world market for food, feed and fertilizer, making the UK's food supply vulnerable to international events. The report recommends a number of measures to improve the UK's food supply resilience including investment in the agricultural industry to encourage productive and sustainable practices.

J5.8 The area covered by the SMP includes some important industrial sites; the natural gas storage and processing facilities to the north of Atwick and to the east of Aldbrough, neither of which are predicted to be at risk from coastal erosion within the timescale of this Shoreline Management Plan. Dimlington and Easington gas terminals are located on the cliff top at Dimlington, just north of Easington. The south bank of the Humber to the west of Grimsby is heavily industrialised with infrastructure relating to the petrochemical industry; chemical works; oil storage; bulk and liquid storage; power generation; and other manufacturing, processing and storage infrastructure. Grimsby dock is a large commercial port and handles large volumes of foodstuffs, timber, steel, minerals, ores and grain. There are also fish processing facilities adjacent to the dock area. There is an oil storage tank farm at Tetney and the Viking gas terminal is located to the north of Mablethorpe, set back approximately 300 metres from the shoreline.

Coastal processes

J5.9 Appendix C of the SMP provides a review of current knowledge of coastal behaviour and dynamics. The Flamborough Head to Gibraltar Point coastline can be considered to be a single coastal behaviour system since there are interactions between the areas.

J5.10 In summary, the chalk cliffs (Flamborough Head to Sewerby) are eroding at a slow rate (0 - 0.4 metres per year) and provide shelter to the coastline to the south.

J5.11 The Holderness cliffs extend for 60km from Sewerby to Easington and are rapidly eroding glacial till cliffs ranging from less than 3 metres to around 40 metres in height. The cliffs and shore platform are a major source of coarse and fine sediment; the coarse sediment supplies Spurn Head and offshore sand banks. It is likely that gravel and coarse sand cannot cross the Humber mouth, although fine and medium sands are transported to the Lincolnshire coastline. The dominant movement of fine sediment is southwards, contributing to the ongoing deposition in the Humber Estuary and the Wash. This cliffline is sub-divided into a series of sub-units by lengths of coast protection works (e.g. at Bridlington, Hornsea, Mappleton, Withernsea and Easington).

J5.12 The peninsular of Spurn Head extends from the southern end of the Holderness cliffs and forms a barrier extending 5.5 km into the mouth of the Humber Estuary. Spurn comprises a sand and gravel barrier, a nearshore platform and largely derelict defences of various types.

J5.13 The outer Humber Estuary functions as a classic macro-tidal delta. The strong tidal flows into and out of the estuary intersect the north-south sediment transport pathway along the open coast. The estuarine tidal currents act as a hydraulic groyne, partially blocking the longshore transport of sediment. It is believed that almost all the non-cohesive sediment entering the Humber is derived from the erosion of the Holderness cliffs and nearshore seabed. In order to keep pace with the predicted rates of sea level rise, a considerable additional volume of sediment will be required to be deposited in inter-tidal areas.

J5.14 The Lincolnshire coastline includes wide inter-tidal sand flats between Grimsby and Donna Nook, decreasing in width towards Mablethorpe. The sand flats are currently accreting. Between Tetney Haven and Donna Nook and also at Gibraltar Point, extensive mature salt marsh exists sheltered by the wide sand flats. In various areas along the Lincolnshire coastline (including at Donna Nook, Saltfleetby and Gibraltar Point), sand dunes have formed. Between Saltfleetby/Theddlethorpe and Gibraltar Point, the inter-tidal beaches were formerly a thin sand veneer over a glacial till foundation. The sand veneer comes from fine and medium grained sands moving southwards by longshore drift. Much of this frontage is backed by a variety of 'hard' defences (armoured revetments) and dunes which together with the beach provide the standard of protection. Historically, during storms, the thin sand cover moved seaward and the underlying till was exposed and eroded. To counter this erosion, the Environment Agency have undertaken a major beach renourishment scheme along the entire coast between Mablethorpe and Skegness which started in 1994.

J5.15 There are many uncertainties in existing knowledge and understanding of shoreline processes and behaviour, including:

- Future sediment transport and sediment available to provide sustainable flood defences along this coastline;
- The future rates of cliff recession under different sea level rise rates;
- The yield of beach building material and fine sediment from the Holderness cliffs, shore platform and seabed;
- Discrepancies between the estimated coarse sediment yield and the modelled longshore sediment transport rates;
- The impact of coast protection works on the supply of sediment from the Holderness coast;
- The long-term and contemporary behaviour of Spurn Head;
- The protection provided by Spurn Head to the low-lying land around the Humber; and
- The transport of coarse sediment across the mouth of the Humber to the Lincolnshire coast.

Communities

J5.16 Along the coastal strip of this SMP, there are several coastal towns, villages and individual dwellings. The coast is generally viewed as an attractive place to live and visit. However, there are frequently challenges shared by many coastal communities, as identified in a recent Government report (Communities and Local Government Committee, 2007):

- Physical and social isolation;
- High proportions of older people together with higher levels of outward migration among young people;

- Low-wage, low-skill economies and seasonality of employment;
- Frequent dependency on a single industry; and
- A high incidence of poor housing conditions and a high proportion of private rented homes.

J5.17 The Indices of Multiple Deprivation 2007 indicate that within the East Riding, deprivation is concentrated along much of the coastline, although deprivation levels are not as high as in the other authorities. North East Lincolnshire has high levels of deprivation generally, but particularly concentrated in central Grimsby, adjacent to the dock area. In East Lindsey, there are small but significant pockets of social deprivation, particularly along the coast.

J5.18 It is beyond the scope of the SMP to directly influence deprivation levels, but it should be recognised that the SMP policies could have an effect, for example regeneration would be unlikely in an area where the preferred SMP policy is NAI and conversely a HTL policy may encourage investment. The preferred policies should therefore be selected with regard to the spatial planning context and regeneration strategies underway. In the relevant Regional Spatial Strategy, (The Yorkshire and Humber Plan) Withernsea is identified as having particular needs for wide-ranging regeneration due to its declining economy and relatively high unemployment and deprivation levels. There are renaissance programmes underway in Grimsby and Cleethorpes, which links priorities for housing with community and regeneration objectives. Skegness and Mablethorpe are earmarked for regeneration to address the high levels of deprivation and seasonal unemployment.

J5.19 Although the indicator of health and disability is included in the Index of Multiple deprivation, it is also useful to look at the health indicator by itself to examine if the trend differs substantially from the trend shown by deprivation more generally. In north east Lincolnshire poor health is focussed in Central Grimsby. However, Grimsby does not suffer from poor health to the same degree that it does with deprivation more generally, with only two areas within the worst 100 nationally in terms of health. In East Riding the areas with the worst health are found in Bridlington, and in east Lindsey poor health is very much associated with settlements along the coast in a similar way to deprivation more generally.

J5.20 The East Riding of Yorkshire has an aging population, with a larger than average number of residents aged 40 and above; 23% of the population is of pensionable age. Similarly, Lincolnshire also has high numbers of retired people, with a growing trend towards immigration of retired people from other parts of the United Kingdom.

J5.21 There are numerous caravan and mobile holiday home parks along the SMP area coastline, which are of high economic importance to the area, as well as providing recreational benefit to the community. East Riding Council's report on the Rollback of Caravan and Holiday Homes from the eroding East Yorkshire coastline identified 24 sites at risk from coastal erosion within the next 100 years.

Coastal flood and erosion risk

J5.22 In the East Riding of Yorkshire, the towns of Bridlington, Hornsea, Mappleton and Withernsea as well as the gas terminals at Easington are defended against coastal flooding and erosion.

J5.23 Within the East Riding, the rural areas between the defended frontages are currently eroding at a rate of approximately 0.5 – 2.0 metres per year on average and if natural processes continue, there will be properties at risk from coastal erosion along these frontages within the timeframe of the SMP.

J5.24 Within the East Riding, there are low-lying areas of land at risk from coastal and/or estuarine flooding, particularly the areas around Barmston Drain, south Hornsea, Tunstall Drain and the north bank of the Humber, including Sunk Island and parts of Easington.

J5.25 Within North East Lincolnshire, virtually the entire frontage is protected by hard defences, however the hinterland (including large areas of Grimsby) is within the coastal flood plain (based on the extent of Flood Zone 3a).

J5.26 Within East Lindsey, the majority of the frontage is defended by a combination of embankments or hard defences fronted by a beach. There are extensive areas of low-lying land behind the defences, potentially at risk of flooding through tidal inundation. The back of the floodplain is marked by a ridge of higher ground with a gradual increase in gradient as the land rises towards the Lincolnshire Wolds.

Historic environment

J5.27 There are a considerable number of designated nationally important historic environment assets along the coastal strip including:

- Scheduled Monuments – Scheduled Monuments are designated and added to a 'Schedule' by the Secretary of State under powers contained in the Ancient Monuments and Archaeological Areas Act, 1979;
- Listed buildings – A building or other structure that is officially designated by English Heritage as being of special architectural and historic interest. Listed building status brings the structure under the consideration of the planning system;
- Registered Parks and Gardens – Since the 1980s there has been a national record of historic parks and gardens which make such a rich and varied contribution to our landscape, maintained by English Heritage; and,
- Conservation Areas – Conservation areas are designated by local authorities as any area of special architectural or historic interest whose character or appearance is worth protecting or enhancing.

J5.28 There are no World Heritage Sites or Registered Battlefields within the area covered by the SMP. There are also large numbers of undesignated assets, which can be of local, regional or national significance. It should also be noted that hitherto unknown archaeological remains will also be present along the Yorkshire and Lincolnshire coastlines.

J5.29 English Heritage is undertaking a Rapid Coastal Zone Assessment Survey (RCZAS) to provide increased knowledge of the historic coastal environment. Stage 1 of the project, consisting of desk based assessment, has been completed for the Yorkshire and Lincolnshire areas and this information has informed the SMP. Stage 2 is currently underway and consists of field survey and an assessment of significance. Further information can be obtained from the English Heritage website: http://www.english-heritage.org.uk/professional/advice/advice-by-topic/marine-planning/shoreline-management-plans/rapid-coastal-zone-assessments/

J5.30 A very brief summary is provided in the paragraphs below of the findings of the RCZAS. Detailed information can be found by referring to the RCZAS documents: http://ads.ahds.ac.uk/catalogue/archive/yorksrcza_eh_2009/index.cfm?CFID=573996&CFTOKEN=39545028

J5.31 Within the East Riding of Yorkshire, there is evidence of activity and settlement throughout the prehistoric era, including finds from the Palaeolithic, Mesolithic, Neolithic, Bronze Age and Iron Age periods as shown by the numerous records in the RCZAS for this area. Areas where finds have been concentrated include Flamborough, Sewerby, Skipsea and Barmston. Within Lincolnshire, evidence of the prehistoric era is poorly represented with finds located in the Cleethorpes and Humberston areas as well as casual finds generally from the foreshore within East Lindsey. There are regionally-important remains of a once-extensive salt production industry centred in Ingoldmells.

J5.32 There is evidence of Romano-British occupation along the majority of the East Riding coastline through artefacts such as burials, ditches, cropmarks representing enclosures and field boundaries, pottery and coins. In North East Lincolnshire, the Romano-British shoreline is inland of the present-day shoreline and outside the area covered by the RCZAS, hence artefacts identified by the study include coins, pottery and a lamp rather than settlements themselves. In East Lindsey, the RCZAS documents records evidence relating to salt production around Ingoldmells and Chapel St Leonards in this period and also evidence of settlement in the Trusthorpe, Huttoft and Anderby areas.

J5.33 Archaeological remains from the Saxon period are extremely sparse along the East Riding coastline, as they largely lie beneath existing settlements. Of particular note is the early to middle Saxon inhumation cemetery at Sewerby. Finds from the Saxon period in Lincolnshire are even scarcer, limited to a Danish dagger found in Cleethorpes and pottery found in Mablethorpe.

J5.34 A large number of fortified manors and castles were constructed during the medieval period in the East Riding and Lincolnshire, and some have survived to the present day as farms or country houses. Medieval and/or post-medieval ridge-and-furrow has been identified along the majority of the East Riding and Lincolnshire coastlines. The post-medieval period is predominantly represented by buildings located in settlements in towns (such as Bridlington, Hornsea, Grimsby and Cleethorpes) or smaller villages. Hornsea contains some notable medieval buildings (such as Low Hall and Old Hall). Other medieval structures of note include the Old Lighthouse at Flamborough and Angell's High and Low Lights (Spurn) and Smeaton's 1776 replacements. Drainage of lower lying areas behind sea defences began from the 17th century onwards in the form of dykes and sluices within Lincolnshire and clay extraction pits (either for building or for the construction of sea defences) along the frontage from this period.

J5.35 During the modern era, major changes have occurred to the landscape as a result of the joint agricultural and industrial revolutions. The coming of the railways in the mid-nineteenth century and the impact of seaside tourism led to the development of towns such as Bridlington, Hornsea, Withernsea, Cleethorpes, Mablethorpe, Chapel St Leonards, Ingoldmells and Skegness as well as the later growth of holiday camps and caravan parks.

J5.36 Within the East Riding, there is widespread evidence of rural industry during this period, including windmills and limekilns.

J5.37 South of the Humber, substantial reclamation of former salt marsh took place particularly in the vicinity of Humberston Fitties and the Mablethorpe-Skegness frontage with construction of sea walls allowing drainage of land to the rear. The new land was used for agricultural purposes. Dock construction began in Grimsby in 1800-01 along with a large number of related buildings; the first Dock Tower was constructed in 1852.

J5.38 There are a number of sites relating to World War One (WW1)along this coastline, such as the remains of a RNAS seaplane base on Hornsea Mere and the airfield at RAF North Cotes first used in 1916. There is a concentration of WW1 structures around the Humber; Godwin Battery (Kilnsea), Spurn Fort, the hexagonal Bull Sands Fort and Haile Sands Fort were all constructed around 1915. There are also many monuments along this coastline associated with World War Two (WW2), including the remains of tank traps, pillboxes and gun emplacements and earthworks.

J5.39 A number of sites within the East Riding are currently being damaged by coastal erosion, such as the WW2 Ringbrough Battery (Aldbrough), or are at risk from coastal erosion in future. A considerable number of sites are potentially at risk from coastal flooding within North East Lincolnshire and East Lindsey due to the size of the flood plain as well as sites within East Riding on the north bank of the Humber which are vulnerable to flooding.

J5.40 Historic environment assets are summarised on an area by area basis in Annex B.

Infrastructure

J5.41 There is a considerable quantity of infrastructure associated with towns and villages along the entire SMP frontage including: water and sewerage infrastructure; outfalls; RNLI stations; coastguard stations; coastal access points; wind farm infrastructure; piers; slipways; reservoir; and visitor centres at Spurn Head and Gibraltar Point. In each of the main towns, there are many local and regional services as well as community facilities such as schools, places of worship, public houses, shops police stations, hospitals, doctors, museums, leisure centres etc.

J5.42 The harbour area at Bridlington provides facilities for the local fishing community and is a focus for tourists and water sports enthusiasts.

J5.43 There are three Ministry of Defence sites along the frontage; a bombing range in the vicinity of Cowden Parva and an RAF bombing range at Donna Nook. There is also an RAF underground bunker to the south of Hollym.

J5.44 Throughout North East Lincolnshire, East Lindsey and along the north bank of the Humber, there is drainage infrastructure such as land drainage pumping stations, outfalls, drainage channels, dykes and streams to facilitate the drainage of the low-lying land in these areas.

J5.45 The road and rail network within this area provides important transport links between towns and villages. The B1242 within the East Riding runs parallel to the coast, approaching close to the coastline, in places and provides a key connection between the towns and villages of Skipsea, Atwick, Hornsea, Mappleton, Aldbrough, Roos and Withernsea. The A1031 and A52 within East Lindsey run parallel to the coast and provide a key connection between the towns and villages of Humberston, Saltfleet, Mablethorpe, Trusthorpe, Sutton on Sea, Ingoldmells and Skegness as well as smaller villages. The train station in Bridlington provides a rail connection between Hull and Scarborough. Several train stations within Grimsby and Cleethorpes provide rail access to the west. The train station in Skegness provides a rail connection between Skegness and Grantham.

Landscape

J5.46 Flamborough Head and Spurn Head are both defined as Heritage Coasts in recognition of the value of their landscape character.

J5.47 The East Riding coastal strip is predominantly exposed open landscape with limited tree cover and scattered small scale hamlets and villages contrasting with the surrounding large scale agricultural landscape. Coastal caravan parks are prominent in the coastal strip. The undefended eroding boulder clay cliffs and narrow beaches are a feature of much of this coastline.

J5.48 North East Lincolnshire's coastal strip within the SMP area is heavily industrialised between Immingham and Grimsby due to activities associated with the docks. Grimsby and Cleethorpes are predominantly urban landscapes with an industrial area around the port of Grimsby. Landward of the residential and urban areas, is open, agricultural landscape.

J5.49 East Lindsey's coastal strip is a low-lying drained coastal plain which is mostly flat with some areas of gentle undulations. Predominantly mixed agricultural land use with both arable and pasture and there are extensive networks of drainage ditches and dykes around field boundaries. There are sparsely scattered rural settlements throughout the area and a stretch of coastal resorts from Mablethorpe to Skegness with associated static caravan parks on their outskirts.

Natural Environment

J5.50 This SMP area includes a number of nationally and internationally designated sites. Table X provides a summary of the nationally and internationally designated sites that are located on or in the vicinity of the coastline. It also sets out some of the key vulnerabilities at the sites that are of relevance to the SMP.

J5.51 The environmental designations are listed below:

- Special Area of Conservation (SAC): SACs are areas which have been given special protection under the European Union's Habitats Directive (Council Directive 92/43/EEC of 21 May 1992). They provide increased protection to a variety of wild animals, plants and habitats and are a vital part of global efforts to conserve the world's biodiversity.
- Special Protection Area (SPA): SPAs are areas which have been identified as being of national and international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within European Union countries. They are European designated sites, classified under the European Union's Birds Directive (79/409/EEC).
- Ramsar sites: Ramsar sites are wetlands of international importance, designated under the Ramsar Convention (signed in Ramsar, Iran in 1971). Wetlands are defined as areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.
- European Marine Site: The term 'European Marine Site' (EMS) (as defined by the Habitats Regulations) refers to those marine areas of both Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which are protected under the EC Habitats and Birds Directives. These are a non statutory designation and are essentially management units for those parts of Natura 2000 sites.
- Site of Special Scientific Interest (SSSI): SSSIs are the best sites for the country's wildlife and geology. There are over 4,000 SSSIs in England, covering around 7% of the country's land area.

- National Nature Reserve (NNR): Many of the finest sites in England for wildlife and geology are National Nature Reserves. As well as managing some of our most pristine habitats, our rarest species and our most significant geology, most Reserves now offer great opportunities to the public as well as schools and specialist audiences to experience England's natural heritage.
- Local Geological Sites: Local Sites (previously Regionally Important Geological/geological Site (RIGS)) are non-statutory areas of local importance for nature conservation that complement nationally and internationally designated geological and wildlife sites.

J5.52 An important site for nature conservation can have more than one environmental designation; in particular, sites of European importance are usually also designated as SSSIs.

J5.53 The internationally and nationally designated sites within the SMP area are listed in Table as well as a summary of their interest features.

J5.54 Just south of the SMP area is the extensive area of the Wash SPA and Ramsar site and the Wash & North Norfolk Coast SAC. In addition, in the area adjacent to the southern portion of the SMP area there are three draft Special Areas of Conservation: Inner Dowsing, Race Bank, and North Ridge. Although these designated and proposed designated areas are outside the boundary of the SMP, they have the potential to be affected by this SMP's policies.

J5.55 In addition to the internationally and nationally designated sites, there are locally designated wildlife sites throughout the SMP area of importance for their habitats and species.

J5.56 There are extensive areas of Biodiversity Action Plan habitat within this SMP area including subtidal chalk (Flamborough Head), saline lagoons (Easington lagoons), coastal sand dunes (parts of the Humber Estuary, Saltfleetby-Theddlethorpe and Gibraltar Point), coastal saltmarsh (parts of the Humber Estuary, Easington lagoons and Gibraltar Point), eutrophic standing waters (Hornsea Mere) and intertidal mudflats (parts of the Humber Estuary). The area also supports a number of Biodiversity Action Plan species, including the natterjack toad (parts of the Humber Estuary and Saltfleetby-Theddlethorpe), river lamprey and sea lamprey (Humber Estuary acts an important migration route), the great bittern and black-tailed godwit (Humber Estuary) and dark-bellied Brent goose (Gibraltar Point). Throughout the SMP and subsequent strategy and scheme stages, it is important to generate opportunities to create BAP habitat and attract BAP species.

J5.57 The natural environment is considered through the appraisal approach described in Chapter J3 along with all the other SMP topics. In addition, a Habitat Regulations Assessment has been prepared which assesses the impact of the SMP policies on the Natura 2000 network of sites.

Table 5.1: Internationally and nationally designated sites within the SMP area

Name	Features of interest	Area (hectares)
Flamborough Head SAC	• Reefs • Vegetated sea cliffs of the Atlantic and Baltic coasts • Submerged or partially submerged sea caves	6,312

Name	Features of interest	Area (hectares)
Flamborough Head SSSI	The site comprises the coastal cliffs of Flamborough Head between Reighton and Sewerby, composed of chalk and softer sedimentary rocks. The cliff line exposes a variety of geological features. These rock exposures are also of interest in supporting important breeding bird colonies, whilst the cliff tops support interesting plant communities.	315
Flamborough Head and Bempton Cliffs SPA	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: During the breeding season; • Kittiwake *Rissa tridactyla* Assemblage qualification: A seabird assemblage of international importance The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 seabirds: During the breeding season, the area regularly supports 305,784 individual seabirds	212
Skipsea Bail Mere SSSI	Skipsea Bail Mere consists of an area of agricultural land lying immediately north west of the village of Skipsea. The interest lies in the lake deposits underlying below the fields and can be accessed by auger or borehole. Skipsea Bail Mere is important for the interpretation of the vegetational history of the northern part of the Holderness coastal plain. The organic deposits which have infilled the basin contain a pollen and macrofaunal record that extends from the Devensian Late Glacial (around 13 Ka BP) through to historic times.	44
Withow Gap, Skipsea SSSI	Withow Gap, Skipsea is an important site for the interpretation of Late Devensian (glacial) and Flandrian (post-glacial) environmental history in Holderness. The unique feature of the site is the exposure in a coastal section of a sequence of mere deposits which occupies a hollow in the Late Devensian (Skipsea) till. This provides an unusual opportunity to see the complete stratigraphy, its lateral variations and the complexity of the geomorphological processes that operated at the former lake margin. Both the coastal section and the subsurface aspects of the hollow inland are invaluable for research and education, and the site has yielded a considerable volume of palaeoenvironmental data from studies of pollen, plant macrofossils, molluscs and lithostratigraphy.	8
Hornsea Mere SPA	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: Over winter; • Gadwall *Anas strepera*, 300 individuals representing at least 1.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)	231

Name	Features of interest	Area (hectares)
Hornsea Mere SSSI	Hornsea Mere is a site of national ornithological importance. It consists of a large shallow eutrophic lake of about 120 hectares (300 acres), together with its associated habitats of reedswamp, fen and carr woodland, representing a relic of the once-extensive marshes and lakes of Holderness.	230
Dimlington Cliffs SSSI	Dimlington is a key site for Quaternary stratigraphy. Organic remains in the Dimlington Silts provide not only a good record of palaeoenvironmental conditions but also a limiting date for the maximum expansion of Late Devensian ice. Dimlington also provides valuable exposures in the Basement Till which includes Scottish and Scandinavian erratics and masses of fossiliferous Bridlington Crag transported from the floor of the North Sea. The site also provides sedimentary evidence for the superimposition of two till units associated with a single ice sheet.	55
The Lagoons SSSI	The site known as the Lagoons is situated on the Holderness coast some 2 kilometres north of Spurn peninsula and south-west of Easington village. It comprises a variety of coastal habitats including saltmarsh, shingle, sand dune, swamp and most significantly, saline lagoons and pools which represent the only extant example in North Humberside of this nationally rare habitat.	68
Spurn NNR	Spurn NNR has sandy beaches and the North Sea on its eastern side, and areas of saltmarsh and extensive mudflats on its western side, the latter attracting thousands of birds. Spurn NNR is owned and managed by the Yorkshire Wildlife Trust.	296
Humber Estuary SAC	• Estuaries • Mudflats and sandflats not covered by seawater at low tide • Sandbanks which are slightly covered by sea water all the time • Coastal lagoons * Priority feature • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`) • Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority feature • Dunes with *Hippophae rhamnoides* • Sea lamprey *Petromyzon marinus* • River lamprey *Lampetra fluviatilis* • Grey seal *Halichoerus grypus*	36,657

Name	Features of interest	Area (hectares)
Humber Estuary SPA	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: During the breeding season; • Little Tern *Sterna albifrons* • Marsh Harrier *Circus aeruginosus* • Bittern *Botaurus stellaris* • Avocet *Recurvirostra avosetta* Over winter; • Bar-tailed Godwit *Limosa lapponica* • Bittern *Botaurus stellaris* • Golden Plover *Pluvialis apricaria* • Hen Harrier *Circus cyaneus* • Avocet *Recurvirostra avosetta* • Ruff *Philomachus pugnax* This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: On passage; • Redshank *Tringa totanus* • Dunlin *Calidris alpina alpina* • Red knot *Calidris canutus* • Black-tailed Godwit *Limosa limosa islandica* Over winter; • Dunlin *Calidris alpina alpina* • Knot *Calidris canutus* • Redshank *Tringa totanus* • Shelduck *Tadorna tadorna* • Black-tailed Godwit *Limosa limosa islandica* Assemblage qualification: A wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl: Over winter, the area regularly supports 187,617 individual waterfowl (5 year peak mean 1991/2 - 1995/6)	37,630

Name	Features of interest	Area (hectares)
Humber Estuary Ramsar	• Assemblages of international importance and species/populations occurring at levels of international importance In addition to the birds: • The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. • The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*. • The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.	37,988
Humber Estuary SSSI	The Humber Estuary is a nationally important site with a series of nationally important habitats. These are the estuary itself (with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh) and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance for the geological interest at South Ferriby Cliff (Late Pleistocene sediments) and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seals *Halichoerus grypus*, river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus*, a vascular plant assemblage and an invertebrate assemblage.	37,000
Donna Nook NNR	Donna Nook NNR is made up of dunes, slacks, saltmarsh and inter-tidal areas. The area is rich in bird life. In summer, breeding dune birds include red-legged partridge, dunnock, whitethroat, linnet, skylark, yellowhammer and tree sparrow; while the mudflats provide a winter home for substantial numbers of brent geese, shelduck, twite, lapland bunting, shore lark, knot and dunlin, and a wide variety of other wading birds. In addition, Donna Nook has one of the largest and most accessible breeding colonies of grey seals in the UK. Donna Nook NNR is owned by the Ministry of Defence and managed by the Lincolnshire Wildlife Trust.	341
Saltfleetby – Theddlethorpe Dunes and Gibraltar Point SAC	• Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`) • Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority feature • Dunes with *Hippophae rhamnoides* • Humid dune slacks • Embryonic shifting dunes	960

Name	Features of interest	Area (hectares)
Saltfleetby – Theddlethorpe Dunes SSSI	This nationally important site includes flats, dunes, salt and freshwater marsh which together support an exceptionally rich flora and fauna. There are outstanding assemblages of vascular plants, invertebrates and breeding birds and it is the most north-easterly breeding site in Britain for the Natterjack Toad. The rapid accretion of dunes and saltmarsh make this an important site for research into the processes of coastal development.	952
Saltfleetby – Theddlethorpe NNR	The dunes began forming in the 13th century, and the same processes of wind and tidal action continues dune formation on the site today. The dunes support a variety of flowers and grasses while saltmarsh and freshwater marsh areas are home to a wide variety of insects, amphibians, birds and mammals.	952
Chapel Point – Wolla Bank SSSI	Chapel Point-Wolla Bank is a nationally important geological site for its inter-tidal sediments, which record the evidence of early Holocene sea level change.	40
Sea Bank Clay Pits SSSI	The Sea Bank Clay Pits comprise a series of isolated flooded clay workings of varying size, depth and topography which now support uncommon aquatic plant communities characteristic of the slightly brackish, eutrophic (nutrient-rich) water in addition to extensive reedbeds and a rich marginal wetland flora. The pits were excavated in 1953 to provide material for the repair of the sea wall between Mablethorpe and Chapel St. Leonards on the Lincolnshire Coast. The pits are also important for breeding, wintering and passage birds. They are known to support a rich aquatic invertebrate fauna, notably beetles, including several nationally scarce species and others new to the County.	17
Gibraltar Point SPA	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: During the breeding season; • Little Tern *Sterna albifrons* Over winter; • Bar-tailed Godwit *Limosa lapponica* This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: Over winter; • Grey Plover *Pluvialis squatarola* • Knot *Calidris canutus* Assemblage qualification: A wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl: Over winter, the area regularly supports 22,137 individual waterfowl (5 year peak mean 1991/2 - 1995/6)	414

Name	Features of interest	Area (hectares)
Gibraltar Point Ramsar	The area consists of a sand dunes system, freshwater and saltmarsh, extensive intertidal flats, and open water. The vegetation includes sedges (*Carex spp*), rushes, ferns, crowfoot, reed, sea holly, and sea campion. It supports *Pluvialis squatarola* (1.2% of the population), *Limosa lapponica* (0.6% of the population), and *Branta bernicla bernicla* (0.3% of the population). The site is used for recreation and grazing.	414
Gibraltar Point SSSI	This is a nationally important site due to its sand dunes and other coastal habitats and associated fauna, notably invertebrates and passage and breeding birds. Gibraltar Point is also of great importance for its coastal geomorphology.	581
Gibraltar Point NNR	The NNR forms the north-eastern extremity and entrance to the Wash estuary and has been built by complex tidal and geomorphological processes. Most of the reserve is intertidal flats and saltmarsh. There are areas of freshwater marsh and man-made fresh and salty water meres. Large numbers of migrant and overwintering birds visit the NNR. Gibraltar Point NNR is managed and part owned by the Lincolnshire Wildlife Trust.	429

Tourism

J5.58 Tourism is a key industry along much of the SMP frontage. In the East Riding, Bridlington, Hornsea and Withernsea have developed as seaside resorts and Bridlington continues to be the East Riding's premier holiday resort serving a catchment covering West and South Yorkshire and North Nottinghamshire. Tourism is an important contributor to the local economy with numerous EC-designated bathing beaches along the Holderness coast and tourist-related development along the coast, including caravan parks. The scenic beauty and wildlife of Flamborough Head and Spurn Head also attract visitors and there are interpretation boards and facilities for visitors.

J5.59 Tourism is a key economic driver in Cleethorpes (North East Lincolnshire) and this area has many recreation and tourism developments close to the EC-designated bathing beach that fronts the town.

J5.60 Tourism is a vital input to the local economy within East Lindsey, with tourism and agriculture the main sources of employment. The 'Fun Coast' stretches between Mablethorpe and Skegness and includes traditional seaside resorts with Blue Flag beaches at Mablethorpe, Sutton on Sea and Skegness. There are many tourist-related developments along this part of the coast, including the legendary Butlins at Ingoldmells. There are approximately 28,000 caravans within East Lindsey, with over 300 licensed sites; the highest concentration in Europe. Beyond the popular beaches, visitors are drawn to the wild stretches of coast at Gibraltar Point and north of Mablethorpe. There is a visitor centre at Gibraltar Point to cater for tourists.

Offshore activity

J5.61 There are currently two offshore wind farms under construction along the SMP coastline; Inner Dowsing and Lynn, offshore of Skegness. The Inner Dowsing and Lynn windfarms will each

have 27 turbines with an output of 90MW. There are also a number of planned and/or proposed offshore wind farms (including the Westermost Rough, Humber Gateway and Lincolnshire windfarms as well as a number of windfarms further offshore), which may require on-shore facilities along the coastline. Existing power generation infrastructure on the south bank of the Humber is a particular attraction for further wind turbine development. However, care needs to be taken to protect this area from over-development of wind turbines to the detriment of the area's character and amenity.

J5.62 There are eight areas licensed for marine sand and aggregate extraction; the most northerly area is offshore of Easington and the most southerly area offshore of Chapel St Leonards. The Yorkshire and Humber Plan: Regional Spatial Strategy highlights that it is important to consider offshore sand and gravel extraction, which may have adverse marine environmental impacts. The East Midlands Biodiversity Strategy highlights that aggregate extraction could affect the seabed topography as well as increasing turbidity. This could disturb the benthic communities and possibly lead to a reduction in species diversity and loss of communities of marine species. Current studies (including the Southern North Sea Sediment Transport Study) do not support a link between dredging and erosion on the Holderness coast.

Likely Evolution of the Baseline without the Plan

J5.63 Without the SMP, there would be no strategic planning regarding the evolution of the coastline. As natural processes compounded by sea level rise and climate change continues to alter the coastline, it is likely that unforeseen problems would occur across the range of receptors which may have been avoided by adequate advanced planning.

J5.64 The SMP is the first stage in Defra's coastal planning system (see Figure 2.1); funding for subsequent stages of planning and delivery of coastal defences depends on the recommendations of the SMP. So without the SMP, central government funding for coastal and flood defences would be minimal, resulting in less maintenance and construction of defences, putting increased pressure on communities.

J5.65 The current planning system uses SMPs as part of its evidence base to inform locations for safe, sustainable development. Without the science behind SMPs, it is likely that, following the precautionary principle, no development would be permitted within the coastal strip. This would clearly blight coastal communities, which already have higher than average deprivation levels.

J5.66 Without the SMP, communities as well as industry and agriculture would have no certainty about future levels of protection from coastal erosion and flooding. This can only be detrimental for communities, agriculture, industry, tourism and the historic environment.

J5.67 The natural environment would also be adversely affected if the SMP was not produced; it is important that predictions are made as to how the coastline will evolve in the future and how this will impact on the natural environment so that mitigating measures can be initiated before significant damage occurs.

J6 Likely Significant Effects of the Plan

J6.1 This section summarises the impacts resulting from the Plan. The implications of the Shoreline Management Plan have been assessed as part of the policy development process; the impacts of the policies are shown graphically for each policy unit within the policy statements in Chapter 9 of the Main SMP Document.

J6.2 The policies have been developed following a Strategic Environmental Assessment (SEA) process which takes into consideration environmental, social and economic impacts in their widest sense.

J6.3 The main implications of the policies are summarised below, by policy unit.

Policy Unit A: Flamborough Head to Sewerby

J6.4 The policy within this unit will allow the chalk cliffs to continue to erode slowly. This has significant positive impacts for the natural environment in that natural processes will continue leading to the exposure of the Flamborough chalk cliffs and continued formation of caves, important for their geological interest and as BAP habitat (subtidal chalk). This policy will result in a neutral effect on the habitats and species (including BAP habitats) for which Flamborough Head is designated (as a SAC, SPA and SSSI) as they will be sustained by the policy. The policy also has a moderate beneficial effect on the landscape by maintaining natural processes and hence a moderate beneficial effect on tourism, which in this unit is focussed around the natural beauty of the area.

J6.5 The policy allows for works to maintain the continued viability of the RNLI Station at South Landing which will have a major beneficial effect on local communities and visitors.

J6.6 No settlements are at risk under this policy over the lifetime of the Plan due to the slow erosion rate in this area so negative impacts on local communities of this policy are minor. There will also be minor adverse impacts on agricultural land, with approximately 4 hectares of agricultural land (grade 3) potentially at threat from erosion by 2025; a further 11 hectares of agricultural land (grade 3) are potentially at threat by 2055, with further agricultural land (grade 3) at risk of erosion by the end of the Plan period in 2105.

J6.7 The policy will result in major adverse impacts on historic environment assets, with approximately 10 records noted in English Heritage's Rapid Coastal Zone Assessment at threat by 2055 and further records at risk of erosion by the end of the Plan period. By the end of the Plan period, two listed buildings and two scheduled monuments are predicted to be lost under this policy.

Policy Unit B: Bridlington to Hilderthorpe

J6.8 Under this policy, coastal defences will continue to be held in their current alignment which will protect people and property and maintain the viability of Bridlington as a town, seaside resort and regional commercial centre. This will have a major positive impact on the local community and tourism. In addition, the policy will have a beneficial effect for infrastructure and historic environment assets within this unit as they will continue to be protected.

J6.9 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderate, negative impact on coastal processes. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting moderate, negative impact on the landscape quality of the area, which may have a major negative impact by the end of the Plan period. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

Policy Unit C: Wilsthorpe to Atwick

J6.10 The policy within this unit means that the undefended cliffs will continue to erode and the rate of erosion may increase over time as a result of sea level rise. This policy will result in major beneficial effects as natural coastal processes will be maintained in this area; sediment released from the eroding cliffs will feed the beaches in this area and southerly frontages, providing important natural coastal protection. This policy will maintain the natural character of the rural landscape within this unit which is important for the tourism industry, key in this area. The policy will also benefit the Withow Gap SSSI by maintaining natural processes leading to the exposure of the glacial and post-glacial deposits at Skipsea.

J6.11 The extent of erosion predicted over the Plan period means that infrastructure in this area (including the natural gas storage and processing facilities north of Atwick and the A165) will not be affected under this policy.

J6.12 This policy will result in moderate beneficial effects at Barmston Drain where the policy allows for works to be undertaken to maintain the functionality of the drain, allowing for continued management of flood risk with resulting beneficial effects for the local community and agriculture. There may also be minor benefits for the natural environment if works maximise the opportunities for habitat creation, particularly at the Local Wildlife Site in the vicinity of Barmston Drain.

J6.13 This policy will result in some major adverse impacts for property with approximately 27 houses potentially at threat from erosion by 2025; the level of significance will increase however as a further 46 houses are potentially at threat by 2055, with further property at risk from erosion by the end of the Plan period.

J6.14 There will also be moderate adverse impacts on agricultural land, with approximately 40 hectares of agricultural land potentially at threat from erosion by 2025; a further 80 hectares of agricultural land (almost entirely grade 3) are potentially at threat by 2055, with further agricultural land (predominantly grade 3 and a small amount of grade 2 agricultural land) at risk of erosion by the end of the Plan period in 2105.

J6.15 The policy will result in moderate adverse impacts on historic environment assets, with approximately 60 records noted in English Heritage's Rapid Coastal Zone Assessment at threat by 2055 and further records at risk of erosion by the end of the Plan period. No scheduled monuments or listed buildings would be lost under this policy over the lifetime of the Plan.

Policy Unit D: North Cliff to Hornsea Burton (Hornsea)

J6.16 Under this policy, coastal defences will continue to be held in their current alignment which will protect people and property and maintain the viability of Hornsea as a town, seaside resort and

regional commercial centre. This will have a major positive impact on the local community and tourism. In addition, the policy will have significant beneficial effects for infrastructure and historic environment assets within this unit as they will continue to be protected.

J6.17 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderately negative impact on coastal processes. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting moderate negative impact on the landscape quality of the area, which may be of major significance by the end of the Plan period. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

Policy Unit E: Rolston to Waxholme

J6.18 The policy within this unit means that the undefended cliffs will continue to erode and the rate of erosion may increase over time as a result of sea level rise. At Mappleton, the current defence line will be held for the short and medium term at least and a sustainable flood defence in the vicinity of Tunstall Drain may be maintained through coastal flood defences.

J6.19 This policy will result in positive impacts as natural coastal processes will be maintained in the majority of this area; sediment released from the eroding cliffs will feed the beaches in this area and southerly frontages, providing important natural coastal protection. This policy will maintain the natural character of the rural landscape within this unit which is important for the tourism industry, which is key in this area. The policy will also benefit the submarine forest at Tunstall by maintaining natural processes. There is the potential for a minor negative impact on coastal processes through maintenance of the short length of defences at Mappleton; the need for monitoring of coastal processes has been identified for this area to determine whether continuing to hold the line at Mappleton is still sustainable in the long-term.

J6.20 The extent of erosion predicted over the Plan period means that most infrastructure in this area (including the natural gas storage and processing facilities south east of Aldbrough, sewage treatment works) will not be affected under this policy. A narrow strip of Cowden Parva MOD land near the cliffline will be lost to erosion over the course of the Plan and there is the potential for a moderate negative impact on the transport network, as the B1242 may be at threat by the middle of the Plan period.

J6.21 This policy will result in a major beneficial effect at Tunstall Drain where the policy allows for works to be undertaken to maintain a sustainable flood defence, allowing for continued management of flood risk with a resulting major benefit for the local community and agriculture. There is also potential for a moderate natural environment benefit if works maximise the opportunities for habitat creation at Tunstall Drain.

J6.22 This policy will result in some adverse impacts for property with approximately 10 houses potentially at threat from erosion by 2025; a further 22 houses are potentially at threat by 2055, with further property at risk of erosion by the end of the Plan period. However, properties within Mappleton will continue to be protected for the short and medium-term at least.

J6.23 There will also be moderate adverse impacts on agricultural land, with approximately 70 hectares of agricultural land (grade 3) potentially at threat from erosion by 2025; a further 130 hectares of agricultural land (grade 3) are potentially at threat by 2055, with further agricultural land (grade 3) at risk of erosion by the end of the Plan period in 2105.

J6.24 The policy will result in major adverse impacts on historic environment assets, with approximately 50 records noted in English Heritage's Rapid Coastal Zone Assessment at threat by 2055 and further records at risk of erosion by the end of the Plan period. Significant damage and potentially loss is predicted to a scheduled monument (comprising two moated sites near Grimston Garth) under this policy over the lifetime of the Plan.

Policy Unit F: Owthorne to Hollym (Withernsea)

J6.25 Under this policy, coastal defences will continue to be held in their current alignment which will protect people and property and maintain the viability of Withernsea as a town, seaside resort and regional commercial centre. This will have a major beneficial effect on the local community and tourism. In addition, the policy will have major benefits for infrastructure and historic environment assets within this unit as they will continue to be protected.

J6.26 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderately negative impact on coastal processes. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting moderate negative impact on the landscape quality of the area, which may be considered as a major impact by the end of the Plan period. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

Policy Unit G: Hollym to Dimlington Cliffs

J6.27 The policy within this unit means that the undefended cliffs will continue to erode and the rate of erosion may increase over time as a result of sea level rise. This policy will result in major beneficial effects as natural coastal processes will be maintained in this area; sediment released from the eroding cliffs will feed the beaches in this area and southerly frontages, providing important natural coastal protection. This policy will maintain the natural character of the rural landscape within this unit which is important for the tourism industry, key in this area. The policy will also benefit the Dimlington cliffs by maintaining natural processes leading to the exposure of the geological features; this is beneficial in terms of the educational value it provides i.e. what can be learnt from the exposed stratigraphy.

J6.28 The extent of erosion predicted over the Plan period means that some infrastructure in this area (including the A1033 and Out Newton wind farm) will not be affected under this policy. The coastal road at the northern end of the unit could be at threat from erosion by the middle of the Plan period and the Hollym sewage works are likely to be lost to erosion by the end of the Plan period.

J6.29 This policy will result in some minor adverse impacts for property initially; the level of impact will increase, because although no houses are at risk from erosion by 2025, 5 houses are potentially at threat by 2055, with further property at risk of erosion by the end of the Plan period. This is considered to be a major negative impact by the end of the Plan period.

J6.30 There will also be moderate adverse impacts on agricultural land, with approximately 30 hectares of agricultural land (grade 3) potentially at threat from erosion by 2025; a further 50 hectares of agricultural land (almost entirely grade 3) are potentially at threat by 2055, with

further agricultural land (grades 2 and 3) at risk from erosion by the end of the Plan period in 2105.

J6.31 The policy will result in moderate adverse impacts on historic environment assets, with approximately 20 records noted in English Heritage's Rapid Coastal Zone Assessment at threat by 2055 and further records at risk of erosion by the end of the Plan period. No scheduled monuments or listed buildings would be lost under this policy over the lifetime of the Plan.

Policy Unit H: Dimlington and Easington Gas Terminals

J6.32 Under this policy, current defences will continue to be held in their current alignment which will protect the Dimlington and Easington Gas Terminals while there is a strategic need for the sites. This will provide major benefits for these industrial sites which are nationally strategically important since they provide 20 – 25% of the UK's gas supplies.

J6.33 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderate, negative impact on coastal processes. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting negative impact on the landscape quality of the area. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

Policy Unit I: Easington to Kilnsea

J6.34 The defences within this policy unit comprise two flood embankments; one is a private defence south of Kilnsea and the other is an Environment Agency defence landward of the Easington Lagoons.

J6.35 Under this policy, the line will continue to be held for the Easington Lagoons and Kilnsea flood defences, which will provide significant benefits for communities and agriculture. There is provision for limited Managed Realignment to ensure defence sustainability and compliance with current environmental legislation for all epochs. This will provide significant benefits for the natural environment as the conservation value of the Lagoons SSSI (part of the Humber Estuary SPA and Ramsar site) will be maintained. There are BAP habitats within this unit (saline lagoons, saltmarsh and coastal vegetated shingle) which are currently threatened by erosion and opportunities will need to be taken at the strategy and scheme stage to maintain these important habitats; this work is currently ongoing.

J6.36 The policy means that the undefended frontages will continue to erode, which will ensure the continued feed of sediment to downdrift areas, thus helping to maintain important features such as Spurn and the supply of sediment to the Humber and Lincolnshire; this provides major benefits for the natural environment and also communities as the sediment provides important natural coastal protection.

J6.37 The policy will result in moderate adverse impacts on historic environment assets, with approximately 10 records noted in English Heritage's Rapid Coastal Zone Assessment at threat by 2055 and further records at risk of erosion by the end of the Plan period. No scheduled monuments or listed buildings would be lost under this policy over the lifetime of the Plan.

Policy Unit J: Kilnsea to Spurn Point

J6.38 The policy for Spurn is to allow the natural evolution and manage the alignment of the spit, only intervening where necessary to assist the healing of breaches, if they occur. This will be undertaken through generally softer engineering solutions, such as sediment nourishment, to maintain the integrity of the barrier. Road repairs and realignment may also be required to maintain access to the facilities at Spurn Point.

J6.39 This policy has significant benefits for the natural environment in that natural processes will continue leading to the natural geomorphological change of Spurn. This will result in a siginificantly beneficial effect for the habitats and species for which Spurn is designated (as a SAC, SPA, Ramsar site, SSSI and NNR) as they will be sustained by the policy. The policy also has a significant beneficial effect on the landscape by maintaining natural processes and hence there should be no impact on tourism, which in this unit is focussed around the natural beauty and bird-life of the area. The policy also moderately benefits the infrastructure on Spurn (including RNLI station, Humber pilots station, visitor centre etc) although by the end of the Plan period, it is likely that there may be disruption, caused by the natural evolution of Spurn which has the potential to have a moderately negative impact on some of the infrastructure described above.

J6.40 As the spit evolves, there is a risk of damage to historic environment assets in the medium to long term, including the listed buildings of the lighthouse and tower of the former lighthouse, as well as records noted in English Heritage's Rapid Coastal Zone Assessment. This is considered to be a moderate, negative impact.

Policy Unit K: Easington to Stone Creek

J6.41 The policy within this unit means that the current standard of protection against flooding will be maintained and sustained in response to sea level rise. This policy has major positive benefits for local communities as all commercial and domestic properties and settlements in this area will continue to be protected. The policy will also protect the large majority of extensive and productive agricultural land (best and most versatile land grades 1,2 and 3a) in this area as well as historic environment assets protected behind the current defence line (including a number of scheduled monuments such as Winestead manor moated site and Stone Creek heavy anti-aircraft gun site) and key infrastructure such as drainage infrastructure including pumping stations and the A1033, a key transport link.

J6.42 This area receives an input of sediment from the Holderness cliffs; it is predicted that this sediment input is unlikely to keep pace with sea level rise, resulting in coastal squeeze within the Outer Humber Estuary. The policy recognises that to ensure sustainable flood defences and meet the requirements of current environmental legislation, limited managed realignment of defences may be required. This may be necessary to mitigate the negative impacts of a hold the line policy on the natural environment, including the internationally designated Humber Estuary; this will have a neutral effect on the Humber's important habitats (which include BAP saltmarsh and mudflat habitats) and species (including BAP species such as river lamprey and sea lamprey) within this policy unit as the policy will allow the site's integrity to be maintained.

J6.43 Limited managed realignment will result in the loss of some agricultural land of varying grades, (likely to be classified as best and most versatile land in this Policy Unit area), but this loss is minimal and therefore considered to be a minor negative impact compared to the area of

farmland that would be lost if the hold the line policy were not enabled. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise. Further beneficial effects of managed realignment will result from secondary defences constructed as an integral part of any realigned area as these will provide a more sustainable flood defence for people, properties and high quality agricultural land further inland than currently exists.

Policy Unit L: East Immingham to Cleethorpes

J6.44 Under this policy, coastal defences will continue to be held in their current alignment which will protect people and property and maintain the viability of Grimsby and Cleethorpes as towns, seaside resorts and regional commercial centres. This will provide a major positive benefit for the local community and tourism. In addition, the policy will have a major beneficial effect for infrastructure and industry as the nationally important Port of Grimsby and its associated infrastructure (including docks, fish processing facilities etc) will continue to be protected. Historic environment assets within this unit (including scheduled monuments such as the Stallingborough medieval settlement, post-medieval manor house and formal gardens) will also benefit from this policy as they will continue to be protected.

J6.45 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderately negative impact on coastal processes with potential for a major negative impact by the end of the Plan period. This will include a major negative impact on the natural environment, particularly the internationally designated Humber Estuary and its important habitats and species including BAP mudflat habitats and species. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting negative impact on the landscape quality of the area, which may be of moderate significance by the end of the Plan period. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

Policy Unit M: Humberston Fitties

J6.46 The floodplain is currently protected by two lines of defence. The first line of defence consists of a flood bank fronted by a groyne field. The second line of defence consists of a floodbank through Humberston Fitties Chalet Park.

J6.47 For epoch 1, the policy will mean that the first line of flood defences will be maintained at their present crest level, maintaining the existing standard of protection to the Humberston Fitties Chalet Park which will have a significant positive benefit for the local community and tourism. The second line of defences will be maintained and raised to continue the present day standard of protection to the floodplain which will provide significant benefits for communities, agriculture (due to the high grade agricultural land in this area) and infrastructure (including continued protection to the A1033).

J6.48 The same policy approach will be maintained into epoch 2 but it is understood that rising sea levels may effectively diminish the standard of defence for the front line of defences, with a resulting moderate negative impact on the local community and tourism. During epoch 2 it will be necessary to evaluate the overall feasibility of maintaining the defences against alternative strategies for reducing the threat that sea level rise poses to human life including the wider

economic consequences of not maintaining the defences, particularly as they affect the Fitties chalet park.

J6.49 In epoch 3 the second line of defence will be maintained and raised to counter sea level rise and will continue to ensure a very good standard of flood protection is provided. There is the potential for a minor negative impact on historic environment assets if any assets are affected when the second line of defence is increased in size to account for sea level rise. By epoch 3, the approach needed with regard to the chalet park will need to have been decided. The approach will be developed with all interested parties in the community and those with a responsibility for ensuring a satisfactory outcome, whilst allowing sufficient time for adaptation of the local community within the chalet park to future change.

Policy Unit N: South of Humberston Fitties to Theddlethorpe St Helen

J6.50 The policy within this unit means that the current standard of protection against flooding will be maintained and sustained in response to sea level rise. This policy will have major benefits for local communities as all commercial and domestic properties and settlements in this area will continue to be protected. The policy will also protect the large majority of extensive and productive agricultural land (best and most versatile land grades 1,2 and 3a) in this area as well as historic environment assets protected behind the current defence line (including a number of scheduled monuments such as the cross in St Peter and St Paul's churchyard (Tetney), cross in St Nicholas churchyard (North Cotes), cross in St Mary's churchyard (North Somercoates) etc) and key infrastructure such as the reservoir, sewage treatment works, the A1031, MOD site and oil terminal. The important tourism industry in this area will not be adversely affected in terms of flood risk.

J6.51 This area receives an input of sediment from the Holderness cliffs; currently the upper foreshore is accreting whilst the lower foreshore is retreating within the Outer Humber Estuary. The net result is projected inter-tidal habitat losses. The policy recognises that to ensure sustainable flood defences and meet the requirements of current environmental legislation, limited managed realignment of defences may be required. This may be necessary to mitigate the negative impacts of a hold the line policy on the natural environment, including the internationally designated Humber Estuary Natura 2000, Ramsar site and NNR at Donna Nook and Saltfleetby-Theddlethorpe; it would enable the integrity of site within this policy unit to be maintained. It will also ensure that BAP habitats within this unit (including coastal sand dunes and coastal saltmarsh and potentially coastal vegetated shingle) are maintained.

J6.52 Limited managed realignment will result in the loss of some agricultural land of varying grades, (likely to be classified as best and most versatile land in this Policy Unit area), but this loss is minimal compared to the vast area of farmland that would be lost if the hold the line policy were not enabled and is thus considered to be a minor impact. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise. Secondary defences constructed as an integral part of any realigned area will provide a more sustainable flood defence for people, properties and high quality agricultural land further inland than currently exists.

Policy Unit O: Viking Gas Terminal (Mablethorpe) to southern end of Skegness

J6.53 Under this policy, the current standard of protection against flooding will be maintained and sustained which will protect people and property and maintain the viability of the coastal towns of Mablethorpe and Skegness as towns, seaside resorts and regional commercial centres as well as maintaining the coastal settlements along this frontage. This will provide a major beneficial effect for local communities and tourism, which is key for the regional economy of this area. In addition, the policy will have major beneficial effects with regard to infrastructure (including drainage infrastructure, transport links, sewage works etc) and historic environment assets (including a number of scheduled monuments such as Hagnaby Abbey, Markby Priory, Saxon burial mound at Cock Hill etc) within this unit as they will continue to be protected.

J6.54 However, the policy means that natural erosion processes will be prevented within this policy unit with a corresponding moderately negative impact on coastal processes. It is anticipated that over the lifetime of the Plan, sea level rise will mean that man-made coastal defences will become increasingly significant in size with a resulting moderate negative impact on the landscape quality of the area, which may be of major significance by the end of the Plan period. There is the potential for a minor negative impact on historic environment assets if any assets are affected when coastal defences are increased in size to account for sea level rise.

J6.55 In the longer term (epoch 3), accelerating sea level rise could begin to cause problems for defence sustainability as sea levels rise. Managed realignment could be considered locally, in areas where appropriate, to ensure sustainable flood risk management for the future. The landward extent of any new defence line would be the minimum required to ensure sustainable defences; minimising the impacts on agricultural land, people, property and the historic environment. There will need to be sufficient planning and time allocated for adaptation if this is undertaken.

J6.56 This policy could also potentially provide environmental, landscape and tourism benefits if defences are realigned in appropriate areas. There will be a need for further studies to monitor management inputs required to defend the coastline (which will depend on the rate of future sea level rise and increased storminess) and consider potential localised managed realignment sites (where appropriate) and assess the beneficial effects and negative impacts of any potential managed realignment scheme.

Policy Unit P: Seacroft to Gibraltar Point

J6.57 The policy within this unit means that the current standard of protection against flooding will be maintained and sustained in response to sea level rise. Currently this area is accreting, partly dependent on material from the Holderness cliffs and this trend is likely to continue in the short and medium term at least. Sand dunes form effective natural defences in this policy unit and these are supplemented by flood embankments around the Steeping River. Due to continued accretion, the existing defences are not under threat from erosion and intervention to maintain the defence standard is unlikely to be necessary in the short term at least.

J6.58 This policy will provide beneficial effects for local communities as all commercial and domestic properties and settlements in this area will continue to be protected. The policy will also protect the productive agricultural land (best and most versatile land grades 1,2 and 3a) in this area as well as historic environment assets (including a Grade 1 listed building in Wainfleet All Saints)

and key infrastructure such as the A52, drainage infrastructure, rail network etc. The important tourism industry in this area will not be adversely affected in terms of flood risk. Since intervention will not be required in the short and medium term at least, this policy will have a neutral effect on the natural environment as the habitats and species for which Gibraltar Point is designated (as a SAC, SPA, Ramsar site, SSSI and NNR) will be maintained under natural processes. This includes BAP habitat such as coastal sand dunes and coastal saltmarsh.

J6.59 In the longer term, the current accretion trend may slow and potentially change to an erosion trend. This is dependent on sea level rise and the mechanism used to carry out the policies in updrift frontages. In order to respond to this threat, the policy has identified that there may be a requirement for managed realignment in the longer term (epoch 3). Currently, there is not enough evidence to be able to firmly predict if and when this may be needed. If managed realignment is needed, it is likely to result in the loss of some land directly behind the defences but it would provide more sustainable flood defence for both the people and the high quality agricultural land further inland and the loss of land would be minimal compared to the area of farmland that would be lost if the hold the line policy were not enabled.

Habitat Regulations Assessment

J6.60 In addition to the general assessment provided above, a Habitat Regulations Assessment was undertaken to assess the impact of the preferred policies on European designated sites. The conclusions of this assessment are summarised below:

Summary of Screening

J6.61 It was concluded that significant effects on Flamborough Head Special Area of Conservation (SAC), Flamborough Head to Bempton Cliffs Special Protection Area (SPA), Hornsea Mere SPA and Inner Dowsing, Race Bank & North Ride pSAC could be described as unlikely due to the absence of any impact pathway linking SMP policy to the interest features of these sites.

Appropriate Assessment

J6.62 It is considered important to be able to demonstrate how SMP policy evolved to incorporate amendments that were identified as being necessary to avoid or mitigate adverse effects, or (where necessary) facilitate the delivery of compensatory habitat. This section therefore summarises the adverse effects that would arise from SMP policy in the absence of any such measures:

The Humber Estuary SAC/SPA/Ramsar site

J6.63 The Appropriate Assessment concluded that the following adverse effects may result from SMP policies:

Epoch 1

- Landtake in all policy units where HTL is to be applied due to potential increases in defence footprint;
- An adverse effect on the internationally important habitats and bird interest of The Lagoons SSSI (Easington Lagoons) as a result of a HTL policy in Policy Unit I resulting in coastal squeeze;

- An adverse effect on the intertidal mudflats and pioneer saltmarsh (and on the bird interest of the SPA) in Policy Unit K (Spurn Bight and Welwick Marsh) as a result of a HTL policy This will lead to a decline in the quantity of habitat available for the passage and wintering waterfowl populations for which this is a significant area. It may also increase the pressure on habitat elsewhere within the outer, middle and inner estuary as birds are displaced, or cause displacement from the estuary altogether; and
- A possible adverse effect on the intertidal mudflats and sandflats (and thus SPA features) that lies within Policy Unit L as a result of coastal squeeze resulting from a HTL policy.
- An adverse effect on the intertidal mudflats and pioneer saltmarsh in Policy Unit K (Spurn Bight and Welwick Marsh) as a result of a HTL policy and possible increase in defence footprint to meet P4 requirements, which differs from the Humber Flood Risk Management Strategy policy for this Unit.

J6.64 The coastal squeeze effects will act 'in combination' on the estuary as a whole with the HTL policies for the Inner and Middle Estuaries as set out in the Humber Flood Risk Management Strategy, which will also lead to coastal squeeze.

Epoch 2

- Landtake in all policy units where HTL is to be applied due to potential increases in defence footprint;
- An adverse effect on the intertidal mudflats and pioneer saltmarsh in Policy Unit K (Spurn Bight and Welwick Marsh) as a result of a HTL policy. This will lead to a decline in the quantity of habitat available for the passage and wintering waterfowl populations for which this is a significant area. It may also increase the pressure on habitat elsewhere within the outer, middle and inner estuary as birds are displaced, or cause displacement from the estuary altogether; and
- An adverse effect on the intertidal mudflats and sandflats that lies within Policy Unit L as a result of coastal squeeze resulting from a HTL policy. This reduction in habitat extent will in turn lead to a decline in the quantity of habitat available for the population of passage and wintering waterfowl in these areas.
- A disturbance impact on waterfowl when defences are being maintained if not appropriately timed.

J6.65 The coastal squeeze effects will act 'in combination' on the estuary as a whole with the HTL policies for the Inner and Middle Estuaries as set out in the Humber Flood Risk Management Strategy, which will also lead to coastal squeeze.

Epoch 3

- Landtake in all policy units where HTL is to be applied due to potential increases in defence footprint;
- A continuing adverse effect on the intertidal mudflats and pioneer saltmarsh in Policy Unit K (Spurn Bight and Welwick Marsh) as a result of a HTL policy. This will lead to a decline in the quantity of habitat available for the passage and wintering waterfowl populations for which this is a significant area. It may also increase the pressure on habitat elsewhere within the outer, middle and inner estuary as birds are displaced, or cause displacement from the estuary altogether.

- Continuing adverse effects on the intertidal mudflats within Policy Units L and M. Adverse effects may (as a worst case scenario) also occur on the coastal lagoons, sand dune and saltmarsh in Policy Unit N due to a shift from accretion to erosion, leading to habitat loss for SPA birds;
- An adverse effect on sandflat habitat available for the grey seal colony at Donna Nook and the natterjack toad colony at Saltfleet within Policy Unit N as a result of coastal squeeze due to a HTL policy, as well as an accompanying loss of intertidal habitat for SPA birds; and
- An adverse effect throughout the Humber Estuary SAC as a result of increased erosion associated with a reduction in sediment deposition as a result of the coastal defences with Policy Unit L and Policy Unit M and Policy Units B, D, E (with regard to Mappleton), F and H along the Holderness coast. It should be noted that this uses best expert judgment and that there is no absolute certainty as to when adverse effects will commence. Therefore, the SMP Action Plan must include measures to further investigate and resolve this issue such that any revisions to policy can be made following the obtaining of further data.
- A disturbance impact on waterfowl when defences are being maintained if not appropriately timed.

Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC/ Gibraltar Point SPA/Gibraltar Point Ramsar site

J6.66 The Appropriate Assessment concluded that the following adverse effects may result from SMP policies:

- A disturbance impact on waterfowl when defences are being maintained if not appropriately timed.
- Adverse effects from Epoch 3 on the dune system and saltmarsh through coastal squeeze as artificial replenishment of sediment up-drift and sediment transported from offshore fails to counterbalance the accelerating rate of sea level rise. This will occur as a result of the HTL policy in Units N and P;
- An adverse effect from Epoch 3 on the dune system as sediment transport into the SAC declines due to a HTL policy for Policy Unit O.

The Wash & North Norfolk Coast SAC/ The Wash SPA & Ramsar site

J6.67 The Appropriate Assessment concluded that the following adverse effects may result on the integrity of the SAC, SPA and Ramsar site, particularly when considered in combination with the HTL policies contained within The Wash SMP:

- An adverse effect from Epoch 3 due to the reduction in sediment inputs arising from a HTL policy in Policy Units B D, F, H and N - P.

J6.68 It was therefore considered necessary to incorporate wording into the final policies to enable the delivery of avoidance, mitigation or (if neither is possible) compensation for the above adverse effects.

Amendments Made to Policy to Facilitate Avoidance or Mitigation

Mitigation for disturbance of waterfowl and landtake due to defence footprint (all sites in all Epochs)

J6.69 A form of words was devised for the SMP or Action Plan which addresses this issue, such as 'works will be timed to avoid significant disturbance'. The following wording was also incorporated into the SMP in order to address issues of defence footprint: 'The working areas for each flood defence scheme will be subject to detailed design in order to minimise the defence footprint. There will be no increase in defence footprint unless adverse effects on the integrity of European sites can be avoided, or unless there are no alternatives and an IROPI test is made and any compensatory habitat creation agreed'.

Mitigation - (Humber Estuary SAC/SPA/Ramsar site – Epoch 3)

J6.70 The SMP Action Plan includes an action to further investigate the sediment supply issue, commencing in Epoch 1. Any investigation would need to include exploration of the effectiveness of measures to avoid or mitigate this effect. Until the Action Plan study mentioned above is completed, the SMP policies for Units E and H allow flexibility such that offsetting sediment release could be achieved, particularly in future epochs.

Mitigation - (Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC/ Gibraltar Point SPA & Ramsar site - Epoch 3)

J6.71 SMP policy will address a potential decline in sediment supply in Epoch 3 through allowing for the need to adopt MR within Policy Units N, O and P to allow for continued supply of sediment if it proves necessary

Mitigation – (The Wash & North Norfolk Coast SAC / The Wash SPA/ The Wash Ramsar site - Epoch 3)

J6.72 SMP policy will ensure that the SMP area continues to contribute sediment to The Wash during Epoch 3 through the following policies:

- Policy Units A, C, E (except for Mappleton) and G – These are all along the Holderness Coast and are No Active Intervention, which will ensure the continued feed of sediment to down-drift areas, thus helping to maintain important features such as Spurn, and the supply of sediment to the Humber and Lincolnshire coast;
- Policy Unit E – This Policy Unit is NAI for most of its length. However during Epochs 1 and 2 it also includes a small section of HTL at Mappleton. This will be associated with monitoring of coastal processes to determine whether continuing to hold the line at Mappleton is still sustainable in Epoch 3. As such, the policy includes flexibility for a change in policy to NAI to release more sediment from the Holderness Coast at Mappleton within Epoch 3;
- Policy Unit H – This Policy Unit is HTL for current defences and NAI elsewhere. However, if planning permission for the defences is not extended or there was no longer a strategic need for the site, defences in front of Easington Gas Terminal could be removed and No Active Intervention could then be undertaken. If this takes place it will contribute to a release of sediment from the Holderness Coast;

- Policy Units N, O and P allow for Managed Realignment to be considered locally, where appropriate during Epoch 3.

J6.73 The incorporation of the above mitigation measures do enable us to conclude that the there will be no adverse effect on any European sites through disturbance of waterfowl or reduction in sediment supply as a result of SMP policies. However, the mitigation measures above do not enable us to conclude that coastal squeeze impacts on the Humber Estuary SAC, SPA or Ramsar site will be either avoided or mitigated to such an extent that they can be described as 'unlikely to be significant'.

J6.74 It was therefore necessary for additional policy wording to be devised that would facilitate the delivery of compensatory habitat in appropriate policy units within the outer Humber Estuary. These are set out below.

Amendments made to policy to facilitate compensatory habitat to be provided through the HFRMS in Epochs 1 and 2

Epoch 1

Adverse effects on intertidal mudflats and saltmarsh and habitat for wintering waterfowl in Policy Units I, K and L due to coastal squeeze

J6.75 The delivery of this habitat creation during Epoch 1 is facilitated by the SMP policies for Units K and N of the Humber Estuary. The policy wording for both Units states that 'To ensure sustainable flood defence and to meet the requirements of environmental legislation, detailed studies will identify sites for limited managed realignment in the order of 100 hectares on the north [or in the case of Unit N, south] bank of the Humber Estuary'. This policy for Unit K will enable additional habitat to be provided to replace the loss of the high-tide roost function of The Lagoons, while the policy for Unit N will enable the creation of replacement shingle habitat in a policy unit in which little terns have previously been known to nest.

Epoch 2

Delivery of long-term habitat creation for effects on the Lagoons SSSI

J6.76 The delivery of this compensation during Epoch 2 is addressed by the policy for Policy Unit I. This Policy Unit is HTL (P3) for the current defences with NAI elsewhere, across all 3 Epochs, but the Policy comments make it clear that options other than HTL in Epochs 2 and 3 may be considered subject to monitoring of coastal processes, future studies and third party decisions and that limited MR may occur, informed by the Humber Flood Risk Management Strategy. This would enable the provision of replacement for the Easington Lagoons habitat which will enable habitat creation to be provided for the long term preservation of the interest features of Easington Lagoons.

Adverse effects on SAC habitats and habitat for wintering SPA waterfowl in Policy Units K and L due to coastal squeeze

J6.77 Additional realignment schemes will continue to be sought in the Strategy as opportunities arise. SMP policy enables this through the preferred policy for Policy Units K and N, as for Epoch 1, since these both allow for MR during Epoch 2.

Amendments made to policy to facilitate any need for compensatory provision in Epoch 3 with regard to the Humber Estuary SAC, SPA & Ramsar site

Loss of intertidal habitat in Units K, L, M and N due to coastal squeeze

J6.78 The SMP policy has been amended to address this through the preferred policies for Policy Units K, M (to a small extent) and N, since these all allow for MR during Epoch 3. Managed Realignment in Unit N will not only permit intertidal habitats to migrate inland (thus providing compensatory intertidal sandflat for the grey seals at Donna Nook) but will also enable the inland migration of sand dune habitat in order to compensate for any loss of dune habitat for natterjack toads elsewhere in the Policy Unit.

Possible compensation that might required before the end of Epoch 3 to assist in offseting increased intertidal habitat losses due to reduced sediment supply

J6.79 If compensatory habitat creation is required to supplement additional sediment release and nourishment, this will need to take the form of a new area of managed realignment in a location that is rendered less vulnerable to sediment supply issues. These locations could be within the inner and middle estuaries or within the outer estuary in policy units K or N (which already allow for the provision of managed realignment) with the realignment designed to maximise sediment capture. It is not possible to estimate with any accuracy the scale of habitat creation required as compensation at this stage, particularly since in practice it may prove unnecessary to deliver it at all. Therefore this must be resolved through the Action Plan study identified previously.

Conclusion

J6.80 With the adoption of the policy wording detailed in Chapter L12 of the HRA (Appendix L) it can be concluded that there will be no adverse effect on any European sites through disturbance of waterfowl or reduction in sediment supply as a result of SMP policies and no adverse effects on Saltfleetby to Theddlethorpe Dunes & Gibraltar Point SAC, Gibraltar Point SPA or Gibraltar Point Ramsar site.

J6.81 The mitigation measures in that Chapter do not enable us to conclude that coastal squeeze impacts on the Humber Estuary SAC, SPA or Ramsar site will be either avoided or mitigated to such an extent that they can be described as ‘unlikely to be significant’. It is therefore necessary for the competent authority to make a case for a) no alternatives and b) Imperative Reasons of Overriding Public Interest to the Secretary of State.

J6.82 In order to make the ‘IROPI case’ it was necessary for additional policy wording to be devised that would facilitate the delivery of an adequate scale of compensatory habitat in appropriate policy units within the outer Humber Estuary. This has been accomplished as described in Chapters L14 and L15 of the HRA (Appendix L) in discussion with Natural England and the Environment Agency. As part of the IROPI process it is also necessary for an evaluation of alternatives to maintaining the defences to be made and for a justification for adopting the policy despite the adverse effects to be made on the basis of Imperative Reasons of Overriding Public Interest. The ‘no alternatives’ and ‘IROPI’ justifications are contained in a separate document.

Water Framework Directive Assessment

The Water Framework Directive

J6.83 The Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy) was passed into UK law in 2003. The overall requirement of the Directive is that all river basins must achieve "good ecological status" by 2015 unless there are grounds for derogation. The WFD will, for the first time, combine water quantity and quality issues together. An integrated approach to the management of all freshwater bodies, groundwaters, estuaries and coastal waters at the river basin level will be adopted. It will effectively supersede all water related legislation which drives the existing licensing and consenting framework in the UK.

J6.84 The Water Framework Directive requires that Environmental Objectives be set for all water bodies; the River Basin Management Plans (RBMPs) set out the objectives for the water bodies within the study area. The aim of these objectives is to achieve 'good status' for all water bodies with prevention of any negative changes to the status of water bodies. In order to meet the objectives, any activity which has the potential to have an impact on any of the Quality Elements must be assessed. The draft policies for each water body within the SMP were therefore considered to ensure there was no future failure in meeting the Environmental Objectives, and any failures that do occur can be defended.

Assessment methodology

J6.85 As a part of the SMP, an assessment of the implications of the Water Framework Directive (WFD) Regulations (2003) is required. The requirements of the WFD need to be considered at all stages of the coastal planning process, by reference to the draft River Basin Management Plans (RBMPs), which, when finalised in December 2009, will be the primary delivery mechanism for the WFD.

J6.86 The methodology used for this assessment has been taken from the Environment Agency document 'Assessing shoreline management plans against the requirements of the Water Framework Directive', which breaks the assessment down into four stages:

- data collection;
- definition of WFD features and issues;
- assessment of preferred SMP policies against WFD environmental objectives; and
- completion of WFD summary statement.

Conclusion

J6.87 Adverse impacts leading to the potential failure of WFD Environmental Objectives of the Yorkshire South/Lincolnshire coastal water body have been identified in Policy Units B (Bridlington), D (Hornsea), E (Rolston to Waxholme), F (Withernsea), H (Dimlington and Easington Gas Terminals), I (Easington to Kilnsea), M (Humberston Fitties), N (south of Humberston Fitties to Theddlethorpe St Helens), O (Viking Gas Terminal (Mablethorpe) to southern end of Skegness) and P (Seacroft to Gibraltar Point). This relates to policies of HTL in Bridlington, Hornsea, Mappleton, Withernsea, Easington, Kilnsea and the Lincolnshire coastline which could lead to coastal squeeze and beach narrowing and steepening with a consequent impact on benthic habitats of the coastal water body. There is also the possibility in the longer

term (epoch 3 and beyond) for partial interruption to longshore sediment transport processes which may impact on the evolution of the coastline downdrift.

J6.88 Adverse impacts leading to the potential failure of WFD Environmental Objectives of the Humber Lower transitional water body have been identified in Policy Units K (Easington Road to Stone Creek), L (Immingham to Cleethorpes) and M (Humberston Fitties). This relates to policies of HTL on the north and south banks of the Humber.

J6.89 It is anticipated that any localised managed realignment of the coastline (within Policy Units K, N, O or P) would change the saltwater/freshwater interface (if realignment occurs), which could impact on one or more of the inland water bodies within these policy units. As the extent and nature of any possible retreat has not yet been decided it is not possible to fully assess the extent of the impact and further assessment should be carried out at a later date when further information is available. It is considered that the potential for decline in status/potential of one or more of the inland water bodies does not outweigh the beneficial effect of managed realignment which will potentially improve the status/potential of the coastal and transitional water bodies.

J6.90 Requirements for monitoring and possible mitigation are addressed within the policies and will be taken forward within the SMP Action Plan.

J6.91 Future assessment should particularly focus on the possible impacts on the Sea Bank Clay Pits and Chapel Point to Wolla Bank SSSIs, although it should be noted that this SSSI is a geological site and adverse impacts on Ecological Potential are therefore likely to be limited.

J7 Mitigation and Enhancement Measures

J7.1 The SEA process requires that environmental effects of the Plan (identified in Section J6) are considered and mitigation is included to reduce or compensate for the Plan's impacts. As part of the process, opportunities for environmental enhancement should be identified wherever possible.

J7.2 The conceptual mitigation hierarchy comprises:

- Amendment of the Plan to avoid the negative impact or assure the positive effect in the first instance;
- If it is not possible to avoid the negative impact, are there opportunities to mitigate the negative impact or enhance the positive effect?
- If no mitigation opportunities are available, is compensation appropriate (in the case of negative impacts)?

J7.3 When developing mitigation opportunities, it should be considered whether the mitigation is likely to be effective and any constraints which may make the mitigation unrealistic. It should also be considered whether development of mitigation measures is appropriate at this scale of Plan or whether it would be preferable to allow mitigation measures to be developed at the Coastal Strategy stage or scheme level.

Table 7.1: Mitigation summary

Significant impact	Avoidance	Mitigation	Compensation/ Offset
Loss of properties at risk from coastal erosion in undefended cliff sections of Holderness including impacts on communities		Allow sufficient time for community adaptation	
Loss of historic environment assets at risk from coastal erosion in undefended cliff sections of Holderness and along Spurn		Allow sufficient time for archaeological research and documenting of sites	
Detrimental effect on landscape character of Bridlington, Hornsea, Mappleton, Withernsea, Grimsby, Cleethorpes, Mablethorpe and Skegness		Landscape effects are unavoidable as the character will either be changed by the presence of larger defences, the realignment of defences or the loss of frontages due to coastal erosion or flooding. Minimising the effects on the landscape character of an area will need to be considered at the strategy and scheme stage.	
Negative impact on tourism	Negative effects on	Minimise effects on the	Creation or

Significant impact	Avoidance	Mitigation	Compensation/ Offset
industry due to e.g. loss of beach frontage or landscape effects	tourism are unavoidable due to landscape changes from increased defences and loss of beach frontage in front of the defences.	landscape character of an area by using the existing footprint and nature of defences where possible and minimising visual intrusion where not.	promotion of alternative tourism features
Loss of agricultural land and agri-environment schemes at risk from coastal erosion in undefended cliff sections of Holderness		Allow sufficient time for community adaptation	
Adverse effect on coastal processes, particularly interruption to longshore sediment transport	Policy Units A, C, majority of E, G and some of I have a policy of no active intervention, ensuring continued sediment supply.	Policy Units K, N, O and P include consideration of localised managed realignment	
Loss of a section of the B1242 north of Mappleton due to coastal erosion		Policy Unit E highlights the need to consider in the medium-term, options for maintaining the north-south transport link.	
Interruption to function of Hollym sewage works due to coastal erosion		Allow sufficient time for adaptation	
Loss of agricultural land as a result of potential managed realignment schemes in Policy Units K, N, O and P			Suitable compensation for landowners
Adverse impacts on habitats within the Humber Estuary resulting from maintaining the defence line in Policy Units K and L			Compensatory habitat provision has been identified through the Humber Flood Risk Management Strategy.

J7.4 Compensation will not be appropriate for all impacts, for example where the loss of historic assets results from an SMP policy, there would be no suitable receptor for compensation.

J7.5 Similarly, some impacts are unavoidable. While it may be possible to minimise the effects on landscape and tourism, these cannot be avoided entirely. To defend the frontage at Bridlington, Hornsea, Mappleton, Withernsea, Grimsby, Cleethorpes, Mablethorpe and Skegness will involve the reinforcement, strengthening or construction of existing or new

defences, which could have a negative visual impact, but to leave the frontages of these settlements undefended would cause damage due to erosion. It will be possible to reduce the visual impact through sympathetic design and construction, but negative effects cannot be completely avoided.

J7.6 In addition to the nationally and internationally designated conservation sites there are many areas of local importance for wildlife that need to be taken into should compensatory habitat creation be considered. Semi-natural habitat is limited in the study area and all opportunities for habitat re-creation should be taken, where possible and practical. This could be done via the negotiation of voluntary agreements with individual owners of coastal land.

J7.7 In order to assess the need and effectiveness of the above suggested mitigations, monitoring has also been suggested in Chapter J8.

J8 Monitoring

J8.1 The SEA Directive requires that monitoring of the significant environmental effects of the Plan is undertaken in order to identify any unforeseen adverse effects at an early stage to take appropriate remedial action.

J8.2 The 'Environmental Report' required under the SEA Directive should include:

> *"a description of the measures envisaged concerning monitoring in accordance with Article 10" (Annex 1(i))*
>
> *and*
>
> *"Member States shall monitor the significant environmental effects of the implementation of plans and programmes…" (Article 10(1))*

J8.3 Wherever possible, use should be made of existing environmental monitoring data. For this frontage, monitoring schemes currently underway include the long-running programme monitoring cliff erosion on the Holderness frontage undertaken by the East Riding of Yorkshire Council and the monitoring of beach profiles for the Lincshore beach renourishment scheme undertaken by the Environment Agency.

J8.4 Consideration should be given to the fact that there is often a time lag between the Plan's implementation and its environmental effects occurring.

J8.5 The monitoring requirements for the SMP are summarised in Table 8.1.

Table 8.1 Issues recommended for monitoring

SEA Receptor	SMP topicr	Issue	Monitoring
Population / human health	Flood and erosion risk / communities	Loss of property	• Monitoring of projected and actual property loss to coastal erosion. • Monitoring erosion rates along the Holderness frontage • Monitoring of beach profiles and levels along the entire frontage.
Biodiversity / flora / fauna	Natural environment	Adverse impacts on designated sites	• Monitoring of status of sites. • Monitoring size of Humber intertidal areas to increase future understanding of behaviour and linkages with erosion rates
Material assets	Agriculture and industry	Loss of agricultural land	• Monitor quantity and grade of agricultural land lost to erosion
	Tourism	Adverse impacts on tourism	• Monitoring of visitor numbers
	Infrastructure	Adverse impacts on infrastructure	• Monitor erosion rates in the vicinity of B1242 north of Mappleton and Hollym sewage treatment works
Cultural heritage	Historic environment	Loss of historic environment assets	• Monitoring of historic environment losses
Landscape	Landscape	Increasing size of	• Monitoring of changes in standard of

SEA Receptor	SMP topicr	Issue	Monitoring
		coastal defences impacting on landscape appeal	protection provided by defences as sea levels rise
Climatic factors / water	Coastal processes	Sea level rise	• Monitoring sea level rise • Monitoring bay development within Holderness with particular consideration of defended areas becoming increasingly protruding relative to the undefended areas.

J8.6 The monitoring measures as described above are included within the SMP Action Plan.

J9 Glossary

Term	Definition
Accretion	The addition of newly deposited sediment leading to a relative rise in elevation of a beach or surface.
Adaptation	The need for a community or habitat to modify the way it functions in response to a changing environment.
Agricultural land classification	An assessment that provides an indication of the quality of agricultural land as a grade from 1 (best quality) to 5 (poorest quality). The classification system is the responsibility of Defra.
Appropriate Assessment (AA)	An Appropriate Assessment is required to comply with the requirements of the EU Habitats Directive for land use plans that are likely to have a significant effect on a Natura 2000 site.
Baseline scenarios	Concept used in developing a SMP to illustrate the role of shoreline management by assessing the effect of two contrasting management approaches – 'no active intervention' and 'with present management' – for all frontages and all epochs.
Bathymetry	Describes the sea bed levels and the changes in depth.
Beach nourishment	Artificial process of replenishing the beach with material from another source.
Beach recycling	Artificial process of replenishing a beach by taking surplus sand from one part of the coastline to recharge depleted areas.
Benefits (related to issue)	The service that a feature provides. In other words, why people value or use a feature. For example, a nature reserve, as well as helping to preserve biodiversity and meet national legislation, may also provide a recreation outlet much like a sports centre provides a recreation function.
Benefit-cost ratio	This is the ratio between the value of the benefits that a section of defence protects and the cost of maintaining that defence over the period of the SMP. This is used to assess the economic viability of a proposed policy.
Biodiversity Action Plan	This sets out a programme for conserving the UK's biodiversity through targets for a range of specific habitats with the aim of reducing loss of biodiversity.
Breaker zone	Area in the sea where incoming waves begin to break.
Climate change	Long-term change in the patterns of average weather. Its relevance to shoreline management concerns its effect on sea levels, current patterns and storminess.
Coastal squeeze	The reduction in habitat area that can arise if the natural landward migration of a habitat due to sea level rise is prevented by the fixing of the high water mark, for example by sea wall.
Condition grade	Indicator based on visual inspection of defence condition ranging from condition grade 1 (very good) to grade 5 (very poor). Undertaken by the operating authority.
Conservation Areas	Places of special architectural or historic interest deserving special

Term	Definition
	protection which are designated as conservation areas
Department for Environment, Food and Rural Affairs (Defra)	Government department which is responsible for the environment, for food and farming, and for rural matters.
Downdrift	Relates to the movement of beach materials along the shoreline. Places that are downdrift receive an input of sediment from erosion of 'updrift' areas.
Ebb tide	The falling tide, the part of the tidal cycle between high water and the next low water.
Economic viability	Within this document, economic viability refers to the situation where the benefits of defending protected areas outweigh the costs. Implementing SMP policies will require funding, which may be national, local and/or third party.
Ecosystem	Organisation of the biological community and the physical environment in a specific geographical area.
Environmental impact assessment	Detailed studies that predict the effects of a development project on the environment They also provide plans for mitigating any significant environmental effects.
Epoch	A period of time. For SMPs, three epochs are defined: Epoch 1: present day to 2025 Epoch 2: 2025 to 2055 Epoch 3: 2055 to 2105
Erosion	The process of removing sediment from the cliff or beach.
EU Bathing Water Directive	The aim of this directive is to protect public health and the environment from faecal pollution at bathing waters. It sets a number of microbiological and physico-chemical standards that bathing waters must either comply with ('mandatory' standards) or endeavour to meet ('guideline' standards).
EU Birds Directive	European legislation on the conservation of birds.
EU Habitats Directive	European legislation on the conservation of habitats.
European Annex 1 priority habitats	Annex 1 of the European Habitats Directive defines certain habitats as being a priority because they are considered to be particularly vulnerable. Examples within this SMP area include coastal lagoons and 'grey dunes'.
Feature	Something tangible that provides a service to society in one form or another or, more simply, benefits certain aspects of society by its very existence. Usually this will be in a specific place and relevant to the SMP.
Flood tide	Rising tide, part of the tidal cycle between low water and the next high water.
Foreshore	Zone on the beach between the high water and low water marks.
Gabion	A cage filled with rock used to stabilise the shoreline against erosion.
Geomorphology	The branch of physical geography/geology that deals with the form of the Earth, the general configuration of its surface, the distribution of the land, water etc.

Term	Definition
Groyne	Coast protection structure built perpendicular to the shoreline and designed to trap sediment (shingle, sand and mud).
Heritage Coast	A non-statutory designation by Natural England for coasts of scenic quality, their largely undeveloped nature and their special wildlife and historic interest. Local authorities assist with the management of Heritage Coasts.
Hinterland	Generally, used to refer to the area landward of the shoreline that is influenced in some way by the coast / sea.
Indicators	Used to support the appraisal of policies against criteria.
Intent of management	A vision for the future of shoreline management along a certain frontage for all epochs. This vision is then translated to specific policies for the purpose of management.
Intertidal	The area between high and low tide.
Imperative Reasons of Overriding Public Interest (IROPI)	Reasons where the interests of a Natura 2000 site are overridden by other concerns – listed in the Habitat Regulations.
Listed building	A building or other structure officially designated as being of special architectural, historical or cultural significance.
Local Development Framework (LDF)	A collection of local development documents that outline how a local authority will manage planning in their area.
Local nature reserves	A statutory designation for sites established by local authorities in consultation with Natural England. These sites are generally of local significance and also provide important opportunities for public enjoyment and recreation.
Longshore transport/ drift	The natural transport of beach material along the coast.
Maintain	That the value of a feature is not allowed to deteriorate
Mean sea level	Average height of the sea surface over a 19-year period.
Mean high water	The average level of all high waters observed over a sufficiently long period.
Mean low water	The average level of all low waters observed over a sufficiently long period.
Mitigation	Practical measures taken to offset the impact of a policy.
Mudflat	Low-lying muddy land that is covered at high tide and exposed at low tide.
National Flood and Coastal Defence Database (NFCDD)	National database for managing flood risk management asset data.
National property dataset	GIS dataset that provides information on the location and type of properties in England and Wales. This includes the value of properties based on 2005 values.
National nature reserves	These represent some of the most important natural and semi-natural ecosystems in Great Britain and are managed to protect the conservation value of the habitats that occur on these sites. These are a statutory designation by Natural England.
Natura 2000	A term used commonly to refer to Special Protection Areas and

Term	Definition
	Special Areas of Conservation.
Objective	A desired state to be achieved in the future. An objective is set, through consultation with key parties, to encourage the resolution of an issue or a range of issues.
Offshore zone	Extends from the low water mark seawards.
Ordnance datum	Elevation used on ordnance survey maps for deriving height. In the UK, this is mean sea level in Newlyn, Cornwall, measured between 1915 and 1921.
Outflanking	The process whereby erosion occurs immediately adjacent to a defended section of coast, eventually resulting in the land behind the defence being eroded from the side.
Policy	In this context, "policy" refers to the generic shoreline management options (no active intervention, hold the existing line of defence, managed realignment and advance the existing line of defence)
Policy Development Zone (PDZ)	A length of coastline defined to assess similar issues and interactions to examine and develop management scenarios. These zones are only used to develop policy.
Present value (PV)	The value of a stream of benefits or costs when discounted back to the present day. For this SMP, the discount factors used are the latest provided by Defra for assessing schemes, that is 3.5% for years 0-30, 3.0% for years 31-75 and 2.5% thereafter.
Principle	High-level statement outlining a goal or vision agreed by partner authorities and used to develop the SMP.
Prograding	When the shoreline is developing and building seaward through accretion.
Ramsar site	Area designated under the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971
Rapid Coastal Zone Assessment (RCZA)	Survey of the historic environment assets within the coastal strip being undertaken by English Heritage.
Regional Spatial Strategy (RSS)	A collection of regional development documents that outline how a regional assembly will manage planning in their area.
Registered parks and gardens	Parks and gardens registered for their historic value so they are considered in the planning process. Local planning authorities must consult English Heritage where planning applications may affect these sites.
Residential density	The number of people living in a residential area compared with the total area of residential land.
Residual life	Period of time until a defence has deteriorated to a state in which it no longer performs its function
Rollback	The process by which assets physically move further inland away from the threat of coastal erosion.
Revetment	A structure at the rear of the beach to provide protection to the cliff, dune or hard structure at the rear of the beach.
Scheduled Monument	A statutory designation under the Ancient Monuments and

Term	Definition
	Archaeological Areas Act, 1979.
Sea level rise	Increase in sea levels in relation to land levels.
Sediment budget	Volumes of sediment which enter (and exit) a particular section of the coast (or an estuary).
Sediment cell	A sediment cell is a length of coastline and its nearshore area within which the movement of sand and shingle is largely self-contained.
Sediment transport	The movement of shingle, sand and mud within the coastal zone through the actions of waves, currents, tides and wind.
Shoreline Management Plan	A non-statutory plan that provides a large-scale assessment of the risks associated with coastal processes and presents a policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner.
Site of Special Scientific Interest (SSSI)	An area designated under the Wildlife and Countryside Act, 1981 as representing some of the best examples of Britain's natural features including flora, fauna and geology.
Special Area of Conservation (SAC)	Area designated under the EU Habitats Directive (92/43/EEC) in order to protect habitats or species of European importance.
Special Protection Area (SPA)	Area designated under the EU Birds Directive (79/409/EEC) in order to establish a network of protected areas for birds.
Stakeholder	An organisation or individual affected by or interested in the Flamborough Head to Gibraltar Point Shoreline Management Plan.
Storm surge	A temporary rise in the sea level on an open coast resulting from a storm.
Strategic Environmental Assessment (SEA)	An environmental assessment required by the EU SEA Directive (2001/42/EC) for a range of land use plans and programmes. SEA is not a statutory requirement for Shoreline Management Plans.
Sub-littoral	The area of the seas between the intertidal zone and the edge of the continental shelf.
Sustainable	Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. In terms of sustainability of coastal defences, this refers to the technical, economic and environmental viability of maintaining a defence line.
Swell	Waves which have travelled into the area after having been generated by previous winds in other areas. These waves may travel thousands of kilometres from their origin before dying away
Tidal prism	The volume of water within an estuary between the level of high and low tide, typically taken for mean spring tides.
Tidal flood risk	The risk of flooding associated with the normal and extreme tidal cycles. Flood risk is measured as the probability of flooding (that is, at location X, there is a 1 in 100 or one per cent chance of flooding in any given year) multiplied by the impact or consequences that will result if flooding occurs.
Tide	Periodic rising and falling of the sea resulting from the gravitational attraction of the moon and sun acting on the rotating earth.

Term	Definition
Topography	Describes the level or surface of the land and the features of a landscape.
Transgression	The landward movement of the shoreline in response to a rise in sea level.
Water Framework Directive (WFD)	EU water legislation designed to improve and integrate the way water bodies are managed throughout Europe.
Water table	The upper surface of groundwater. Below this level, the soil is saturated with water.

J10 List of Abbreviations and Acronyms

Organisations directly involved in SMP	
EA	Environment Agency
EH	English Heritage
ELDC	East Lindsey District Council
ERYC	East Riding of Yorkshire Council
LCC	Lincolnshire County Council
NE	Natural England
NELC	North East Lincolnshire Council
NFU	National Farmers' Union
RFDC	Regional Flood Defence Committee
External/other organisations	
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CLG	Communities & Local Government
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
HECAG	Humber Estuary Coastal Authorities Group
IDB	Internal Drainage Board
NECAG	North East Coastal Authorities Group
OS	Ordnance Survey
QRG	Quality Review Group
SMP Groups (Consultation)	
CSG	Client Steering Group
EMF	Elected Members Forum
KSG	Key Stakeholder Group
Plans/Strategies/Studies & Assessments	
AA	Appropriate Assessment
CFMP	Catchment Flood Management Plan
CHaMP	Coastal Habitat Management Plan
HRA	Habitat Regulations Assessment
HFRMS	Humber Flood Risk Management Strategy
ICZM	Integrated Coastal Zone Management
LDF	Local Development Framework
MSfW	Making Space for Water
PPG	Planning Policy Guidance
PPS25	Planning Policy Statement 25
RBMP	River Basin Management Plan
RCZA	Rapid Coastal Zone Assessment
RSS	Regional Spatial Strategy
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment

SMP	Shoreline Management Plan
SNSSTS	Southern North Sea Sediment Transport Study
UKCP	United Kingdom Climate Programme (formally UKCIP, United Kingdom Climate Impact Programme)
WFD	Water Framework Directive
Special interest sites	
LNR	Local Nature Reserve
NNR	National Nature Reserve
SAC	Special Area of Conservation
SM	Scheduled monument
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
Technical terms	
AOD	Above Ordnance Datum
ATL	Advance the line
BAP	Biodiversity Action Plan
GIS	Geographical Information System
HTL	Hold the line
IROPI	Imperative reasons of overriding public interest
LiDAR	Light detection and ranging
MR	Managed realignment
NAI	No active intervention
NFCDD	National flood and coastal defence database
NPD	National property dataset
ODN	Ordnance datum Newlyn
PDZ	Policy development zone
PU	Policy unit
PV	Present value
SOP	Standard of protection
WPM	With present management

Annex A: Pertinent Legislation and Policy Review

Plan	Key Message	Relevant SEA Directive Topic
International		
The Habitats Directive (92/43/EEC)[1]	Requires the protection of species and habitats of EU nature conservation designation.	Biodiversity
Birds Directive (79/409/EEC)[2]	Provides for the protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species.	Biodiversity
The Convention on Wetlands of International Importance 1971 (Ramsar Convention)	Provides for the protection of waterfowl habitat.	Biodiversity
The Water Framework Directive (2000/60/EC)[3]	Promotes an integrated and coordinated approach to water management at the river basin scale. Also encourages protection of soil and biodiversity.	Water, Soil, Biodiversity
National		
The Habitats Regulations (1994 and updated 1997 and 2000)	Transposed the EC Habitats and Birds Directives into UK law.	Biodiversity
Natural Environment and Rural Communities Act (2006)	Places a duty on all public bodies to have regard for and enhance conservation of biodiversity in carrying out all of their functions.	Biodiversity
Planning and Compulsory Purchase Act (2004)	Requires councils to keep and up to date evidence base to inform planning with regards to the character and environment of the planning area and spatial planning coverage	Cultural Heritage, Landscape, Material assets
The Wildlife & Countryside Act (1981) Amended on several occasions, most notably by the Countryside and Rights of Way (CRoW) Act (2000)[4]	Principal instrument for the protection of Sites of Special Scientific Interest and endangered wildlife within the UK.	Biodiversity

[1] Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna accessible via: http://ec.europa.eu/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm
[2] Council Directive 79/409/EEC on the conservation of wild birds
[3] Directive 2000/60/EC of the European Parliament and the Council establishing a framework for the Community action in the field of water policy accessible via: http://ec.europa.eu/environment/water/water-framework/index_en.html
[4] Wildlife and Countryside Act (1981) accessible via: http://www.jncc.gov.uk/page-1377

Plan	Key Message	Relevant SEA Directive Topic
UK Biodiversity Action Plan (1994)[5]	UK Response to the Convention on Biological Diversity. Sets out national and local biodiversity action plans.	Biodiversity
Biodiversity Strategy for England (2002)[6]	Ensure biodiversity considerations become embedded in all the main sectors of economic activity, public and private.	Biodiversity
Rural White Paper (2000)[7]	Deals with the importance of understanding, evaluating and protecting countryside character and diversity.	Landscape
Heritage White Paper[8]	To put the historic environment at the heart of the planning system.	Cultural Heritage, Landscape
The Historic Environment: A Force for Our Future (2001)[9]	The full potential of the historic environment should be realised and it should be accessible to all.	Cultural heritage, Material Assets
Water Act 2003[10]	Encourage more efficient use of water resources.	Water
Draft Soil Strategy for England (2001)[11]	Improve the quality of England's soils.	Soil
Climate Change Act (2008)[12]	Two key aims: to improve carbon management and help the transition towards a low carbon economy in the UK; and to demonstrate strong UK leadership globally.	Climatic Factors
The UK Climate Change Programme (2006)[13]	A suite of new and established measures are predicted to reduce UK carbon emissions to 15 – 18% below 1990 levels by 2010. Also promotes anticipatory adaptation	Climatic Factors, Landscape, Biodiversity, Population
Making Space for Water (2005)[14]	Advocates a holistic approach to flooding, addressing all types of flooding together	Climatic Factors, Landscape,

5 UK Biodiversity Action Plan accessible via: http://www.ukbap.org.uk/
6 Working with the Grain of Nature: A Biodiversity Strategy for England (2002) accessible via: http://www.defra.gov.uk/wildlife-countryside/biodiversity/biostrat/index.htm
7 Rural White Paper (2000) Our Countryside: The Future – A Fair Deal for Rural England accessible via: http://www.defra.gov.uk/rural/ruralwp/whitepaper/default.htm
8 The Government White Paper: Heritage Protection for the 21st Century (2007) accessible via: http://www.culture.gov.uk/Reference_library/Consultations/2007_current_consultations/hpr_whitepaper07.htm
9 The Historic Environment: A Force for our Future (2001) accessible via: http://www.culture.gov.uk/Reference_library/Publications/archive_2001/his_force_future.htm
10 Water Act 2003 accessible via: http://www.opsi.gov.uk/ACTS/acts2003/20030037.htm
11 Draft Soil Strategy for England (2001) accessible via: http://www.defra.gov.uk/environment/land/soil/sap/index.htm
12 Climate Change Act (2008) accessible via: http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080027_en.pdf
13 2006 UK Climate Change Programme accessible via: http://www.defra.gov.uk/environment/climatechange/uk/index.htm

Plan	Key Message	Relevant SEA Directive Topic
		Biodiversity
The Energy White Paper (2003)[15]	10% of electricity to be generated from renewable sources by 2010, with a target of 20% by 2020	Climatic Factors
Soil Action Plan for England (2004)[16]	52 actions to ensure better soil protection and management	Soil, Landscape
Waste Strategy for England (2007)[17]	Promotes best practicable environmental option (BPEO), the waste hierarchy and the proximity principle. Sets a major target of increasing recycling rates to 25% by 2005/06	Soil, Population
Landfill Regulations (2002) and Amendment (2005)[18]	Sets a series of substantial targets for the reduction of biodegradable municipal waste going to landfill	Soil, Population
Sustainable Communities Plan (2003)[19]	Key aims include reducing housing shortage, improving liveability and using land more effectively	Population
Planning Policy Statement (PPS) 1: Delivering Sustainable Development (2005)[20]	Sets out how planning should contribute to sustainable patterns of urban and rural development	All Topics
Draft PPS: Planning and Climate Change, Supplement to PPS1.	Sets out how planning should minimise impacts on climate change through increased resource and energy efficiency, sustainable transportation and maximises resilience to the effects of climate change. This document is currently in draft form.	Biodiversity, Landscape, Climatic Factors, Population
PPS9: Biodiversity and Geological Conservation (2005)	States the importance of biodiversity conservation and enhancement to the promotion of sustainable development	Biodiversity
PPS7 Sustainable Development in Rural Areas (2004)	Promotes support of a wide range of economic ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment	Landscape; Population;

[14] Making Space for Water: Taking forward a new Government strategy for flood & coastal erosion risk management accessible via: http://www.defra.gov.uk/environ/fcd/policy/strategy.htm
[15] Energy White Paper: Meeting the energy challenge accessible via: http://www.dti.gov.uk/energy/whitepaper/page39534.html
[16] First Soil Action Plan for England 2004-2006 accessible via: http://www.defra.gov.uk/environment/land/soil/sap/index.htm
[17] Waste Strategy for England (2007) accessible via: http://www.defra.gov.uk/environment/waste/strategy/index.htm
[18] Council Directive 99/31/EC on the landfill of waste and The Landfill (England and Wales) Regulations 2002 and Amendment Regulations 2005 accessible via: http://www.opsi.gov.uk/SI/si2002/20021559.htm
[19] Sustainable Communities: Building For the Future (2003) accessible via: http://www.communities.gov.uk/index.asp?id=1163452
[20] The following Planning Policy Statements and Planning Policy Guidance Notes are accessible via: http://www.communities.gov.uk/index.asp?id=1143802

Plan	Key Message	Relevant SEA Directive Topic
	The full potential of the historic environment should be realised and it should be accessible to all. Promotes support of a wide range of economic activity in rural areas. Promotes the use of Landscape Character Assessment.	
PPS10: Waste management (2005)	Promotes driving waste management up the waste hierarchy	Population, Climatic Factors
PPG13: Transport (2001)	Aims to promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and to reduce the need to travel, especially by car.	Population, Climatic Factors
PPG15: Planning and the Historical Environment (1994)	Protect and enhance historic buildings, areas and landscapes, and their settings	Landscape, Cultural Heritage and Material Assets
PPG16: Archaeology and planning (1990)	Archaeology is an irreplaceable resource and the presumption should be that important remains will be preserved in situ. Archaeology is a material consideration in the planning process.	Cultural Heritage and Material Assets
PPG 17: Planning for Open Space, Sport and Recreation[21]	Open space, sport and recreation are fundamental to people's quality of life. Planning needs to provide open space and leisure and recreation facilities.	Landscape, Biodiversity, Population, Soil
PPS23: Planning and Pollution Control (2004)	The precautionary principle should be invoked with regard the harmful effects of pollution	Air; Water; Soil
PPS25: Development and Flood Risk (2006)	Direct development away from areas at highest risk from flooding	Population, Landscape, Water
PPG20: Coastal Planning (1992)	It is the role of the planning system to reconcile development requirements with the need to protect, conserve and, where appropriate, improve the landscape, environmental quality, wildlife habitats and recreational opportunities of the coast. As a general rule the limit of the coastal zone in the seaward direction is mean low water mark. Above mean low water mark, local planning authorities have powers to control the development and use of land under the Town and Country Planning Act 1990. The key policy issues for coastal planning are:	Landscape, Population, Material Assets, Heritage

[21] PPG 17 accessible via: http://www.communities.gov.uk/index.asp?id=1144067#P25_1360

Plan	Key Message	Relevant SEA Directive Topic
	• Conservation of the natural environment • Development, particularly that which requires a coastal location • Risks, including flooding, erosion and land instability • Improving the environment, particularly of urbanised or despoiled coastlines.	
Scheduled Monuments – Ancient Monuments and Archaeological Areas Act 1979	Scheduled monuments are designated and added to a 'Schedule' by the Secretary of State under powers contained in the Ancient Monuments and Archaeological Areas Act, 1979	Cultural Heritage
Listed Buildings – Planning (Listed Buildings and Conservation Areas) Act 1990	An Act to consolidate certain enactments relating to special controls in respect of buildings and areas of special architectural or historic interest with amendments to give effect to recommendations of the Law Commission	Cultural Heritage
Registered Parks and Gardens – Historic Buildings and Ancient Monuments Act 1953	Parks, gardens and battlefield sites which appear to English Heritage to be of special historic interest may be entered onto Registers under powers conferred under the Historic Buildings and Ancient Monuments Act, 1953 (as amended).	Cultural Heritage
National Heritage Act 1983	An Act to establish Boards of Trustees of the Victoria and Albert Museum, the Science Museum, the Armouries and the Royal Botanic Gardens, Kew, to transfer property to them and confer functions on them, to make provision in relation to government grants to, and employment by, armed forces museums, to establish a Historic Buildings and Monuments Commission for England, to confer functions on the Commission, to dissolve the Historic Buildings Council for England and the Ancient Monuments Board for England, to amend certain enactments relating to the heritage and for connected purposes.	Cultural Heritage
Regional[22] - East Midlands		
The East Midlands Plan (RSS8) (draft)	Sets out the vision for the region, in particular the Eastern Sub-area policies seek to ensure that development will protect and enhance the natural and historic environment of the coastal margin including the Wash and Humber Estuary Special Protection Areas, and the Saltfleetby-Theddlethorpe Dunes Special Area of Conservation; Any development along the Lincolnshire coast should require a coastal location, be located primarily in existing urban areas and in ways that protect and enhance natural	All Topics

[22] http://www.emra.gov.uk/

	and cultural heritage.	
The East Midlands Regional Housing Strategy 2004-2010[23]	The objective of the strategy is "to ensure that the existing and future housing stock is appropriate to meet the housing needs of all parts of the community."	Population
East Midlands Regional Environment Strategy	The Regional Environment Strategy provides a framework for environmental policy development in the East Midlands by highlighting the issues that need to be addressed and putting forward environmental objectives and policies.	Climatic Factors,
The East Midlands Regional Energy Strategy 2004	The East Midlands will take a lead in moving towards a low carbon future that benefits the economy, protects the environment and supports the communities.	Climatic Factors
The East Midlands Regional Energy Strategy A framework for Action 2007	An overall aim of the Framework is to achieve a low carbon future that will deliver • Economic opportunities through exploitation of new markets and technologies as well as the efficient use of resources • Low carbon design and construction through the planning and regeneration process that delivers affordable warmth and cooling. • A reduction in greenhouse gas emissions to ensure that changes we experience in our climate are within limits that we can adapt to.	Climatic Factors
Putting wildlife back on the map – A biodiversity strategy for the east Midlands 2004	The vision is for a region – its landscapes and water bodies, coasts and seas, towns and cities – where wild spaces and habitats are part of healthy functioning ecosystems; where we nurture, treasure and enhance biodiversity, and where biodiversity is a natural consideration of policies and decisions in society as a whole. The specific vision for the coast and sea is to ensure that the coast, much of which is protected by national and international wildlife site designations will be secure from unsustainable exploitation and inappropriate development. The continued protection, management and enhancement of coastal wildlife sites is of paramount importance to the future of biodiversity in this area and in the region as a whole.	Biodiversity
Regional – Yorkshire and Humber		

[23] http://www.emra.gov.uk/what-we-do/housing-planning-transport/rss-review/documents

Yorkshire and Humber Plan (RSS) 2008	Achieve a more sustainable pattern and form of development, investment and activity in the Yorkshire and Humber Region – putting a greater emphasis on matching needs across the Region with opportunities and managing the environment as a key. In particular, protect the unique character, heritage and biodiversity of the undeveloped coast and coastal waters; conserve the geomorphological importance and natural beauty of the North York Moors National Park coast, the Flamborough Head coast, and Spurn Head and investigate extending Heritage Coast designation between Scarborough and Flamborough Head; Protect the historic seaside character of coastal settlements and upgrade their town centres and the seaside settings; avoid the risk from flooding, erosion and landslip along the coast, including through roll-back approaches to relocate existing uses; improve marine water quality and maintain and extend 'blue flag' standards; investigate scope for more renewable energy initiatives.	All topics
Yorkshire and Humber Regional Biodiversity Strategy	Describes the region's biodiversity and the key actions that are needed to conserve and enhance this resource. It also recognises the value of biodiversity to the region's social and economic sectors and identifies those actions which are required jointly to enhance our region's natural environment. The Strategy is a key document which compliments and implements the biodiversity elements of the Regional Spatial Strategy and its production is a key milestone for the region.	Biodiversity
Yorkshire and Humber Regional Sustainable Development Framework 2003 - 2005[24]	To ensure that sustainable development is an integral part of policy and decision-making at the regional, sub-regional and local levels throughout Yorkshire and Humber.	All topics
Yorkshire and Humber Regional Economic Strategy 2006-2015[25]	The region seeks high quality, sustainable growth that will maximise long term benefits to businesses, people and to the environment.	Population
Regional Energy and Infrastructure Study[26]	The vision is that Yorkshire and Humber will continue to be a primary energy provider for the UK while achieving low carbon energy targets.	Climatic Factors
Sub-regional		
Witham Catchment Abstraction Management Plan (CAM)[27]	The vision for the Witham Catchment Abstraction Management Strategy (CAMS) is to ensure that the water resources of the Witham catchment are managed sustainably for the future, with due regard for environmental and abstractor needs.	Water, Landscape, Biodiversity

24 http://www.yhassembly.gov.uk/The%20Library/Regional%20Strategies/
25 http://www.yorkshire-forward.com/www/view.asp?content_id=106&parent_id=17
26 http://www.yhassembly.gov.uk/The%20Library/Other%20Research/Energy%20and%20Microgeneration/

Steeping, Great Eau and Long Eau CAMS[28]	This CAM is being used to manage water resources at a local level.	Water, Landscape, Biodiversity
The Grimsby, Ancholme and Louth CAM (April 2006)[29]	This CAM is being used to manage water resources at a local level to ensure that there is water available for abstraction while protecting the needs of the environment.	Water, Landscape, Biodiversity
Lincolnshire Biodiversity Action Plan 2nd Edition – Coastal and Marine Chapter[30]	The Coastal and Marine Vision is: • Existing habitats are protected from the pressure of harmful development. • Coastal habitats have been enhanced and extended, creating a sustainable network for wildlife. • Sustainable development on all parts of the coastline has created a coastal environment that benefits people and wildlife. • The importance of coastal and marine biodiversity for tourism and the local economy has been recognised. • The North Sea is managed sustainably with respect to global marine factors and in a manner complementary to the environment, economy and society of Lincolnshire.	Biodiversity
Coastal Sand Dunes Habitat Action Plan[31]	Targets identified: • Maintain the current area of sand dunes in Lincolnshire and (through appropriate management and protection) ensure their nature conservation interest is not lost. • Seek opportunities to restore areas of sand dune habitat lost to forestry, agriculture or other human uses. • Limit human interference to ensure the natural processes responsible for the formation and evolution of existing dune systems continue.	Biodiversity

27 http://www.environment-agency.gov.uk/commondata/acrobat/final_strategy_p1_785336.pdf
28 http://publications.environment-agency.gov.uk/pdf/GEAN0107BLRY-e-e.pdf
29 http://publications.environment-agency.gov.uk/pdf/GEAN0406BKJU-e-e.pdf
30 http://www.lincsbap.org/publications/index.php
31 http://www.lincsbap.org/habitats/actionplan.php?hap=c1

Saline Lagoons Habitat Action Plan[32]	Targets identified: • Maintain the current area of saline lagoon and saline/brackish ditch habitat. • Enhance the quality of existing lagoons and saline/brackish ditches. • Recreate 2 ha of saline lagoons by 2010, (suggested sites, arable land at Gibraltar Point, Howden's Pullover and North Cotes in North Lincolnshire)	Biodiversity
Saltmarsh Habitat Action Plan[33]	Targets identified from the BAP: • Maintain the area of saltmarsh in Lincolnshire. Ensure there is no further net loss in saltmarsh (although local losses and gains are to be expected in such a dynamic system). • Increase the area of saltmarsh in Lincolnshire by 140 ha by 2010. This will help to offset losses nationally in the recent past and to offset likely losses due to coastal squeeze. • Maintain the quality of the existing resource in terms of community and species diversity and, where necessary, restore the nature conservation interest through appropriate management	Biodiversity
Air Quality and Review for Lincolnshire[34]	Ensure air quality is monitored and where levels exceed national standards, the designation of Air Quality management Areas (AQMA) should be progressed.	Air
Lincolnshire Structure Plan 2006[35]	It is the overall challenge of promoting economic progress through growth and qualitative sectoral improvements, whilst protecting the environment and Lincolnshire's distinctive quality of life, which this Structure Plan seeks to resolve. The overall aim of the Structure plan is: To improve the quality of life for those who live, work, visit and invest in Lincolnshire through the promotion of sustainable development. Specific coastal messages: • Tourism makes a vital contribution to the Lincolnshire economy. Tourism activity generates economic benefits, particularly important on	All Topics

32 http://www.lincsbap.org/habitats/actionplan.php?hap=c2
33 http://www.lincsbap.org/habitats/actionplan.php?hap=c3
34 http://www.e-lindsey.gov.uk/environment/environmental-protection/upload/Air-Quality-Review-and-Assessment-for-Lincolnshire-pdf-document.pdf
35 http://www.lincolnshire.gov.uk/section.asp?sectiontype=weblink&catid=3698&docid=48762

	Lincolnshire's coast, in the rural economy and where it can support regeneration initiatives. • Protect and enhance the coastal conservation and heritage areas. • Ensure protection of coastal and water environments and reduce the impact of new development. • To protect the important environmental resources and habitats of the coast	
Providing for Lincolnshire's Future – A Framework environmental strategy 2005 Sustainability incorporating stewardship	The council's six ambitions which will drive it's objectives and policy over the next few years: • Create economic prosperity • Enrich the quality of life • Provide the opportunity for people to achieve their fulfilment • Improve community engagement • Improve the transport infrastructure • Provide community focused cost effective service	All Topics
Lincolnshire Coast and Marshes Natural Area (1997)	Key objectives from this document are: • To maintain the extent and quality of the characteristic semi-natural habitats in the Natural Area, particularly the grasslands, coastal, freshwater and woodland habitats. • To maintain and enhance important species and populations which are characteristic of the Natural Area. • To increase awareness, and encourage appropriate use, of our natural heritage to ensure that the countryside can be enjoyed by all, including future generations without damaging the Natural Area. • To ensure that the geological and geomorphological features of the Natural Area are maintained for future research and enjoyment.	Biodiversity, Landscape

Local- East Lindsey District Council[36]		
East Lindsey Sustainability Appraisal Scoping Report [37]	Key issues identified of relevance in the Scoping Report: • Increasing pressure to limit development within river floodplains and also along the coast in coastal inundation zones due to flood risk. • The district has a rich and diverse natural heritage including inland and coastal sites and habitats that have nature conservation and/or geological value (of international, national, regional and local importance). This includes statutory and non-statutory designated sites (e.g. The Wash, Gibraltar Point, Saltfleetby to Theddlethorpe dunes and the Humber Flats, Marshes and coastline and Woodlands such as Bardney Limewoods and Kenwick woods; and wetland habitats such as coastal and floodplain grazing marsh). • A key issue is how to deal with changes associated with the potential for coastal tourism to move to the countryside (and associated infrastructure – e.g. new caravan parks) and the pressure for development (e.g. residential and commercial) away from urban areas. • There are three main sources of flooding within the district; from the sea, from rivers and from surface water flooding from drainage infrastructure (although other sources such as artificial water bodies and groundwater should be noted). Adapting to flooding and climate change is, in the Environment Agency's opinion, the most significant challenge being faced by East Lindsey District.	All Topics
East Lindsey A Community Plan for a Sustainable Future[38]	The vision for the future of East Lindsey is: • "a distinct, dynamic and proud district where organisations and communities work together for a better quality of life." The Plan identifies the following priorities: Climate Change & the Environment; Community Safety; Economic Prosperity; Education & Skills; Families; Children & Young People; Health & Wellbeing; Older People; Rural Services & Accessibility; Lincolnshire	Population

[36] http://www.e-lindsey.gov.uk/housing/
[37] http://www.e-lindsey.gov.uk/environment/planning/policy-local-plan/upload/FinalScopingReport.pdf

	Coastal Action Zone (CAZ).	
East Lindsey Local Plan Alteration 1999 – Saved Polices from September 2007[39]	The protection and improvement of the very landscape and features which attract visitors shall be achieved by strict development control measures and a joint programme for coastal management. East Lindsey, has designated Coastal Conservation Areas in the following locations:- • CCA1 - Tetney to Mablethorpe • CCA2 - Sutton on Sea to Chapel St. Leonards • CCA3 - Chapel St. Leonards to Ingoldmells • CCA4 - Skegness to Friskney	All Topics, in particular Biodiversity and Landscape
Lincolnshire Coastal Zone Action Plan[40]	The purpose of the Coastal Action Zone Partnership is to work together to identify ways of bringing together the experience and resources of the multitude of partners to provide a common, coherent and practicable solution to the issues affecting coastal areas and their regeneration. The purpose of the Coastal Action Zone Partnership is to work together to identify ways of bringing together the experience and resources of the multitude of partners to provide a common, coherent and practicable solution to the issues affecting coastal areas and their regeneration. The Action Plan illustrates the recommendations of the partnership.	Landscape, Water
East Lindsey Strategic Flood Risk Assessment[41]	The Rapid Inundation Zone of the East Lindsey coast is very extensive due to the unique low lying nature of the ground along coastline. Key messages from the SFRA: There is potential for extensive coastal flooding from tidal inundation in many areas between North Somercotes and Skegness, fluvial flooding in the Bain Valley and also in the low lying area to the south of the line between Coningsby and Skegness. At particular risk are the larger settlements of Skegness and Mablethorpe from tidal flooding overtopping and breaching of coastal defences.	Water
East Lindsey Core Strategy Issues and Options Consultation 2007[42]	The East Lindsey consultation vision for the LDF is: We would like to see a District with:-	All Topics

38 http://www.e-lindsey.gov.uk/community/community-strategy/upload/LSP%20Community%20Plan%20-%20Final.pdf
39 http://www.e-lindsey.gov.uk/environment/planning/policy-local-plan/upload/East%20Lindsey%20Local%20Plan%201999%20Saved%20Policies-2.pdf
40 http://www.coastalactionzone.co.uk/default.asp?id=33&mnu=33
41

	• A network of thriving, safer and healthy communities, where people can enjoy a high quality of life; • A diverse and regenerated economy that is not just dependent on agriculture and tourism; • An inclusive, equal and diverse society that has tackled the problems of rural isolation and deprivation; • A high quality environment that makes the most of its special qualities, particularly the coast, the Wolds and the market towns; • New development that successfully balances the needs of the economy, communities and the environment.	
East Lindsey District Landscape Character Assessment (Draft) 2008	The key characteristics of the Lincolnshire Coast and Marshes Joint Character Area are described as: flat coastal plain to east, rising gradually in west to more undulating land at foot of the Lincolnshire Wolds; predominantly open, medium-scale agricultural landscape; concentration of larger settlements towards the coast; land drained to coast by combination of irregular ditches, streams and dykes; coastline experiencing both erosion and accretion; major coastal dune systems and salt marshes and artificial sea defences along the coastline; extensive shallow beach; coastal strip significantly altered by discordant 20th century development including seaside resorts, theme parks, bungalows, caravan parks and industry.	
Local – East Riding of Yorkshire Council[43]		
Landscape Character Assessment for East Riding 2005[44]	The East Riding has a varied landscape and quality of the landscape across the district also varies. Several high quality landscapes have been identified based on their condition and strength of character. High quality landscapes in the East Riding are; the Yorkshire Wolds, the Derwent River corridor, Thorn and Hatfield Moors in the Humberhead levels, Sunk Island Farmland in the Humber Estuary and the two heritage Coasts, namely Spurn Point and the Flamborough Coast.	Landscape
East Riding of Yorkshire Council	The protection and enhancement of the Borough's environment has been made a	All Topics

42 http://www.e-lindsey.gov.uk//environment/planning/policy-local-plan/upload/issuesandOptions.pdf
43 http://www.eastriding.gov.uk/
44 http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=0&p_app_ref=&p_spec_ref=

Beverly Borough Local Plan June 1996	principal aim of the plan's strategy.	
East Riding of Yorkshire East Yorkshire Borough Wide Local Plan1997[45]	The following objectives will guide the implementation of planning policy to ensure that the landscape qualities of the coastline are recognised and the integrity of the coastal environment is safeguarded: • To recognize the long term nature and importance of physical progress affecting the coastline and their significance to the coastal cell; • To ensure that essential development is adequately sited to be protected from anticipated rates of coastal erosion • To safeguard the character of the landscape and protect nature conservation interests • To promote public enjoyment and appreciation of the public zone.	All Topics
Holderness District Wide Local Plan 1999[46]	The Council will only approve development proposals in the Holderness coastal zone which are not likely during the life expectancy of the development to: • Lead to a requirement to construct new or to extend or enhance existing coastal protection or flood defences • Interfere significantly with natural coastal or estuarine processes • Increase the risk of flooding and coastal erosion on site or elsewhere • Be affected by the risk of coastal erosion within the developments estimated lifespan • Conflict with nature conservation policies of this plan. • Preclude reasonably practical options to conserve or enhance important coastal habitats by managed retreat or soft engineering techniques.	All Topics
East Riding of Yorkshire LDF Scoping Report	Key issues identified in the report:	All topics

[45] http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=2172&p_app_ref=&p_spec_ref=
[46] http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=2172&p_app_ref=&p_spec_ref=

	• Economic dependence on the tourist industry in East Riding, particularly the coastal area, is increasing. Physical factors, such as remoteness of the area, coastal erosion and frequent storms, put limits on the development of the industry. Investments in tourist infrastructure rather than in services for local residents and the seasonal type of jobs associated with the tourism industry reduce the overall sustainability of the region. • The Yorkshire and Humber region has the second largest area at risk from flooding in the country as a result of the low-lying and flat landscape as well as changing climate. Effective management of existing and future developments in the flood plain area is critical.	
'Our East Riding' Community Strategy 2006 -2016[47]	The vision for the borough is: Our aim is to sustain and create thriving, vibrant and sustainable communities within the unique East Riding environment in which everyone can enjoy a high quality of life.	Population
East Riding Coastal Zone Management Plan: Towards a Sustainable coast 2002	The plan lays out a framework for action to address the issues those that live on, work at or visit the East Riding coastal zone.	Water, Landscape
The 'Roll Back' of residential and agricultural dwellings at risk of coastal erosion in the East Riding of Yorkshire (Dec 2005)	Key policy to be considered: Proposals for the replacement of residential dwellings considered to be at risk from coastal erosion within the next 50 years will be permitted where: i. the Council is satisfied that the dwelling is a permanent structure and is occupied on a permanent residential basis; ii. the application secures the demolition of the existing dwelling and restoration of the site within three months of occupation of the replacement; iii. the design of the replacement dwelling reflects the character and appearance of the new locality; iv. the gross volume of the replacement dwelling is no larger than the dwelling it replaces, taking into account permitted development rights associated with the existing property. In order to secure more sustainable patterns of development, this will be in the form of replacing the dwelling on a site that is judged to have a life expectancy of at least 100 years:	Landscape, Population, Material Assets

[47] http://www.lsp.eastriding.gov.uk/ccm/navigation/category.jsp?categoryID=21452

	v. within the development limit,* or adjoining it, of a settlement within the Coastal Zone**; vi. within or adjoining the built up area of a smaller settlement (that does not have a development limit) within the Coastal Zone. B. Proposals for the replacement of agricultural dwellings/farmsteads considered to be at risk from coastal erosion within the next 50 years will be permitted within the existing holding to a site that is judged to have a life expectancy of at least 100 years, provided: i. the dwelling/farmstead is expected to remain in agricultural use; ii. the application secures the demolition of the existing dwelling and restoration of the site within three months of occupation of the replacement; iii. the gross volume of the replacement dwelling is no larger than the dwelling it replaces, taking into account permitted development rights associated with the existing property; iv. the design of the replacement dwelling reflects the character and appearance of the new locality.	
East Riding of Yorkshire Sustainable Energy Strategy (2003)	The following objectives are proposed: • Eradicate fuel poverty, giving the people of the East Riding, particularly those of the most vulnerable groups, access to affordable warmth • Reduce the emission of greenhouse gases resulting from the delivery of Council services by minimising emissions of carbon dioxide from all sectors –through energy efficiency. • Increase energy efficiency and use of renewable energy in existing buildings; • Ensure that new buildings incorporate sustainable design and construction techniques, wherever feasible, to minimise energy demand and maximise use of renewable energy; • Enable and encourage more sustainable patterns of travel, cleaner and zero-emissions fuels and vehicle technologies, and a shift towards public transport, walking and cycling. • Consider energy as an overarching issue in the development and review of relevant Council policies.	Climatic Factors, Population, Material Assets

East Riding of Yorkshire Biodiversity Plan[48]	The vision of the plan is: 'Working together to safeguard the biodiversity of the East Riding for now and forever'. The plan is currently under development.	Biodiversity
Shoreline Management Plan – East Riding of Yorkshire Council Action Plan	The action plan identifies the following issues for Flamborough head: • Uncertainty of cliff erosion • Condition of defences	Water, Landscape
Joint Hull and East Riding Structure Plan	The Joint Structure Plan (JSP) was adopted on 29 June 2005 and sets the framework for the development and use of land up to 2016 in the combined area of Hull and the East Riding of Yorkshire. The plan includes policies on the general location of land for new homes, businesses, shops and leisure facilities. It takes the form of an overall strategy and is not site specific. It also gives guidance on encouraging more sustainable forms of movement (for both people and goods), protecting the natural and build environment, respecting and improving the character of the area and managing the risk from flooding and coastal erosion. The JSP replaces the Humberside Structure Plan and fulfils the role of a core strategy for Hull future Local Development Framework in the context of the new planning system.	
Local - North East Lincolnshire Council[49]		
North East Lincolnshire LDF Scoping Report (2005)	Issues identified for the Borough • The population is currently declining whilst the average age is increasing. • On average, the population have a relatively low skill base with many young people not achieving average educational standards. • The economy appears strong statistically but masks the fact that wealth is not captured and fed into the local economy. • There is an assumption that to succeed people may need to move out. • The populations is general less healthy than regional and national indicators	All Topics

48 http://search.eastriding.gov.uk/scripts/semaphoreserver.exe?SAVEDB=east_riding&ORGANISE_CODED=%3Af9&STYPE=simple&CMD=search.run&B=THTML&QUERY00=biodiversity+action+plan

49 http://www.nelincs.gov.uk/

	• Use of public transport is in continuous decline, with cars at the dominant mode of transport	
North East Lincolnshire Local Plan 2003[50]	The vision of the Local Plan is to help shape an environment that creates confidence in the area: • Creating confidence for investment • Creating confidence for regeneration • Creating confidence for communities that the environment and facilities they value will be protected.	All Topics
North East Lincolnshire Community Strategy[51]	The Community Strategy Visions is: North East Lincolnshire 2022 - By improving the physical appearance of the area and the quality of life for its residents, make North East Lincolnshire a place in which we are proud to live, work and welcome visitors.	Population
A regeneration strategy for North East Lincolnshire – New Horizons 2006 -2022[52]	The focus of the strategy is to deliver the Council's vision as set out in the Community Plan. The aspirations of this strategy are ambitious but realistic. This means that whilst the primary focus of our regeneration activities is on transforming and sustaining the competitiveness and performance of North East Lincolnshire to compete with the best performing areas at national, regional and local levels, in the medium and longer term, that our immediate focus must be on taking actions to stabilise and incrementally improve our performance.	All Topics
'Making the Connections' – NE Lincolnshire Cultural Strategy[53]	Objectives identified: • To raise the profile of northeast Lincolnshire as a centre of cultural activity. • To develop a sustainable infrastructure for cultural activity within the area. • To deliver actions to ensure that culture contributes to social and economic actions.	Population, Cultural Heritage, Material Assets

50 http://www.nelincs.gov.uk/localplan/
51 http://www.nelincs.gov.uk/NR/rdonlyres/FCE65B0E-FDFE-4FEC-A243-9583130350A0/0/communitystrat1.pdf
52 http://www.nelincs.gov.uk/NR/rdonlyres/9FADE14B-5A02-4FF2-BED7-928A2C8C7785/0/regenstrategyapp07171400.doc

	• To ensure that culture contributes to and reflects diversity. • To promote a sense of place and promote community identity.	

[53] http://www.nelincs.gov.uk/NR/rdonlyres/3D28DCD9-EA7B-4F43-AF3F-C909FDCD7E48/0/Making_the_Connections_single.pdf

Annex B: Current Baseline Environmental Character

J10.1 The key features along the coast have been used to develop a characterisation of the SMP frontage. The entire frontage has been split into nineteen character areas. The divisions between the areas have been created so that each area has a broadly similar character in terms of land use, geography and coastal character. Further detail about the divisions between character areas is provided in the table below.

J10.2 Figure 3.1 shows a map of the locations of the character areas.

Divisions between character areas

Area	Basis for location of area boundaries
Area 1: Flamborough Head to Sewerby	Rural – urban land use change
Area 2: Bridlington to Hilderthorpe	Urban-rural land use change
Area 3: Wilsthorpe to Atwick	Rural - urban land use change
Area 4: North Cliff to Hornsea Burton (Hornsea)	Urban-rural land use change
Area 5: Rolston to Waxholme	Rural - urban land use change
Area 6: Owthorne to Hollym (Withernsea)	Urban-rural land use change
Area 7: Hollym to Dimlington Cliffs	Rural-industrial land use change
Area 8: Dimlington and Easington Gas Terminals	Industrial - rural land use change
Area 9: Easington to Kilnsea	Spurn is unique coastal feature – considered separately – rural land use
Area 10: Kilnsea to Spurn Point	Spurn is unique coastal feature – considered separately – rural land use.
Area 11: Easington Road to Stone Creek	SMP2 boundary
Area 12: East Immingham to Grimsby Docks	Industrial-urban land use change
Area 13a: Grimsby and Cleethorpes	Humberston Fitties considered separately because of flood risk issues
Area 13b: Humberston Fitties	Urban-rural land use change
Area 14: South of Humberston Fitties to Saltfleet	Change in coastal defences – rural land use.
Area 15: Saltfleet Haven to Theddlethorpe St Helen	Rural - urban land use change
Area 16: Viking Gas Terminal to Sandilands	Urban-rural land use change
Area 17: Sandilands to Chapel Point	Rural - urban land use change
Area 18a: Chapel Point to Skegness	Skegness considered separately because of its significance within East Lindsey's Local Development Framework
Area 18b: Skegness	Urban-rural land use change
Area 19: Gibraltar Point	

J10.3 The influence of the coastal zone and the extent of the potential flood and/or erosion risk largely determine the landward extent of the Character Areas. For example, where low-lying

land stretches many kilometres inland in significant areas of Lincolnshire, the characterisation includes key features located a considerable distance from the shoreline, as they are still affected by shoreline management. Where coastal low-lying land is minimal, or erosion risk is the main threat, the characterisation covers much shorter distances inland.

Communities

J10.4 Along the coastal strip of this SMP, there are several coastal towns, villages and individual dwellings. The coast is generally viewed as an attractive place to live and visit. However, there are frequently challenges shared by many coastal communities, as identified in a recent Government report (Communities and Local Government Committee, 2007):

- Physical and social isolation;
- High proportions of older people together with higher levels of outward migration among young people;
- Low-wage, low-skill economies and seasonality of employment;
- Frequent dependency on a single industry; and
- A high incidence of poor housing conditions and a high proportion of private rented homes.

J10.5 The Indices of Multiple Deprivation 2007 are the Government's official measure of multiple deprivation at the small area level. The indices combine a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. This allows each area to be ranked relative to one another according to their level of deprivation. The Index of Multiple Deprivation maps deprivation across England by super output area, taking into account the following socio-economic criteria:

- Living environment;
- Crime;
- Barriers to housing and services;
- Education and skills;
- Health;
- Employment; and
- Income.

Areas 1 to 11: Flamborough Head to Stone Creek

J10.6 Policy approaches for the Coastal sub-area of the East Riding are set out in the Yorkshire and Humber Plan: Regional Spatial Strategy (published in 2008). The Regional Spatial Strategy will focus new development on the Scarborough urban area (north of the SMP boundary), with supporting growth at Bridlington.

J10.7 Bridlington is identified as a Principal Town with Hornsea and Withernsea identified as Local Service Centres. Withernsea is also identified as having particular needs for wide ranging regeneration due to its declining economy and relatively high unemployment and deprivation levels. The Regional Spatial Strategy identifies that risks from flooding, erosion and landslip along the coast should be avoided through roll-back approaches (i.e. moving development back away from the coastline) to relocate existing uses.

J10.8 SEA requires an examination of population and human health and this assessment has revealed that in the East Riding, deprivation has become more focused on certain areas of the coastline – Bridlington, south of Bridlington and Withernsea/Welwick. In the East Riding, the areas with the worst health records are also found in Bridlington. Within the East Riding it is clear that deprivation is concentrated along much of the length of coast line, although deprivation does not reach the extreme levels that it does in the other authorities.

Areas 12 to 13b: East Immingham to Humberston Fitties

J10.9 Policy approaches for the Humber Estuary sub-area are set out in the Yorkshire and Humber Plan: Regional Spatial Strategy (published in 2008). Grimsby and Cleethorpes are identified as Sub Regional Towns.

J10.10 North East Lincolnshire Council's Annual Monitoring Report for 2008 states that chemical industry, manufacturing, port activities and food processing have formed the main economic base of North East Lincolnshire since the decline of the fishing industry. In particular, the recent history of Grimsby is tied to the development of its ports and docks. Grimsby's economy has suffered from industrial decline and restructuring and economic indicators show falling performance in recent years.

J10.11 In parts of Grimsby there are serious levels of social and economic deprivation, high crime levels, fuel poverty, poor health and worklessness. In Grimsby as a whole there is a need to improve the activity levels and skills of the potential workforce. There are low levels of employment growth and participation, and so employment growth and diversification, especially of service jobs must be pursued.

J10.12 There is a substantial amount of land to facilitate growth and rejuvenate former employment sites in the urban area and regenerate key sites including the Grimsby Fish Docks. The role of Cleethorpes as a focus for tourism will be supported whilst recognising the attraction of the waterfront for residential development, and the estuary as internationally significant habitat.

J10.13 Southeast of Grimsby are the towns of Humberston Waltham and New Waltham, all of which are closely associated with the Grimsby/Cleethorpes conurbation.

J10.14 The Yorkshire and Humber Plan: Regional Spatial Strategy states that there have been historic population losses from Grimsby to surrounding areas (although not to the same extent as Hull), which should be arrested by a range of urban regeneration and other policy approaches. The Regional Spatial Strategy promotes strengthening the role of Grimsby/Cleethorpes as a 'Sub-Regional Town', particularly through town centre renaissance and housing renewal and growth. In particular the Regional Spatial Strategy seeks to:

- Foster value-added port-related activities,
- Encourage growth and diversification, particularly the development of a stronger service sector,
- Enhance the tourism offer and attraction of Cleethorpes.

J10.15 The Humber area suffers from a significant degree of polarisation in terms of social and economic characteristics and this is reflected in the diverse physical condition of, and market demand for housing. Grimsby has smaller and less intense concentrations of housing stress than Hull, but none the less Renaissance Programmes are underway. There are also areas of strong market pressure and affordability issues, although these areas tend to be south of Grimsby/Cleethorpes, away from the estuary.

J10.16 The emerging Local Development Framework for North East Lincolnshire is likely to have a focus on developing and improving vital and viable town centres. This will involve focusing retail development on the town centres of Grimsby, Cleethorpes and Immingham to strengthen their retail offer, and where appropriate bring about regeneration; securing high quality developments. This should be driven by the 'Renaissance Programme', which links priorities for housing with community and regeneration objectives, seeking to build sustainable high quality communities.

J10.17 Within North East Lincolnshire there are five Super Output Areas that rank within the 200 most deprived Super Output Areas in the country in terms of Index of Multiple Deprivation. The most deprived four are located close to each other in central Grimsby, relatively near to the docks. In North East Lincolnshire, poor health is focused in Central Grimsby. However, Grimsby does not suffer from poor health to the same degree that it does with deprivation more generally, with only two Super Output Areas within the worst 1,000 Super Output Areas nationally in terms of health

Areas 14 to 19: South of Humberston Fitties to Gibraltar Point

J10.18 In East Lindsey there are small but significant pockets of social deprivation in parts of the District, particularly along the coast, which are among the most deprived in the East Midlands. There is a larger proportion of older people living in East Lindsey than the national norm and a large number of people with longstanding health conditions or disabilities retire to this area, often on relatively low fixed incomes.4

J10.19 Skegness remains one of the UK's premier seaside towns. Holiday centres along the coast such as Skegness and Mablethorpe provide employment, although much of it is seasonal. However Skegness and Mablethorpe also contain concentrated areas of deprivation, which should continue to be addressed by regeneration initiatives as a priority. Within the Eastern Sub-Area, Skegness and Mablethorpe are earmarked for regeneration by the Regional Spatial Strategy.

J10.20 Deprivation appears to have become more focused and more severe in parts of East Lindsey (in and around Skegness and Mablethorpe). In East Lindsey poor health is very much associated with settlements along the coast in a similar way to deprivation more generally.

Area 1: Flamborough Head to Sewerby

Natural Environment and Landscape

J10.21 The landscape of the area is largely open and rural. The dominant land use is grade 3 agricultural land, which is used mainly for arable farming with some small scale grazing. The agricultural land is interspersed with the small nucleated settlements of Flamborough, Sewerby, Marton and The Crofts. Small rural communities and isolated farms are also scattered throughout the area. There is a golf course near Sewerby that attracts visitors and recreation.

J10.22 Flamborough Head is internationally designated as a Special Protection Area and Special Area of Conservation. This area is also a Sensitive Marine Area and Site of Special Scientific Interest. The entire headland is also a Heritage Coast and contains three Geological Conservation Review sites.

Tourism

J10.23 The small pocket beach at South Landing is designated as EC bathing beach and attracts visitors.

Infrastructure

J10.24 Infrastructure within the area includes a sewage treatment works and outfall south of Flamborough. There is also an RNLI station at South Landing and a fog signal station at Flamborough Head.

Historic Environment

J10.25 There is a designated conservation area in Flamborough village. The area includes many listed buildings including the Grade 1 listed building at Sewerby Hall. Scheduled Monuments in the area include: an Operation Diver heavy anti-aircraft gun site at Flamborough Head, Flamborough Castle, Danes Dyke, and an Anglo-Saxon cemetery at Home Farm. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 2: Bridlington to Hilderthorpe

Natural Environment and Landscape

J10.26 The coastal hinterland is almost entirely urbanised with a busy commercial and tourist base at its centre surrounded by fairly high density residential housing. Towards the rear of the area, the residential density falls slightly as agricultural land begins to overlap the outskirts of the town. There are also many commercial properties and an industrial estate at Bessingby.

Tourism

J10.27 The beach that fronts the town is an EC designated bathing beach and provides an important tourist attraction and recreational resource. The harbour area provides facilities for the local fishing community and is a focus for tourist and water sports enthusiasts.

Infrastructure

J10.28 Infrastructure in the area includes a sewage treatment works, harbour, a RNLI station, a coastguard station and a train station. Bridlington is regionally well connected by a railway linking Hull to Scarborough. Access to the north (Scarborough) and south (Hull and Beverley) is available by the A165. The A614 provides a link to areas to the west.

Historic Environment

J10.29 The Old Town area of Bridlington is a designated Conservation Area and the deserted medieval village of Hilderthorpe is a Scheduled Monument, and there are numerous listed buildings in the town. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 3: Wilsthorpe to Atwick

Natural Environment and Landscape

J10.30 This largely rural stretch of coastline is characterised by undulating low glacial till cliffs interspersed with small sections of privately built coast protection works. The dominant land use of the area is grade 2 and 3 agricultural land which is predominantly used for arable

farming. The farmland is interspersed with small local settlements, rural communities and farmsteads. There are Sites of Special Scientific Interest at Withow Gap, Skipsea, and Skipsea Bail Mere.

Tourism

J10.31 Caravan and camping parks are integral to these coastal settlements and there is also a golf course at Out Leys and several fishing lakes that provide important recreational resources. The beach is used for informal recreation activities such as fishing and there are several EC designated bathing beaches along this area that can be accessed by a number of footpaths along the frontage.

Infrastructure

J10.32 Infrastructure in the area includes a natural gas storage and processing facility north of Atwick. There are several drain outfalls and the Barmston Main drain outfall is protected by coastal defences. The northern parts of the area are regionally well connected through the A165 which runs approximately north-south through the area.

Historic Environment

J10.33 There is a designated Conservation Area at Atwick. There are also several listed buildings in the area. The Royal Observer Corps underground monitoring post south of Skipsea is a designated Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 4: North Cliff to Hornsea Burton (Hornsea)

Natural Environment and Landscape

J10.34 Hornsea is a small coastal town and consists of a mixture of residential properties, hotels and other tourist-related developments, interspersed with green spaces and parks.

J10.35 Set back about one kilometre from the shoreline is Hornsea Mere, a Special Protection Area and Site of Special Scientific Interest. It forms an important habitat and significant amenity with recreational, educational and conservation value. Hornsea Mere is surrounded by agricultural fields and woodland and is linked to the sea by Stream Dyke.

Tourism

J10.36 The local economy is highly dependent on tourism and recreation. Hornsea has a Blue Flag bathing beach and this provides a basis for recreation activities such as swimming, fishing and sailing. The town is bounded to the north and south by caravan and camping parks that are present on the coastal fringe. The dominant land use of the rural land behind the town is grade 2 and 3 agricultural land.

Infrastructure

J10.37 Infrastructure in the area includes a sewage treatment works that serves the town.

Historic Environment

J10.38 The central part of Hornsea is designated as a Conservation Area. The area also contains two Scheduled Monuments which include a moated site at Hall Garth Park and the deserted village of Southorpe. There are also many listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 5: Rolston to Waxholme

Natural Environment and Landscape

J10.39 This frontage is characterised by a gently undulating landscape fronted by undefended glacial till cliffs. The dominant land use of the area is grade 3 agricultural land which is mainly used for arable farming with some pastoral grazing. Inland, Lambwath Meadows is a Site of Special Scientific Interest.

Tourism

J10.40 The beaches are accessible at several locations along the frontage and there is an EC designated bathing beach at Tunstall. The beaches form an important feature that attracts a variety of informal recreational activities including fishing. There are caravan parks at Aldbrough, North Cliff and Tunstall.

Infrastructure

J10.41 Infrastructure within the area includes sewage treatment works and a natural gas storage facility approximately 2.5 km south east of Aldbrough. There is a Ministry of Defence site in the vicinity of Cowden Parva. There are no A roads within the area.

Historic Environment

J10.42 There are several listed buildings within the area including a Grade 1 listed building at Grimston Garth and there is a designated Conservation Area at Tunstall. Two moated sites near Grimston Garth are designated as a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 6: Owthorne to Hollym (Withernsea)

Natural Environment and Landscape

J10.43 The area mainly consists of residential housing. Withernsea is a small coastal town located round the A1033 which bisects the town. The town is bounded by several caravan parks to the north and south. Withernsea provides many local and regional services and facilities. At the rear of the town the residential housing gives way to grade 2 and 3 agricultural land, used predominantly for arable farming.

Tourism

J10.44 Tourism is a key economic driver for the area and Withernsea has many visitor attractions including an EC designated bathing beach. The beach is an important recreational resource

for a variety of activities including use by anglers and walkers. Local fishermen use the nearshore waters for netting and boat launching and landing access is available.

Infrastructure

J10.45 The area includes sewerage infrastructure, a RNLI station and coastguard station. The A1033 forms the town's major communication route with areas to the south and west.

Historic Environment

J10.46 There are listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 7: Hollym to Dimlington Cliffs

Natural Environment and Landscape

J10.47 This frontage is composed of cliffs developed in glacial tills. The main land use is grade 2 and 3 arable land. The Dimlington cliffs are designated as a geological Site of Special Scientific Interest. There are a few small settlements in the area, with the main villages being Holmpton, Hollym and Out Newton. There are also several scattered farmsteads and small communities in the area.

Tourism

J10.48 The beach is used for a range of recreation activities including fishing.

Infrastructure

J10.49 The main infrastructure of the area comprises the sewage works at Hollym, Out Newton wind farm and a RAF underground bunker south of Hollym, which is also a visitor attraction. Hollym is connected to Withernsea and Hull by the A1033.

Historic Environment

J10.50 There is a Conservation Area in Holmpton. The area also has a few listed buildings. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 8: Dimlington and Easington Gas Terminals

Natural Environment and Landscape

J10.51 The area is fronted by large industrial sites containing British Gas and British Petroleum gas terminals which are located on the cliff top at Dimlington, just north of Easington. These supply 20 - 25 % of the UK's natural gas and are defended by a rock revetment. Behind the gas terminals is grade 3 agricultural land used for arable farming.

Tourism

J10.52 There are no specific tourism-related features in this area.

Infrastructure

J10.53 There are no A roads or community infrastructure within the area.

Historic Environment

J10.54 There are no designated historic environmental assets within this character area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 9: Easington to Kilnsea

Natural Environment and Landscape

J10.55 In the north of the area, the coastal village of Easington is located between 300 metres and one kilometre behind the cliff line.

J10.56 The nearshore zone is used by fishing boats which currently have a privately built launching and landing access at Easington.

J10.57 The saline lagoons and dune field contain many important habitats and are designated as part of the Humber Estuary Special Protection Area and Ramsar site as well as being a Site of Special Scientific Interest.

Tourism

J10.58 There are two caravan parks on the coastal fringe to the east of Kilnsea and Easington.

Infrastructure

J10.59 There is little infrastructure in the area, with no A roads present in the area.

Historic Environment

J10.60 Easington is a designated Conservation Area. This area has a few listed buildings and the Tithe Barn is a designated Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 10: Kilnsea to Spurn Point

Natural Environment and Landscape

J10.61 Spurn peninsula comprises open land with different coastal habitat types including sand dunes and sandy beaches on the eastern shoreline and a sandy foreshore at the head giving way to mudflats and saltmarsh over much of the western shoreline.

J10.62 Spurn is an important area for nature conservation and is designated as part of the Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. The area is also a National Nature Reserve and is included within the Spurn Heritage Coast.

Tourism

J10.63 There is extensive recreational use based mainly around walking and observing the wildlife.

Infrastructure

J10.64 The infrastructure of the area includes a permanently manned lifeboat station at Spurn Head where there are also residential properties used by the RNLI crew. Other facilities include the Humber pilots station, sewage treatment infrastructure, fuel tanks, and field centre and observatory facilities associated with the nature reserve.

Historic Environment

J10.65 Spurn Head has a disused lighthouse and WW1 artillery batteries which are of historical interest. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 11: Easington Road to Stone Creek

Natural Environment and Landscape

J10.66 The area is predominantly rural and comprises mainly grade 2 and 3 agricultural land with a small area of grade 1 agricultural land towards the centre of Sunk Island.

J10.67 The Humber Estuary is designated as a Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest and part of the area is within the Heritage Coast.

Tourism

J10.68 There are no specific tourism-related features in this area.

Infrastructure

J10.69 The area includes drainage infrastructure such as pumping stations and outfalls in conjunction with a number of drains, dikes and streams to aid the drainage of the low-lying land. The area has a limited road network and connections to other areas are generally restricted.

Historic Environment

J10.70 There are Scheduled Monuments within the area, including two moated sites near Winsetts Farm and Winestead Manor, and a heavy anti-aircraft gunsite at Stone Creek. The area also contains many listed buildings and a Conservation Area at Sunk Island. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 12: East Immingham to Grimsby Docks

Natural Environment and Landscape

J10.71 The coastal hinterland is heavily industrialised and the infrastructure and activities are mainly associated with the operations of Immingham docks, just to the west of the area. These industrial units are interspersed with grade 3 agricultural land used for arable farming. Set

back behind the main industrial area are the settlements of Stallingborough and Healing which are mainly residential areas with a few local services and community facilities. Towards the rear of the floodplain there are scattered farms and small rural communities

J10.72 The intertidal mudflats and foreshore are included within the internationally designated Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. The frontage is popular with anglers and the nearshore zone supports a local commercial fishing industry.

Tourism

J10.73 There are no specific tourism-related features.

Infrastructure

J10.74 In addition to the major industrial infrastructure and port facilities in the area, there are also several drains, sewage treatment works and land drainage pumping stations at Mawnbridge and Middle Drain. The area has a well-developed communications network with one railway line to serve the industrial sites, and one to serve the settlements. The A180 is the arterial roadway through the area and the A1173 links this road to Immingham docks. The A1136 also provides the main route access to residential Grimsby and areas further south

Historic Environment

J10.75 There are Scheduled Monuments in the area including a medieval nunnery at Stallingborough, and two moated sites at Healing Wall. There are also many listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 13a: Grimsby and Cleethorpes

Natural Environment and Landscape

J10.76 This predominantly urban and industrial frontage comprises a mix of residential housing, commercial properties and industrial areas in Grimsby and Cleethorpes. Towards the fringes of the towns, these developed areas are interspersed with open spaces, sports fields, and a country park. Behind Cleethorpes, there are wooded areas and grade 3 agricultural land.

J10.77 Grimsby and Cleethorpes are regional commercial centres and provide many community and visitor facilities and services. Grimsby dock is a large commercial port.

J10.78 Humberston is a smaller satellite settlement to the south east of the main urban area of Cleethorpes and Grimsby. It is mainly composed of residential housing and also provides local services and community facilities.

J10.79 The coast in this area is internationally designated as part of Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest.

Tourism

J10.80 Tourism is a key economic driver in Cleethorpes and this area has many recreation and tourism developments close to the EC designated bathing beach that fronts the town. The

beach is used for a variety of recreational activities including sailing, water sports, fishing, walking and bathing.

Infrastructure

J10.81 In addition to the well developed industrial infrastructure in Grimsby, there is a dredged navigation channel for the dock, and a marina. Cleethorpes has a pier, promenades and slipways. There is also an outfall for Buck Beck, which is the main drainage channel for the area.

J10.82 The area has a well developed transport network with major arterial routes consisting of the A16, A180, A1136, A1098, and A1031. A railway also provides access to Cleethorpes and Grimsby from the west.

Historic Environment

J10.83 Humberston Abbey is a Scheduled Monument, and the area also contains numerous listed buildings. The Dock Tower on Grimsby docks is the area's only Grade 1 listed building. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 13b: Humberston Fitties

Natural Environment and Landscape

J10.84 The lower foreshore area is comprised of mudflats, although the upper shore is saltmarsh and the beach is backed by sand dunes. The coast in this area is internationally designated as part of Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest.

Tourism

J10.85 The coastal hinterland is comprised of holiday chalets which are predominantly used seasonally. Humberston Fitties is also a designated Conservation Area. Behind the holiday chalet park of Humberston Fitties, the landscape is open and generally used for grade 3 agricultural land drained by small drains. There are very few houses and these are well scattered.

Infrastructure

J10.86 Towards the rear of the area, the A1031 provides a major transport link to Grimsby and Cleethorpes to the north and Mablethorpe to the south.

Historic Environment

J10.87 A Conservation Area is designated at Humberston Fitties. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 14: South of Humberston Fitties to Saltfleet

Natural Environment and Landscape

J10.88 The landscape is generally low-lying and open and the main land use of the area is grade 1 and 2 agricultural land. The residential density is generally low in this area, with larger settlements including North Somercotes, Tetney, and Saltfleet situated near the coast which provide local community facilities and services. There are also many scattered farms and rural communities throughout the area. There are caravan parks near the coast at North Somercotes, Skidbrooke North End, and Saltfleet.

J10.89 The coast in this area is of high environmental significance, with many important habitats. The entire intertidal foreshore and coastal strip is designated as part of the Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. There is also a large National Nature Reserve at Donna Nook and a RSPB reserve at Tetney Marshes.

Tourism

J10.90 Tourism is an important aspect of the local economy, and the beach provides an important recreational resource for a range of activities including walking, boating, angling and bathing.

Infrastructure

J10.91 Infrastructure in the area includes a reservoir at Covenham, sewage treatment works, wind farms, land drainage pumping stations and Tetney tank farm. The area around Donna Nook is a Ministry of Defence site (RAF bombing range). The region is bisected by the A1031 which connects many of the settlements in the area, as well as providing a local link to Cleethorpes and Grimsby to the north, and Mablethorpe to the south.

Historic Environment

J10.92 The area contains many listed buildings and a moated site at North Cockerington Hall, designated as a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 15: Saltfleet Haven to Theddlethorpe St Helen

Natural Environment and Landscape

J10.93 The landscape is generally low-lying and open and the area is mainly composed of grade 3 agricultural land. There are clusters of coastal settlements at Theddlethorpe, Theddlethope St Helen, Saltfleetby St Clement and Saltfleetby All Saints. Set back from the shoreline on the floodplain are the villages of Manby, Grimoldby, Gayton Le Marsh, Great Carlton and Saltfleetby St Peter. Amongst the villages there are also many farms and small rural communities.

J10.94 Part of the Humber Estuary Ramsar site and Special Protection Area and the Saltfleetby-Theddlethorpe Dunes and Gibraltar Point Special Area of Conservation are included in this area. The Saltfleetby – Theddlethorpe dunes are also a National Nature Reserve and a Site of Special Scientific Interest.

Tourism

J10.95 There is limited tourism infrastructure, however the area attracts large numbers of visitors drawn by its wildlife and rural character.

Infrastructure

J10.96 There is land drainage infrastructure within the area such as the pumping station at Theddlethorpe. The A1031 provides the main transport link to Mablethorpe, the nearest town, just to the south of the area.

Historic Environment

J10.97 The area has many listed buildings, including the west tower at the former Church of St Peter at Saltfleetby St Peter which is a Grade 1 listed building. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)

Natural Environment and Landscape

J10.98 The settlements of Mablethorpe, Trusthorpe, Sutton on Sea and Sandilands form a nearly continuous urban belt along much of the area's coastal frontage. These coastal towns provide services and facilities to the local catchment, with Mablethorpe being the regional commercial centre. Highest population densities occur closest to the coast and the commercial activities are mainly based around the tourist industry.

J10.99 Behind the main urban coastal dwellings the predominant land use is grade 3 agricultural land. There are also a number of scattered farms and small rural communities.

Tourism

J10.100 Tourism is a key economic driver for these towns and the surrounding settlements and consequently they are fringed by a number of caravan and camping parks. The beaches and promenades provide opportunities for many recreation and leisure activities, and this forms the basis of the area's tourism.

Infrastructure

J10.101 In the north of the area is the Viking Gas Terminal, the major industrial site in the area. There are several pumping stations on the floodplain along with the 'Heading drain' and 'The Cut' that help to drain the low-lying floodplain. Sewage treatment infrastructure is also present within the area.

J10.102 The area is regionally and locally connected through a road network to the north by the A1131, to the west by the A1104, A157 and A1111, and to the south by the A52

Historic Environment

J10.103 There are Scheduled Monuments in the area including Hagnaby Abbey (a Premonstratensian Abbey and a post-medieval house and formal garden), as well as a small moated site south of Stain Farm. In addition, the area has many listed buildings. Other significant non-designated

assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 17: Sandilands to Chapel Point

Natural Environment and Landscape

J10.104 The main land use of this area is grade 3 agricultural land, used mostly for arable farming, and some pastoral grazing. The settlement of Alford is situated at the rear of the floodplain, around 10 kilometres inland. This is the area's only town and it has many local facilities and services. Anderby Creek is the only coastal settlement and is situated behind the dunes but seawards of the sea bank, which provides flood protection to the low-lying behind. There are many scattered farms and small rural communities between the villages as well as several caravan and camping sites in the coastal hinterland. The environmental significance of the area is high, with Wolla Bank to Chapel Point area and Sea Bank Clay Pits designated as Sites of Special Scientific Interest.

Tourism

J10.105 The beach is an EC designated bathing beach and provides an important recreational resource. Tourism is key to the local economy in this area with a number of caravan and camping sites in the area.

Infrastructure

J10.106 The key infrastructure in the area includes land drainage pumping stations at Boygrift and Anderby. The area is also drained by a number of drainage channels such as the Main Drain that discharges into the sea at Anderby Creek. There are two main roads in the area, the A1111 provides a link between Sutton on Sea and Alford to the west and the A52 runs through several of the villages such as Mumby and Huttoft to Chapel St Leonards, Ingoldmells and Skegness to the south.

Historic Environment

J10.107 There is a registered park and garden at Well Hall as well as numerous listed buildings in the area. Markby Abbey is a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 18a: Chapel Point to Skegness

Natural Environment and Landscape

J10.108 The coastal hinterland is mainly urbanised with a virtually continuous belt of settlement along the frontage which includes the villages of Chapel St Leonards and Ingoldmells. Smaller sub-urban settlements of Winthorpe and Seathorne are situated between the main towns of Skegness and the village of Ingoldmells, and these are composed mainly of housing.

J10.109 Behind the urbanised coastal strip is mainly grade 3 agricultural land that is farmed both arably and pastorally. The farmland of the floodplain is interspersed with a number of villages with local facilities and small rural communities and farmsteads.

Tourism

J10.110 Tourism provides the main economic driver for the area and consequently there are many caravan parks along the coast. The majority of these are at Ingoldmells which is comprised almost entirely of caravan and camping parks or holiday villages.

J10.111 The beaches play an integral role in supporting the regional tourist industry, and they provide an important resource for informal recreation. The beaches are EC designated bathing beaches and are also used by anglers for fishing.

Infrastructure

J10.112 The key infrastructure in the area includes land drainage pumping stations at Ingoldmells and Chapel Basin, coastguard lookout stations, a wind farm at Orby, and sewage treatment works. The area has a well-developed road network with the A52 linking the coastal towns with areas to the north, the A158 providing an arterial route to Horncastle and areas to the west, and the A52 providing access to towns to the south of the area. There are many coastal access points along the frontage.

Historic Environment

J10.113 There are many listed buildings including Grade 1 listed buildings at Dobson's Windmill in Burgh Le Marsh, and the Church of St Mary in Winthorpe. There are also scheduled monuments at Butler Bump round barrow cemetery between Cumberworth and Willoughby, Manor Farm moated site in Orby, a Motte castle at Castle Hill 250 metres east of Manby Hall Farm, and Bratofft Hall moated site. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 18b: Skegness

Natural Environment and Landscape

J10.114 This predominantly urban frontage is a lively seaside resort – the fifth largest, by visitor numbers in the UK. Skegness is the regional commercial centre with many services and entertainment facilities and relatively high density housing.

J10.115 Behind the urbanised coastal strip is mainly grade 2 and 3 agricultural land that is farmed both arably and pastorally. The foreshore and sand dunes in the southern part of Skegness are also designated under the Saltfleetby Theddlethorpe Dunes & Gibraltar Point Special Area of Conservation.

Tourism

J10.116 The beaches play an integral role in supporting the regional tourist industry which is key to the local economy. The beaches are EC designated bathing beaches which provide an important resource for informal recreation and are also used by anglers for fishing.

Infrastructure

J10.117 Skegness has a well developed road network and the A158 provides an arterial route to Horncastle and areas to the west, and the A52 links the town with Mablethorpe to the north and Boston to the south. A railway also provides a regional link to the East Coast Main Line at Grantham.

Historic Environment

J10.118 There are many listed buildings including Grade 1 listed buildings at Dobson's Windmill in Burgh Le Marsh. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Area 19: Seacroft to Gibraltar Point

Landscape, Natural Environment and Biodiversity

J10.119 This area contains land used for arable farming and this constitutes the main economic activity in this area. The coastal hinterland has a very low residential density with a few houses in Seacroft (a suburb of Skegness), and a few scattered small rural communities and farms. Set back about 6 kilometres from the coast is the slightly larger village of Wainfleet All Saints, which provides local services and community facilities.

J10.120 The coast is designated as the Gibraltar Point Ramsar site, Special Protection Area, and Special Area of Conservation. There is a National Nature Reserve at Gibraltar Point.

Tourism

J10.121 The aesthetic values of the area attract many visitors and the beach and coastal strip is used by walkers and ornithologists.

Infrastructure

J10.122 Infrastructure in this area includes a land drainage pumping station at Burgh Sluice and a main line railway that runs from Skegness to the north of the area to Wainfleet All Saints, and then on to Grantham. The A52 provides a main route to Skegness. There are two car parks and a visitor centre at Gibraltar Point, where there is also access to the beach.

Historic Environment

J10.123 There are many listed buildings within the area, including a Grade 1 listed building at Magdalen College School (now a library) at Wainfleet All Saints. There is a Scheduled Monument at the Medieval Salt workings at Wainfleet Saint Mary. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

Annex C: Internationally and nationally environmentally designated sites within the SMP area

Name	Features of interest	Area (hectares)
Flamborough Head SAC	• Reefs • Vegetated sea cliffs of the Atlantic and Baltic coasts • Submerged or partially submerged sea caves	6,312
Flamborough Head SSSI	The site comprises the coastal cliffs of Flamborough Head between Reighton and Sewerby, composed of chalk and softer sedimentary rocks. The cliff line exposes a variety of geological features. These rock exposures are also of interest in supporting important breeding bird colonies, whilst the cliff tops support interesting plant communities.	315
Flamborough Head and Bempton Cliffs SPA	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: During the breeding season; • Kittiwake *Rissa tridactyla* Assemblage qualification: A seabird assemblage of international importance The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 seabirds: During the breeding season, the area regularly supports 305,784 individual seabirds	212
Skipsea Bail Mere SSSI	Skipsea Mere Bail consists of an area of agricultural land lying immediately north west of the village of Skipsea. The interest lies in the lake deposits underlying below the fields and can be accessed by auger or borehole. Skipsea Bail Mere is important for the interpretation of the vegetational history of the northern part of the Holderness coastal plain. The organic deposits which have infilled the basin contain a pollen and macrofaunal record that extends from the Devensian Late Glacial (around 13 Ka BP) through to historic times.	44
Withow Gap, Skipsea SSSI	Withow Gap, Skipsea is an important site for the interpretation of Late Devensian (glacial) and Flandrian (post-glacial) environmental history in Holderness. The unique feature of the site is the exposure in a coastal section of a sequence of mere deposits which occupies a hollow in the Late Devensian (Skipsea) till. This provides an unusual opportunity to see the complete stratigraphy, its lateral variations and the complexity of the geomorphological processes that operated at the former lake margin. Both the coastal section and the subsurface aspects of the hollow inland are invaluable for research and education, and the site has yielded a considerable volume of palaeoenvironmental data from studies of pollen, plant macrofossils, molluscs and lithostratigraphy.	8

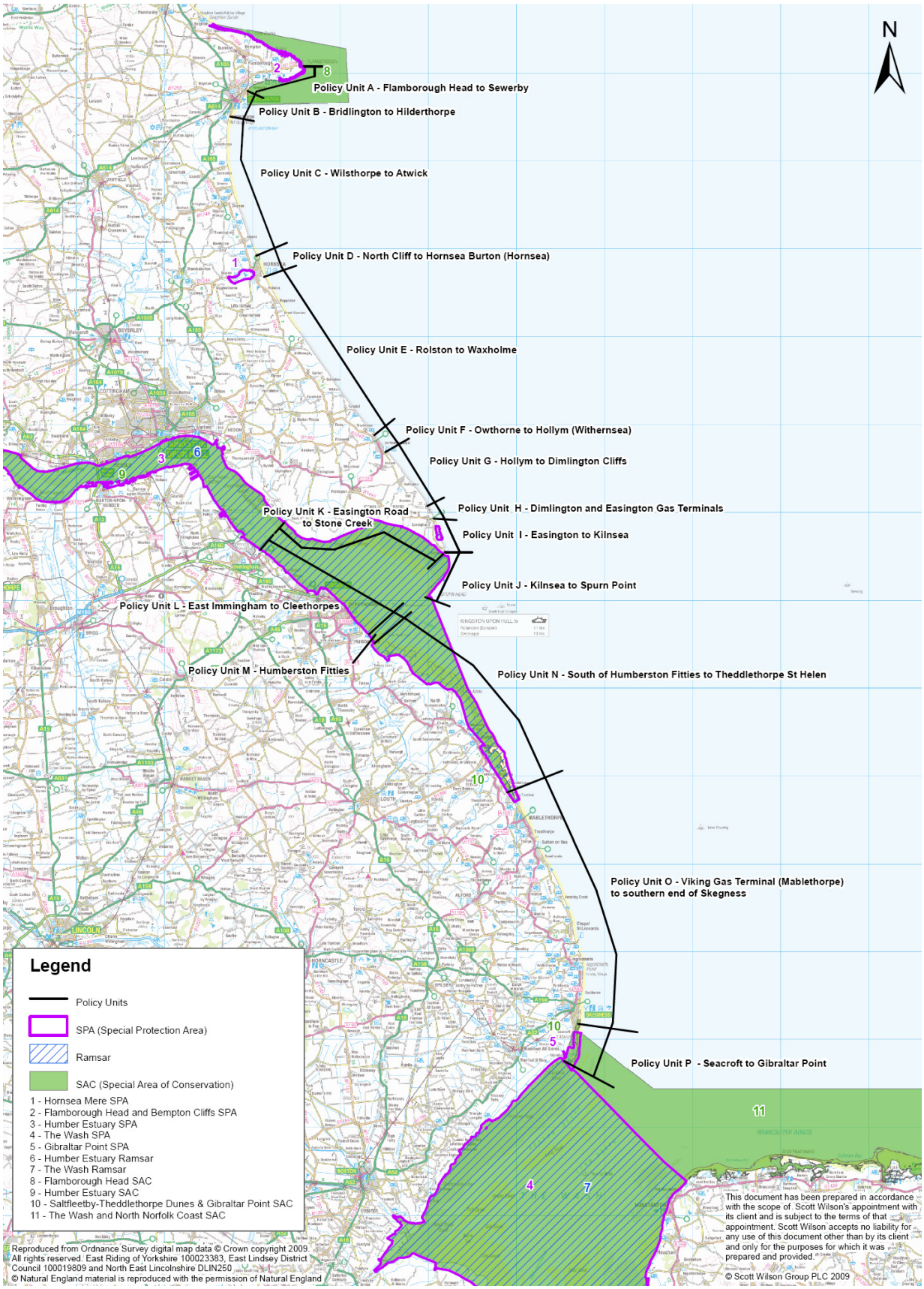
Name	Features of interest	Area (hectares)
Hornsea Mere SPA	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: Over winter; • Gadwall *Anas strepera*, 300 individuals representing at least 1.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)	231
Hornsea Mere SSSI	Hornsea Mere is a site of national ornithological importance. It consists of a large shallow eutrophic lake of about 120 hectares (300 acres), together with its associated habitats of reedswamp, fen and carr woodland, representing a relic of the once-extensive marshes and lakes of Holderness.	230
Dimlington Cliffs SSSI	Dimlington is a key site for Quaternary stratigraphy. Organic remains in the Dimlington Silts provide not only a good record of palaeoenvironmental conditions but also a limiting date for the maximum expansion of Late Devensian ice. Dimlington also provides valuable exposures in the Basement Till which includes Scottish and Scandinavian erratics and masses of fossiliferous Bridlington Crag transported from the floor of the North Sea. The site also provides sedimentary evidence for the superimposition of two till units associated with a single ice sheet.	55
The Lagoons SSSI	The site known as the Lagoons is situated on the Holderness coast some 2 kilometres north of Spurn peninsula and south-west of Easington village. It comprises a variety of coastal habitats including saltmarsh, shingle, sand dune, swamp and most significantly, saline lagoons and pools which represent the only extant example in North Humberside of this nationally rare habitat.	68
Spurn NNR	Spurn NNR has sandy beaches and the North Sea on its eastern side, and areas of saltmarsh and extensive mudflats on its western side, the latter attracting thousands of birds. Spurn NNR is owned and managed by the Yorkshire Wildlife Trust.	296
Humber Estuary SAC	• Estuaries • Mudflats and sandflats not covered by seawater at low tide • Sandbanks which are slightly covered by sea water all the time • Coastal lagoons * Priority feature • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`) • Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority feature • Dunes with *Hippophae rhamnoides* • Sea lamprey *Petromyzon marinus* • River lamprey *Lampetra fluviatilis* • Grey seal *Halichoerus grypus*	36,657

Name	Features of interest	Area (hectares)
Humber Estuary SPA	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: During the breeding season; • Little Tern *Sterna albifrons* • Marsh Harrier *Circus aeruginosus* • Bittern *Botaurus stellaris* • Avocet *Recurvirostra avosetta* Over winter; • Bar-tailed Godwit *Limosa lapponica* • Bittern *Botaurus stellaris* • Golden Plover *Pluvialis apricaria* • Hen Harrier *Circus cyaneus* • Avocet *Recurvirostra avosetta* This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: On passage; • Redshank *Tringa totanus* • Dunlin *Calidris alpina alpina* • Red knot *Calidris canutus* • Black-tailed Godwit *Limosa limosa islandica* • Ruff *Philomachus pugnax* Over winter; • Dunlin *Calidris alpina alpina* • Knot *Calidris canutus* • Redshank *Tringa totanus* • Shelduck *Tadorna tadorna* • Black-tailed Godwit *Limosa limosa islandica* Assemblage qualification: A wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl: Over winter, the area regularly supports 187,617 individual waterfowl (5 year peak mean 1991/2 - 1995/6)	37,630

Name	Features of interest	Area (hectares)
Humber Estuary Ramsar	• Assemblages of international importance and species/populations occurring at levels of international importance In addition to the birds: • The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. • The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*. • The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.	37,988
Humber Estuary SSSI	The Humber Estuary is a nationally important site with a series of nationally important habitats. These are the estuary itself (with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh) and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance for the geological interest at South Ferriby Cliff (Late Pleistocene sediments) and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seals *Halichoerus grypus*, river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus*, a vascular plant assemblage and an invertebrate assemblage.	37,000
Donna Nook NNR	Donna Nook NNR is made up of dunes, slacks, saltmarsh and inter-tidal areas. The area is rich in bird life. In summer, breeding dune birds include red-legged partridge, dunnock, whitethroat, linnet, skylark, yellowhammer and tree sparrow; while the mudflats provide a winter home for substantial numbers of brent geese, shelduck, twite, lapland bunting, shore lark, knot and dunlin, and a wide variety of other wading birds. In addition, Donna Nook has one of the largest and most accessible breeding colonies of grey seals in the UK. Donna Nook NNR is owned by the Ministry of Defence and managed by the Lincolnshire Wildlife Trust.	341
Saltfleetby – Theddlethorpe Dunes and Gibraltar Point SAC	• Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`) • Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority feature • Dunes with *Hippophae rhamnoides* • Humid dune slacks • Embryonic shifting dunes	960

Name	Features of interest	Area (hectares)
Saltfleetby – Theddlethorpe Dunes SSSI	This nationally important site includes flats, dunes, salt and freshwater marsh which together support an exceptionally rich flora and fauna. There are outstanding assemblages of vascular plants, invertebrates and breeding birds and it is the most north-easterly breeding site in Britain for the Natterjack Toad. The rapid accretion of dunes and saltmarsh make this an important site for research into the processes of coastal development.	952
Saltfleetby – Theddlethorpe NNR	The dunes began forming in the 13th century, and the same processes of wind and tidal action continues dune formation on the site today. The dunes support a variety of flowers and grasses while saltmarsh and freshwater marsh areas are home to a wide variety of insects, amphibians, birds and mammals.	952
Chapel Point – Wolla Bank SSSI	Chapel Point-Wolla Bank is a nationally important geological site for its inter-tidal sediments, which record the evidence of early Holocene sea level change.	40
Sea Bank Clay Pits SSSI	The Sea Bank Clay Pits comprise a series of isolated flooded clay workings of varying size, depth and topography which now support uncommon aquatic plant communities characteristic of the slightly brackish, eutrophic (nutrient-rich) water in addition to extensive reedbeds and a rich marginal wetland flora. The pits were excavated in 1953 to provide material for the repair of the sea wall between Mablethorpe and Chapel St. Leonards on the Lincolnshire Coast. The pits are also important for breeding, wintering and passage birds. They are known to support a rich aquatic invertebrate fauna, notably beetles, including several nationally scarce species and others new to the County.	17
Gibraltar Point SPA	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: During the breeding season; • Little Tern *Sterna albifrons* Over winter; • Bar-tailed Godwit *Limosa lapponica* This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species: Over winter; • Grey Plover *Pluvialis squatarola* • Knot *Calidris canutus* Assemblage qualification: A wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl: Over winter, the area regularly supports 22,137 individual waterfowl (5 year peak mean 1991/2 - 1995/6)	414

Name	Features of interest	Area (hectares)
Gibraltar Point Ramsar	The area consists of a sand dunes system, freshwater and saltmarsh, extensive intertidal flats, and open water. The vegetation includes sedges (*Carex spp*), rushes, ferns, crowfoot, reed, sea holly, and sea campion. It supports *Pluvialis squatarola* (1.2% of the population), *Limosa lapponica* (0.6% of the population), and *Branta bernicla bernicla* (0.3% of the population). The site is used for recreation and grazing.	414
Gibraltar Point SSSI	This is a nationally important site due to its sand dunes and other coastal habitats and associated fauna, notably invertebrates and passage and breeding birds. Gibraltar Point is also of great importance for its coastal geomorphology.	581
Gibraltar Point NNR	The NNR forms the north-eastern extremity and entrance to the Wash estuary and has been built by complex tidal and geomorphological processes. Most of the reserve is intertidal flats and saltmarsh. There are areas of freshwater marsh and man-made fresh and salty water meres. Large numbers of migrant and overwintering birds visit the NNR. Gibraltar Point NNR is owned and managed by the Lincolnshire Wildlife Trust.	429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Policy Unit A - Flamborough Head to Sewerby
Policy Unit B - Bridlington to Hilderthorpe
Policy Unit C - Wilsthorpe to Atwick
Policy Unit D - North Cliff to Hornsea Burton (Hornsea)
Policy Unit E - Rolston to Waxholme
Policy Unit F - Owthorne to Hollym (Withernsea)
Policy Unit G - Hollym to Dimlington Cliffs
Policy Unit H - Dimlington and Easington Gas Terminals
Policy Unit I - Easington to Kilnsea
Policy Unit J - Kilnsea to Spurn Point
Policy Unit K - Easington Road to Stone Creek
Policy Unit L - East Immingham to Cleethorpes
Policy Unit M - Humberston Fitties
Policy Unit N - South of Humberston Fitties to Theddlethorpe St Helen
Policy Unit O - Viking Gas Terminal (Mablethorpe) to southern end of Skegness
Policy Unit P - Seacroft to Gibraltar Point
Legend
Policy Units
SPA (Special Protection Area)
Ramsar
SAC (Special Area of Conservation)
1 - Hornsea Mere SPA
2 - Flamborough Head and Bempton Cliffs SPA
3 - Humber Estuary SPA
4 - The Wash SPA
5 - Gibraltar Point SPA
6 - Humber Estuary Ramsar
7 - The Wash Ramsar
8 - Flamborough Head SAC
9 - Humber Estuary SAC
10 - Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC
11 - The Wash and North Norfolk Coast SAC
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Annex D: Appraisal Tables

This section contains the following:

- Graphical representation of appraisal of the Plan;
- Graphical comparison of policy packages appraised;
- Preferred packages:
    - Policy Package 1.2 (Flamborough Head to Easington)
    - Policy Package 2.3a (Easington to Kilnsea, Easington Road to Stone Creek)
    - Policy Package 2.3b (Kilnsea to Spurn Point)
    - Policy Package 3.1 (East Immingham to Humberston Fitties)
    - Policy Package 4.1 (South of Humberston Fitties to Gibraltar Point)
- Other policy packages appraised:
    - Policy Package 1.1 (Flamborough Head to Easington)
    - Policy Package 2.1a (Easington to Kilnsea, Easington Road to Stone Creek)
    - Policy Package 2.2a (Easington to Kilnsea, Easington Road to Stone Creek)
    - Policy Package 2.1b (Kilnsea to Spurn Point)
    - Policy Package 2.2b (Kilnsea to Spurn Point)
    - Policy Package 4.2 (South of Humberston Fitties to Gibraltar Point)
    - Policy Package 4.3 (South of Humberston Fitties to Gibraltar Point)

The following tables provide a fully description of what policies were applied within each area.

Flamborough Head to Dimlington and Easington Gas Terminals

Summary of policies appraised by Character Area for Policy Package 1.1.

Character Area	Policy Appraised
Character Area 1: Flamborough Head to Sewerby	No Active Intervention for all epochs along the entire frontage, but maintaining the access to, and functionality of, the RNLI Station at South Landing.
Character Area 2: Bridlington to Hilderthorpe	Hold the Line for all epochs along the entire frontage, with a local Advance the Line policy during epoch 1 at the site of the proposed marina. P4 evaluated.
Character Area 3: Wilsthorpe to Atwick	Hold the line for all epochs along the entire frontage.
Character Area 4: North Cliff to Hornsea Burton (Hornsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.

Character Area	Policy Appraised
Character Area 5: Rolston to Waxholme	Hold the line for all epochs along the entire frontage.
Character Area 6: Owthorne to Hollym (Withernsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character area 7: Hollym to Dimlington cliffs	Hold the line for all epochs along the entire frontage.
Character Area 8: Dimlington and Easington Gas terminals	Hold the line for all epochs along the entire frontage, P4 evaluated.

Summary of policies appraised by Character Area for Policy Package 1.2.

Character Area	Policy Appraised
Character Area 1: Flamborough Head to Sewerby	No Active Intervention for all epochs along the entire frontage, but maintaining the access to, and functionality of, the RNLI Station at South Landing.
Character Area 2: Bridlington to Hilderthorpe	Hold the line for all epochs along the entire frontage, with a local Advance the Line policy during epoch 1 at the site of the proposed marina. P4 evaluated.
Character Area 3: Wilsthorpe to Atwick	No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains.
Character Area 4: North Cliff to Hornsea Burton (Hornsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character Area 5: Rolston to Waxholme	No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains. Local Hold the Line policy at Mappleton in all epochs, but also an alternative policy variation is appraised in a separate handout.
Character Area 6: Owthorne to Hollym (Withernsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character area 7: Hollym to Dimlington cliffs	No Active Intervention for all epochs along the entire frontage.
Character Area 8: Dimlington and Easington Gas terminals	Hold the line for all epochs along the entire frontage, P4 evaluated.

Easington to Kilnsea and Easington Road to Stone Creek

Summary of policies appraised by Character Area for Policy Package 2.1a.

Character Area	Policy Appraised
Character Area 9: Easington to Kilnsea	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character Area 11: Easington Road to Stone Creek	Hold the line for all epochs along the entire frontage, P4 evaluated.

Summary of policies appraised by Character Area for Policy Package 2.2a.

Character Area	Policy Appraised
Character Area 9: Easington to Kilnsea	Hold the line for all epochs along the entire frontage, P3 evaluated.
Character Area 11: Easington Road to Stone Creek	Hold the line for all epochs along the entire frontage, P3 evaluated.

Summary of policies appraised by Character Area for Policy Package 2.3a.

Character Area	Policy Appraised
Character Area 9: Easington to Kilnsea	The defences would be held in their current position with limited Managed Realignment to ensure defence sustainability and compliance with relevant legislation. The defences would maintain the present standard of protection against flooding.
Character Area 11: Easington Road to Stone Creek	The defences would be held in their current position with limited Managed Realignment to ensure defence sustainability and compliance with relevant legislation. The defences would maintain the present standard of protection against flooding.

Spurn Head

Summary of policies appraised by Character Area for Policy Package 2.1b.

Character Area	Policy Appraised
Character Area 10: Kilnsea to Spurn Point	It is assumed that the barrier would be maintained in its current position. This would require the use of defences and coastal management to prevent erosion and barrier migration.

Summary of policies appraised by Character Area for Policy Package 2.2b.

Character Area	Policy Appraised
Character Area 10: Kilnsea to Spurn Point	No human intervention to manage the coast would be undertaken, and existing defences would deteriorate under natural processes. The barrier would evolve under natural processes and if breaches occurred, there would be no human intervention to assist healing of the breaches.

Summary of policies appraised by Character Area for Policy Package 2.2c.

Character Area	Policy Appraised
Character Area 10: Kilnsea to Spurn Point	Allow the Spurn barrier to evolve largely naturally with limited intervention to maintain the barrier's integrity and access to Spurn Point.

East Immingham to Humberston Fitties

Summary of policies appraised by Character Area for Policy Package 3.1.

Character Area	Policy Appraised
Character Area 12: East Immingham to Grimsby Docks	The defences would be held in their current position and their flood defence function maintained. P4 Evaluated.
Character Area 13a: Grimsby and Cleethorpes	The defences would be held in their current position and their flood defence function maintained. P4 Evaluated.
Character Area 13b: Humberston Fitties	Hold the Line in epoch 1 for the entire frontage with P3. Managed realignment to the existing secondary floodbank in epoch 2 with P4, with the defences held with P4 for epoch 3.

South of Humberston Fitties to Gibraltar Point

Summary of policies appraised by Character Area for Policy Package 4.1.

Character Area	Policy Appraised
Character Area 14: South of Humberston Fitties to Saltfleet	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 15: Saltfleet Haven to	Hold the line for all epochs along the entire frontage,

Character Area	Policy Appraised
Theddlethorpe St Helen	P4 evaluated
Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 17: Sandilands to Chapel Point	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 18a: Chapel Point to Skegness	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 18b: Skegness	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 19: Seacroft to Gibraltar Point	Hold the line for all epochs along the entire frontage, P4 evaluated

Summary of policies appraised by Character Area for Policy Package 4.2.

Character Area	Policy Appraised
Character Area 14: South of Humberston Fitties to Saltfleet	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 15: Saltfleet Haven to Theddlethorpe St Helen	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)	Hold the Line for epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, with P4 evaluated.
Character Area 17: Sandilands to Chapel Point	Hold the Line for epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, with P4 evaluated.
Character Area 18a: Chapel Point to Skegness	Hold the Line for epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, with P4 evaluated.
Character Area 18b: Skegness	Hold the Line for epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, with P4 evaluated.
Character Area 19: Seacroft to Gibraltar Point	Hold the line for all epochs along the entire frontage, P4 evaluated

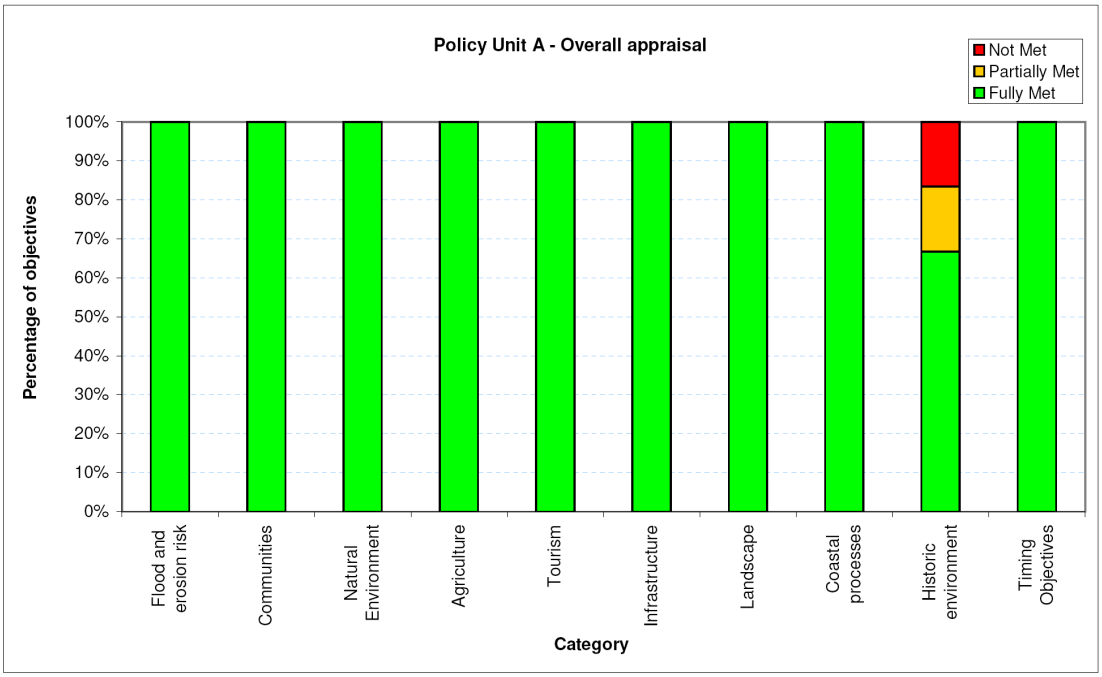
Summary of policies appraised by Character Area for Policy Package 4.3.

Character Area	Policy Appraised
Character Area 14: South of Humberston Fitties to Saltfleet	Hold the line for all epochs along the entire frontage, P3 evaluated
Character Area 15: Saltfleet Haven to Theddlethorpe St Helen	Hold the line for all epochs along the entire frontage, P3 evaluated

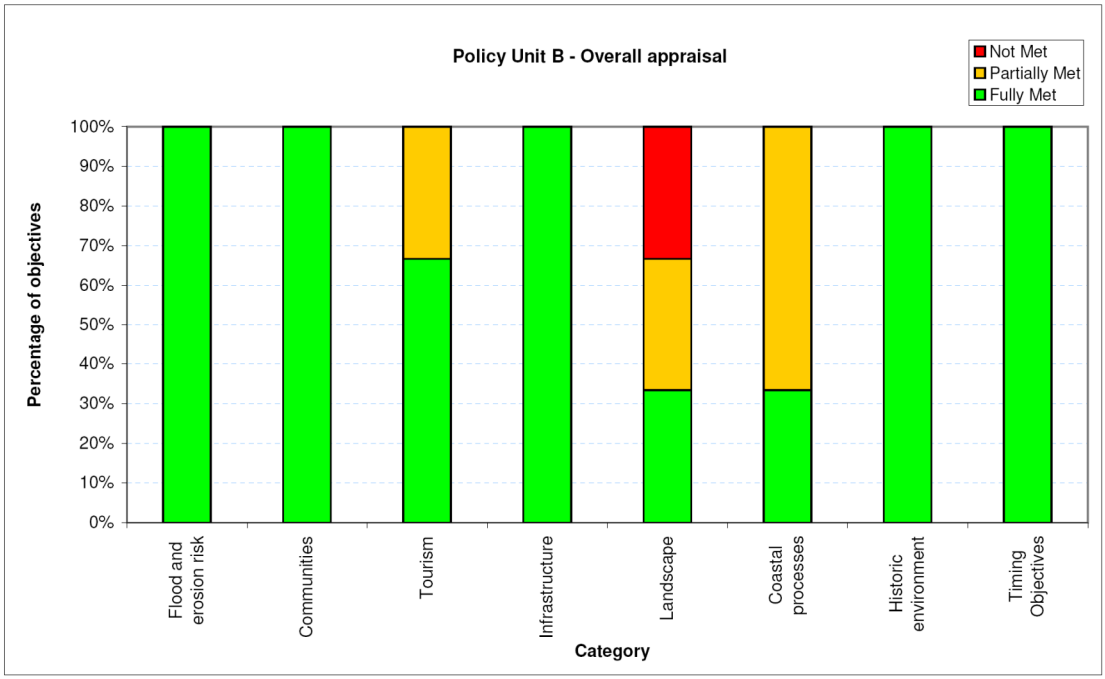
Character Area	Policy Appraised
Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)	Hold the line for all epochs along the entire frontage, P3 evaluated
Character Area 17: Sandilands to Chapel Point	Hold the line for all epochs along the entire frontage, P3 evaluated
Character Area 18a: Chapel Point to Skegness	Hold the line for all epochs along the entire frontage, P3 evaluated
Character Area 18b: Skegness	Hold the line for all epochs along the entire frontage, P3 evaluated
Character Area 19: Seacroft to Gibraltar Point	Hold the line for all epochs along the entire frontage, P3 evaluated

Graphical representation of assessment of the preferred policies

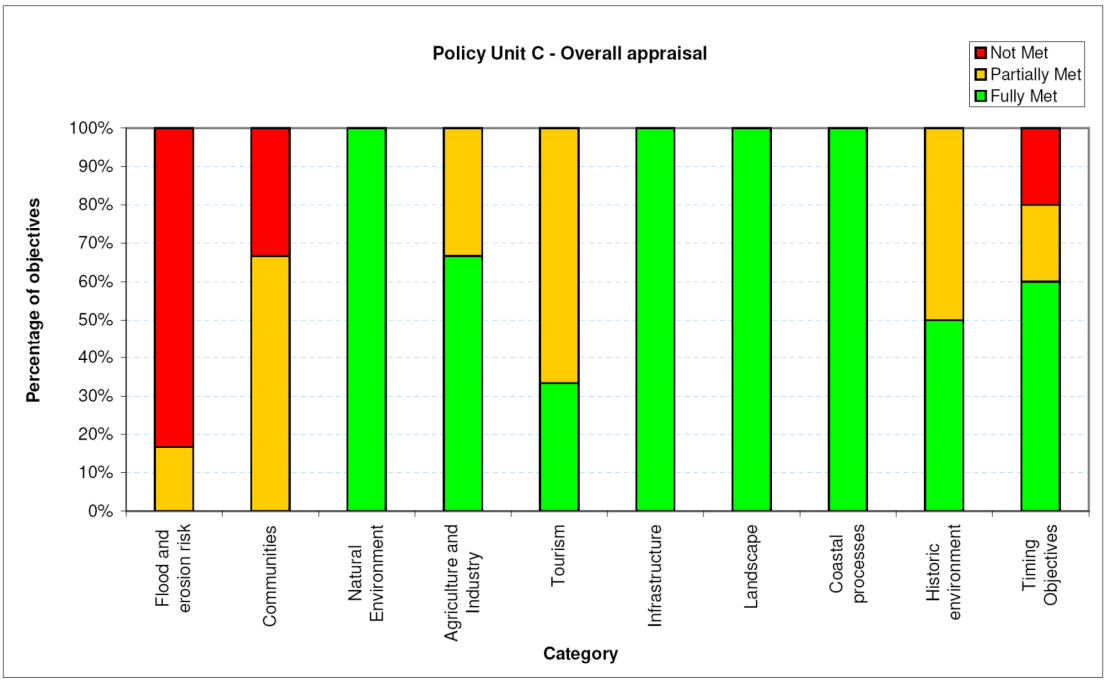
Policy Unit A – Flamborough Head to Sewerby



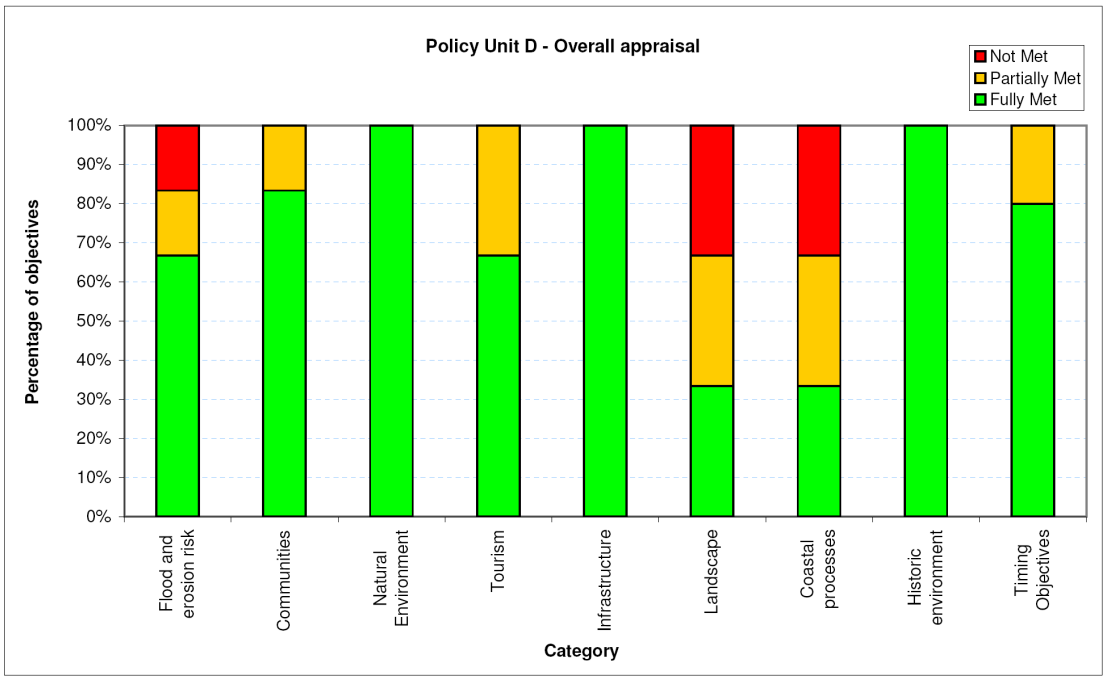
Policy Unit B – Bridlington to Hilderthorpe



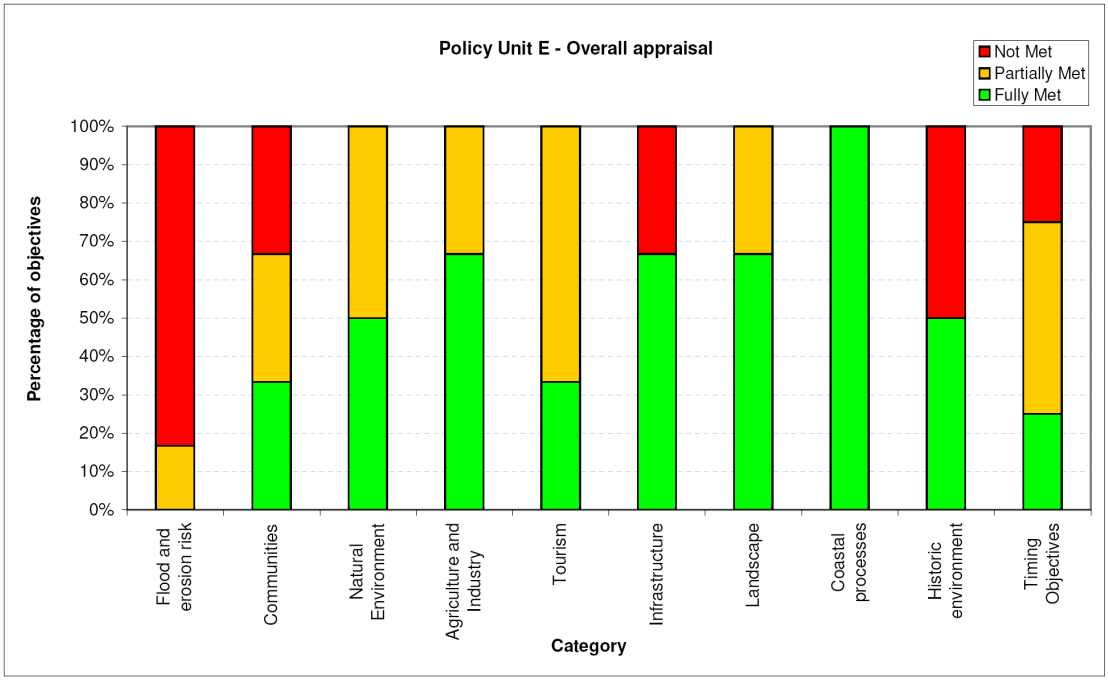
Policy Unit C – Wilsthorpe to Atwick



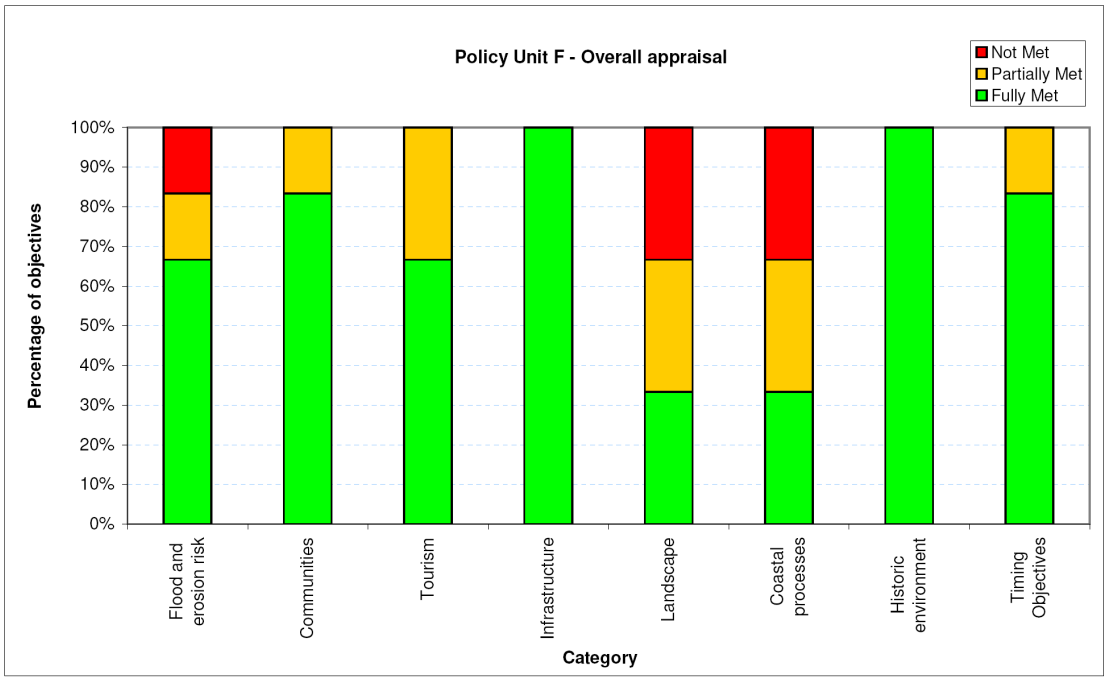
Policy Unit D – North Cliff to Hornsea Burton (Hornsea)



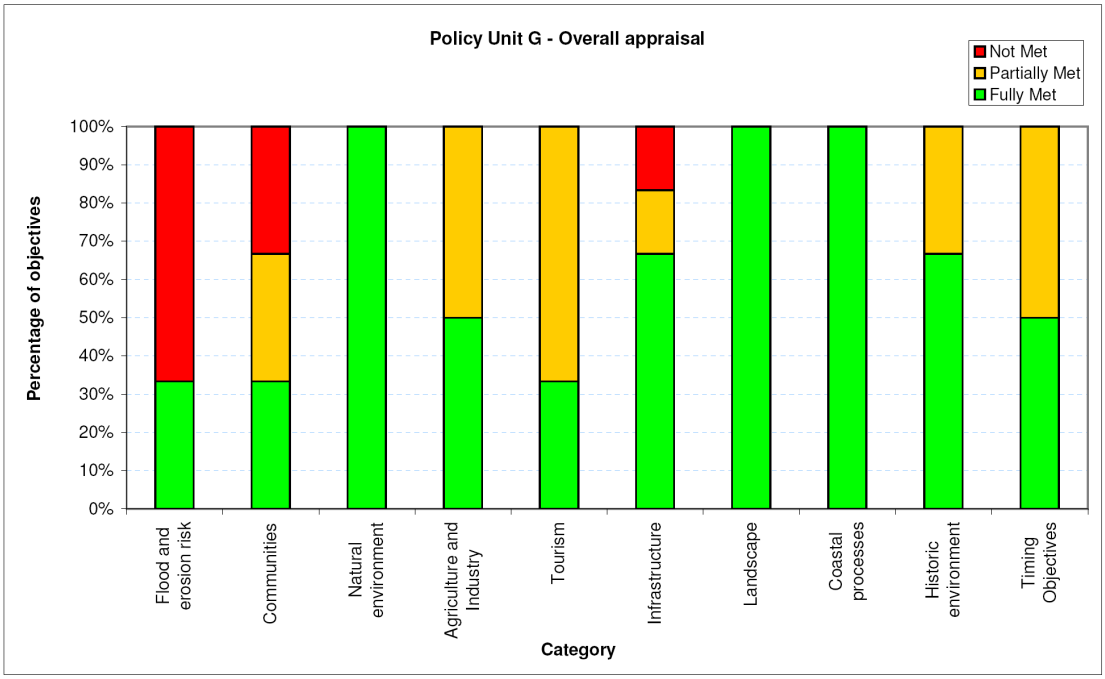
Policy Unit E – Rolston to Waxholme



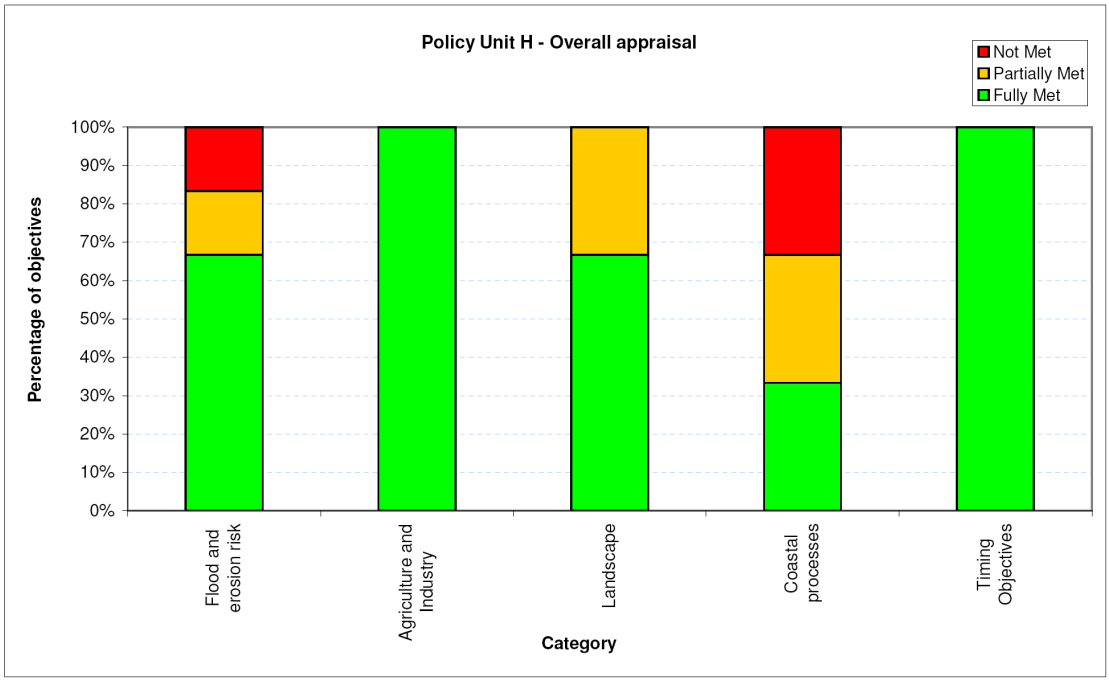
Policy Unit F – Owthorne to Hollym (Withernsea)



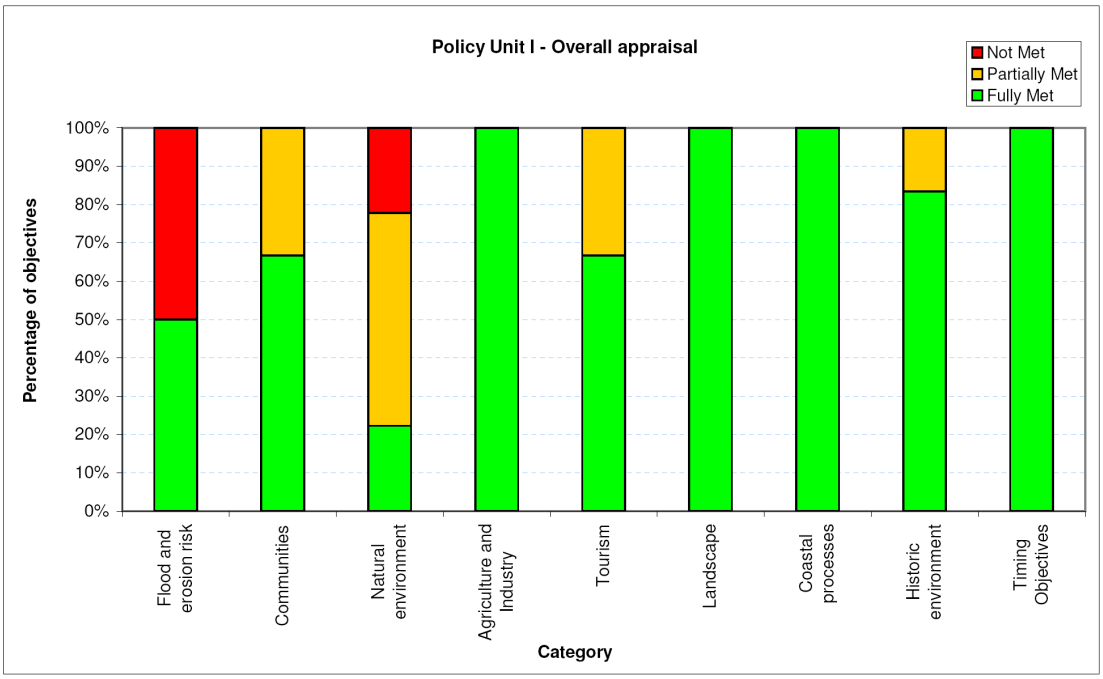
Policy Unit G – Hollym to Dimlington Cliffs



Policy Unit H – Dimlington to Easington Gas Terminals

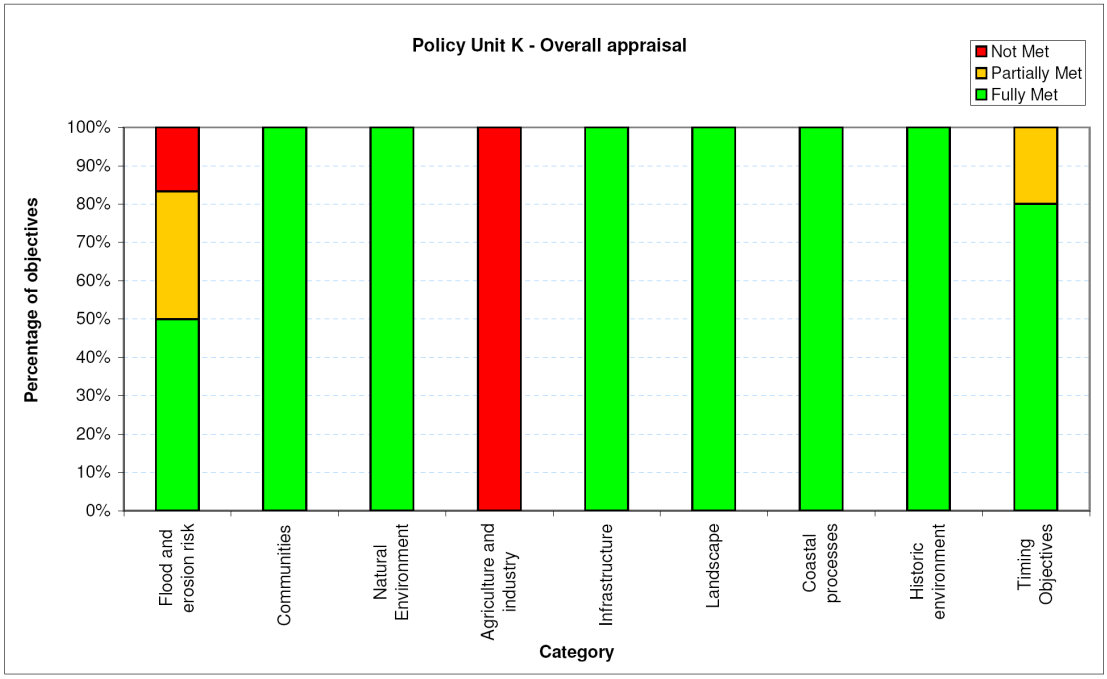


Policy unit I – Easington to Kilnsea

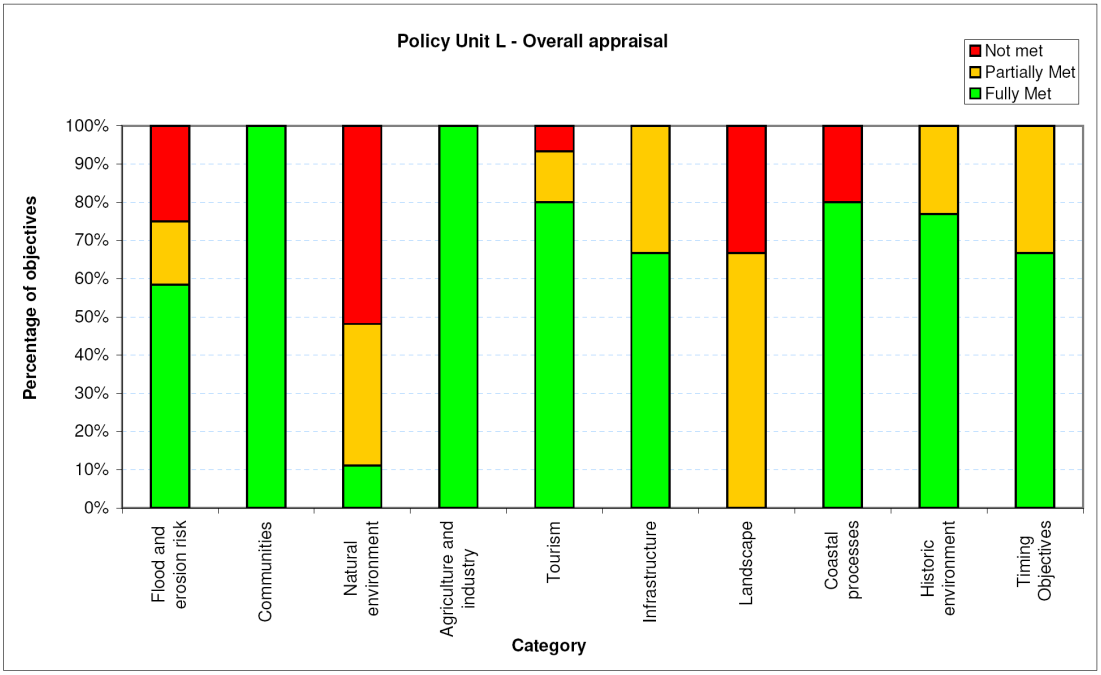


Policy Unit J – Kilnsea to Spurn Point

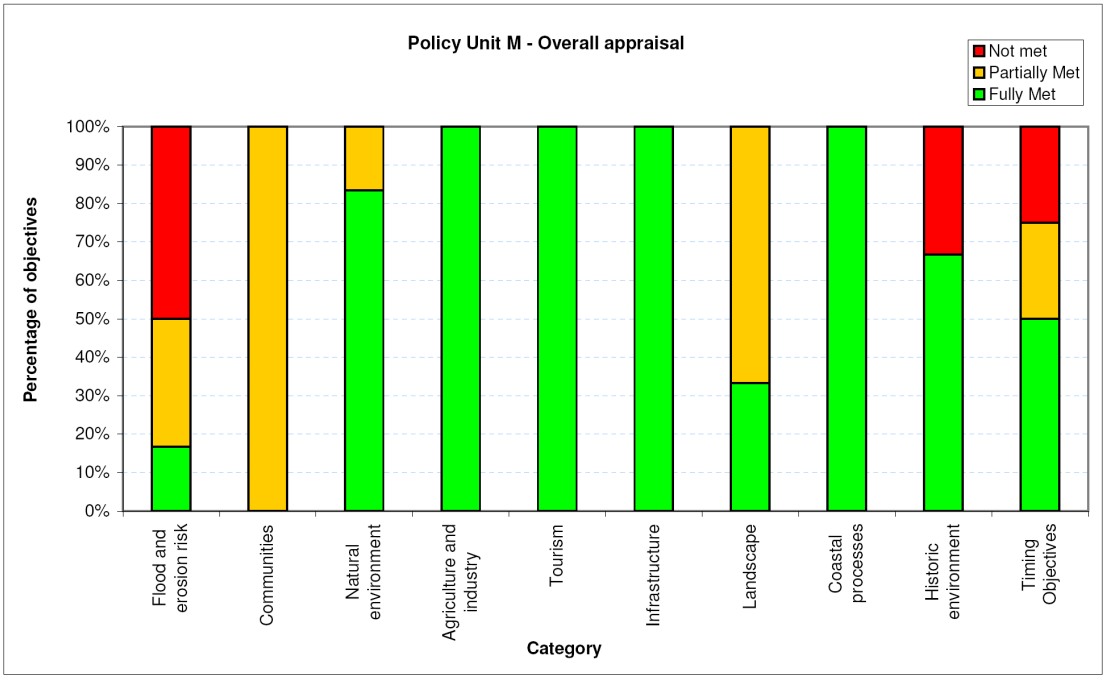
Policy unit K – Easington Road to Stone Creek



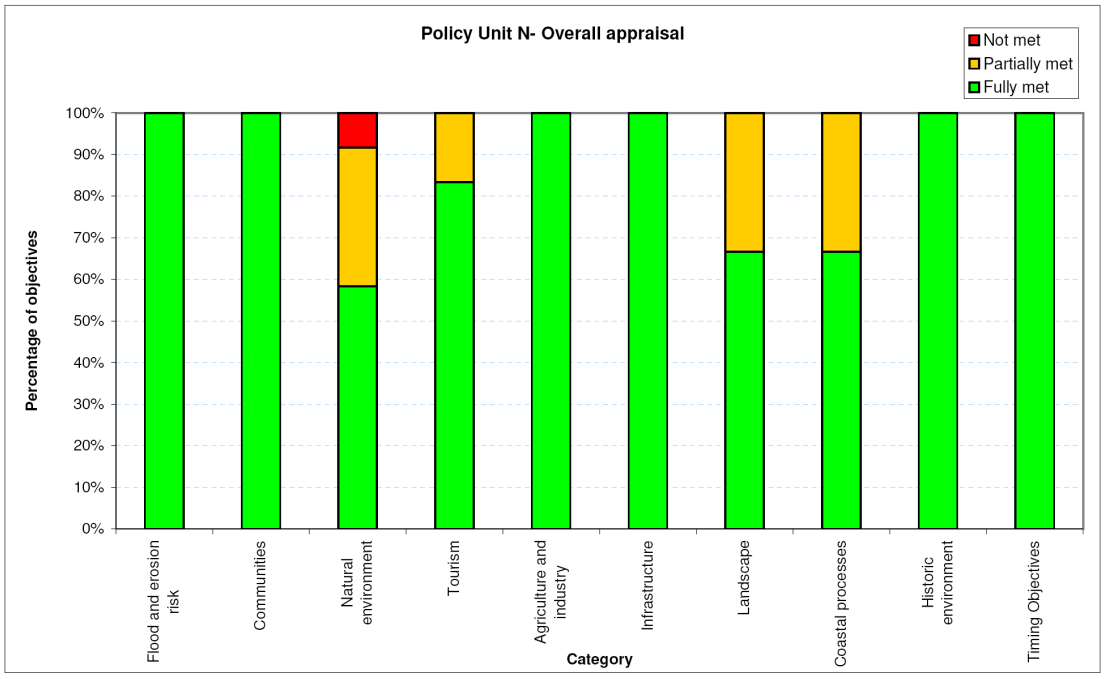
Policy Unit L – East Immingham to Cleethorpes



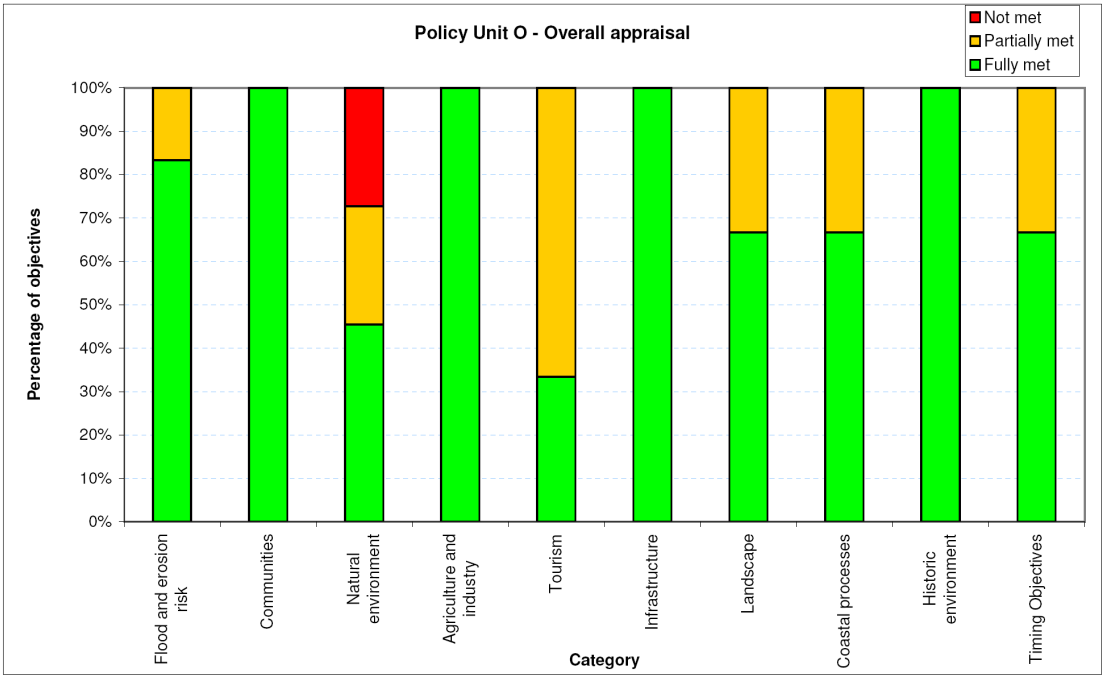
Policy Unit M – Humberston Fitties



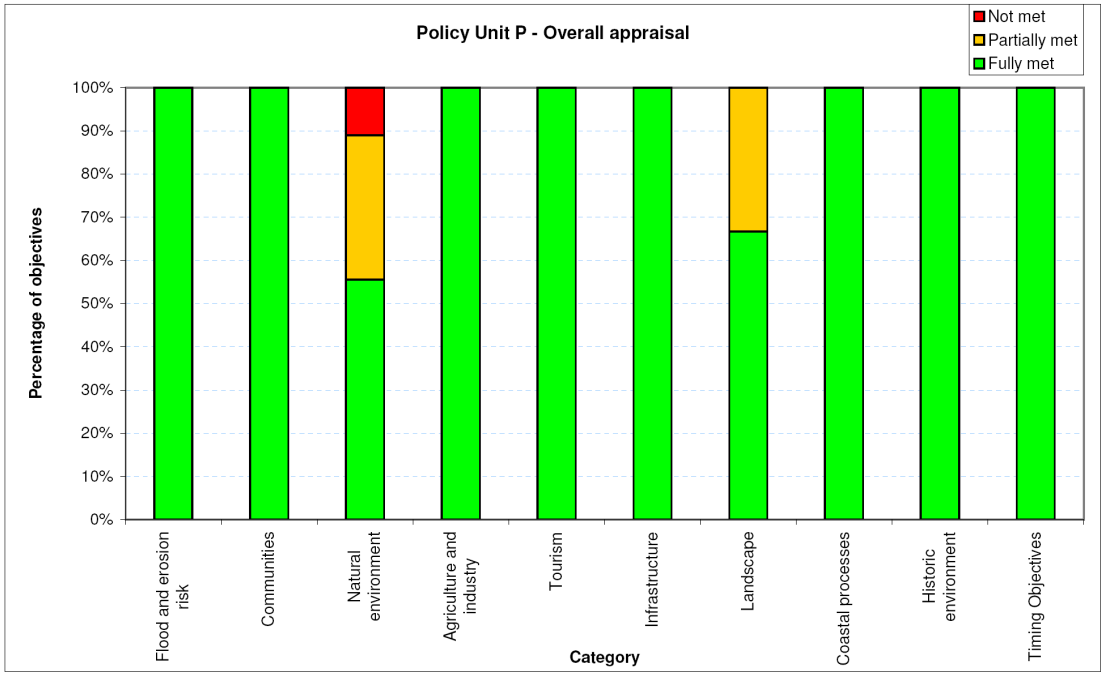
Policy Unit N – South of Humberston Fitties to Theddlethorpe St Helen



Policy Unit O – Viking Gas Terminal (Mablethorpe) to southern end of Skegness

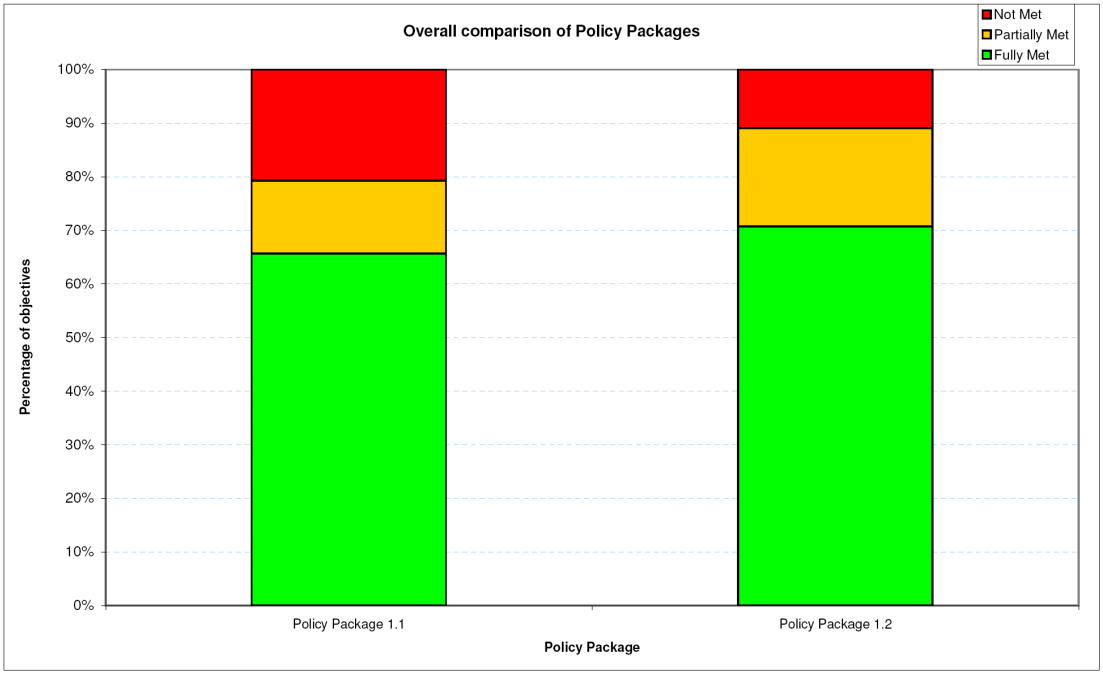


Policy Unit P – Seacroft to Gibraltar Point



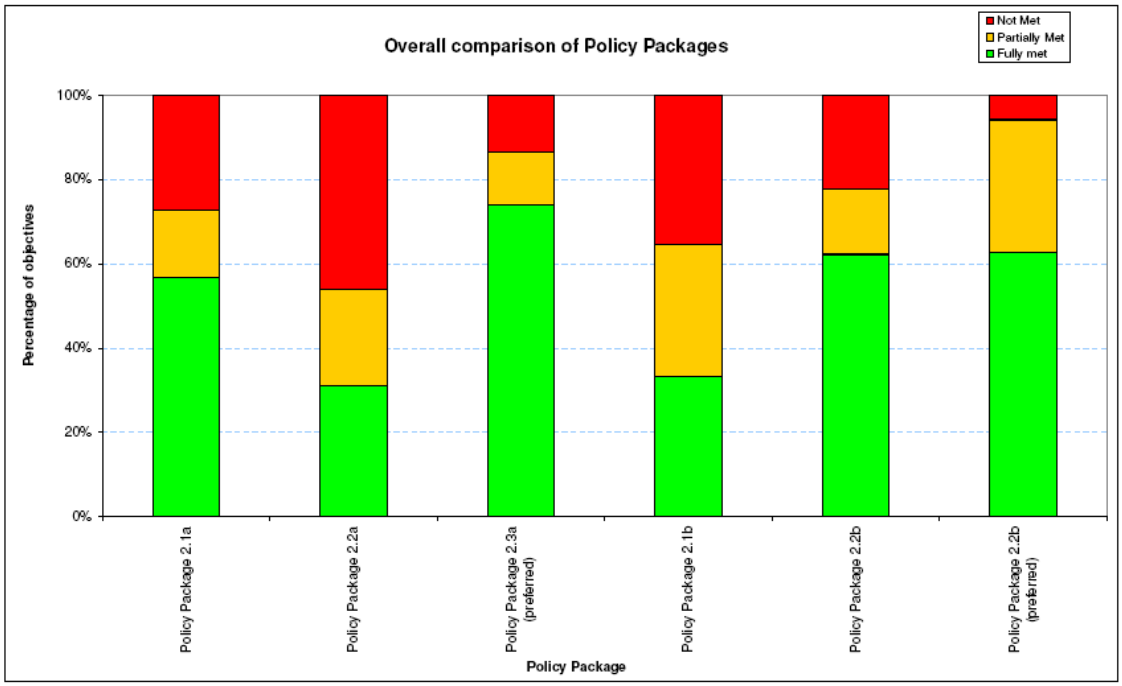
Graphical comparison of policy packages appraised

PDZ1 – Flamborough Head to Easington



Policy Package 1.1	Policy Package 1.2
For currently defended areas this would mean the continued maintenance of defences to prevent erosion. The present day standard of protection would also be maintained where flooding is an issue, by raising defences to counter sea level rise. For currently undefended areas, new defence structures would be required to prevent erosion and hold the cliff line at the present day location despite sea level rise. The only exception to this is in Character Area 1, where no alternative policy option to No Active Intervention was identified due to the lack of drivers, so this policy remained here.	For currently defended areas (Character Areas 2, 4, Mappleton in 5, 6 and 8) this would mean the continued maintenance of defences to prevent erosion. The present day standard of protection would also be maintained where flooding is an issue, by raising defences to counter sea level rise. Engineering works to manage outflanking and maintain protection to the towns may occur. A No Active Intervention policy was appraised for all currently undefended areas (Character Areas 1, 3, 5 (except Mappleton) and 7). This policy would allow for the continued functionality of the drains. This would involve the maintenance and set back, if required, of drain infrastructure such as outfalls and/or sluices. The private defences at Ulrome were assumed to deteriorate rapidly in epoch 1 and would cease to have any protection benefits in epoch 2. A focused policy appraisal for Mappleton was also undertaken separately investigating different policy options in epoch 3.

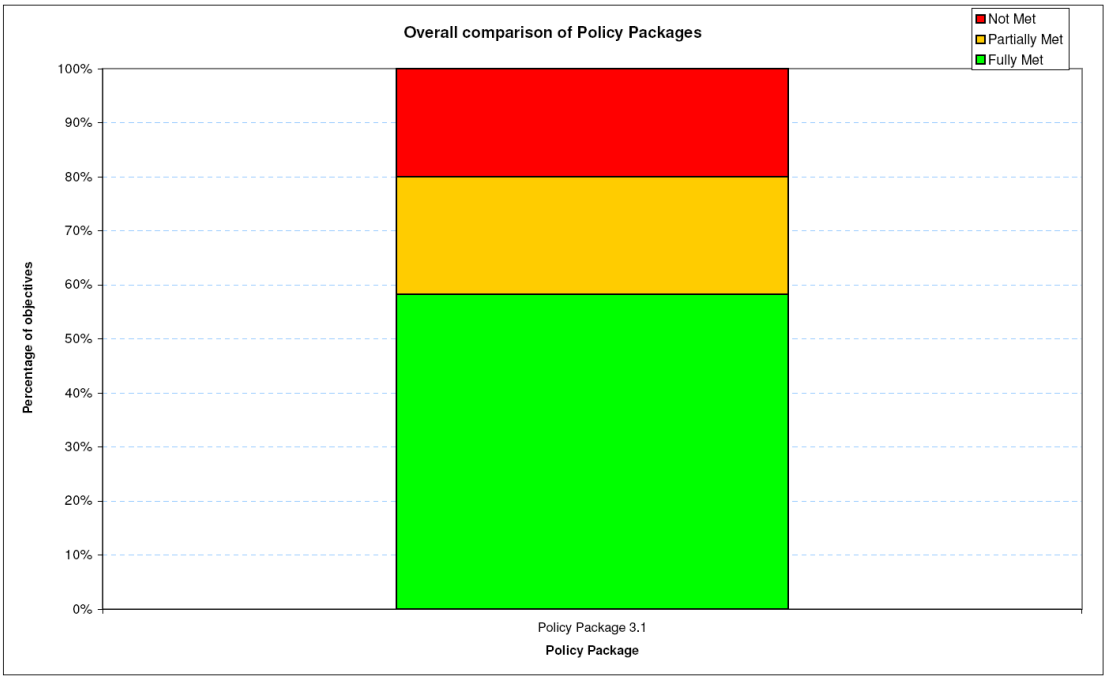
PDZ2 –Easington to Stone Creek



Policy Package 2.1a	Policy Package 2.2a	Policy Package 2.3a
All defence alignments in Character Areas 9 and 11 would be held for all epochs. Defences would need significant structural upgrades and improvements to undertake this intent as sea levels rise. Crest levels would need to be raised to maintain the standard of protection against flooding (P4).	All defence alignments in Character Areas 9 and 11 would be held for all epochs. Defences would need maintenance and upgrades. Crest levels would remain at present day elevations therefore allowing the standard of protection against flooding to fall as sea levels rise (P3).	The defences would be held in their current position with limited Managed Realignment. The overarching policy would be to Hold the Line and maintain the standard of flood protection in all 3 epochs (P4). To ensure sustainable flood defences, and meet the requirements of environmental legislation, limited Managed Realignment of defences was implemented. Any Managed Realignment of defences would not adversely affect property or known designated and significant historic environment assets.

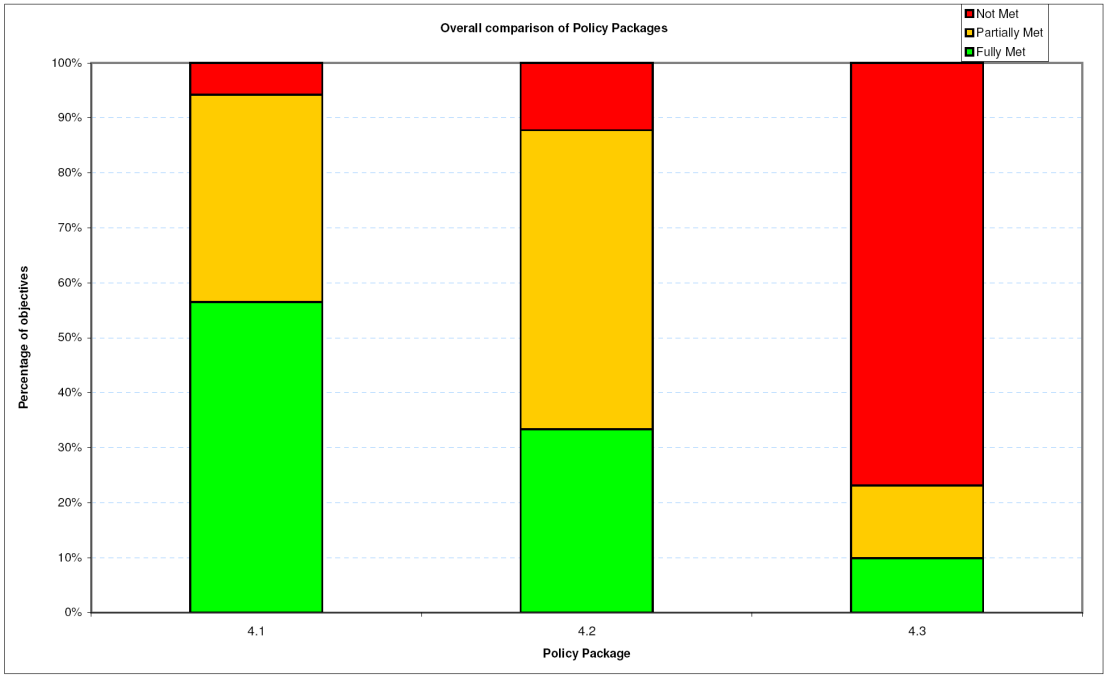
Policy Package 2.1b	Policy Package 2.2b	Policy Package 2.3b
Hold the Line for the entire frontage for all epochs. It is assumed that the barrier would be maintained in its current position. This would require the use of defences and coastal management to prevent erosion and barrier migration.	No Active Intervention for the entire frontage for all epochs. No human intervention to manage the coast would be undertaken, and existing defences would deteriorate under natural processes. The barrier would evolve under natural processes and if breaches occurred, there would be no human intervention to assist healing of the breaches.	The policy would effectively constitute Managed Realignment; however this would not mean Managed Realignment in its true sense by constructing new defences. The policy would be to allow the natural evolution and manage the alignment of the barrier, only intervening where necessary to assist the healing of breaches, if they occur to maintain access. This will be undertaken through generally softer engineering solutions, such as sediment nourishment, to maintain the integrity of the barrier. Road repairs and realignment may also be required to maintain access to the facilities at Spurn Point. Intervention may need to increase significantly over time to implement this policy.

PDZ3 – Immingham to Humberston Fitties



Policy Package 3.1
The defences will be held in their current position and their flood defence function will be maintained. Defences would prevent erosion and would be maintained and upgraded to continue the present standard of protection against flooding allowing for sea level rise (P4). Significant upgrades and defence maintenance is likely to be required as the foreshore would continue to lower and defences would come under increasing pressure. At Humberston Fitties the defences would be held in epoch 1 for the entire frontage with current crest heights maintained (P3). Managed realignment to the existing secondary floodbank

PDZ4 – South of Humberston Fitties to Gibraltar Point



Policy Package 4.1	Policy Package 4.2	Policy Package 4.3
The existing alignments of defences would be held, with increasing the management input to allow for the effects of sea level rise. The standard of protection would remain at a notional 1 in 200 year or similar.	The existing defence line would be held for epochs 1 and 2, increasing the management input to counter the effects of sea level rise. The standard of protection would remain at a notional 1 in 200 year or similar. For epoch 3, it was assumed that some of the defences may be supplemented by a new defence line. This new line would operate in conjunction with the existing defences to provide an unchanged standard of protection without the need to undertake the same extent of works (upgrading defences and beach nourishment) as is required for a single defence line under a hold the line policy. After epoch 3 (beyond the Shoreline Management Plan), the original defence line could be abandoned and the new line upgraded further.	The existing alignment of defences would be held, maintaining the management input and therefore not countering the effects of sea level rise. The standard of protection would fall from the notional 1 in 200 years or similar at present due to rising sea levels.

Preferred policy appraisal

Policy Package 1.2 (Flamborough Head to Easington)

Character Area	Policy Appraised
Character Area 1: Flamborough Head to Sewerby	No Active Intervention for all epochs along the entire frontage, but maintaining the access to, and functionality of, the RNLI Station at South Landing.
Character Area 2: Bridlington to Hilderthorpe	Hold the line for all epochs along the entire frontage, with a local Advance the Line policy during epoch 1 at the site of the proposed marina. P4 evaluated.
Character Area 3: Wilsthorpe to Atwick	No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains.
Character Area 4: North Cliff to Hornsea Burton (Hornsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character Area 5: Rolston to Waxholme	No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains. Local Hold the Line policy at Mappleton in all epochs, but also an alternative policy variation is appraised in a separate handout.
Character Area 6: Owthorne to Hollym (Withernsea)	Hold the line for all epochs along the entire frontage, P4 evaluated.
Character area 7: Hollym to Dimlington cliffs	No Active Intervention for all epochs along the entire frontage.
Character Area 8: Dimlington and Easington Gas terminals	Hold the line for all epochs along the entire frontage, P4 evaluated.

Character Area 1: Flamborough Head to Sewerby objectives for policy appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but maintaining the access to, and functionality of, the RNLI Station at South Landing.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		Erosion rates in this area are very slow and a No Active Intervention policy would not cause loss of property or environment		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The chalk cliffs have historically, and currently, form an effective defence line and would continue to provide protection despite slow erosion.		As epoch 1.		As epochs 1 and 2.
Communities						
Protect all settlements.		Due to slow erosion of the chalk cliffs, and the location of the settlements, there are no settlements at risk.		As epoch 1.		As epochs 1 and 2.
Natural Environment						
Maintain natural processes leading to the exposure of the Flamborough chalk cliffs and formation of caves for their geological interest.		A No Active Intervention policy would allow erosion to continue and maintain the natural processes leading to the chalk cliffs and associated features.		As epoch 1.		As epochs 1 and 2.
Maintain and where possible enhance the extent of Flamborough vegetated chalk cliff habitat.		Current processes allowed to continue so despite slow erosion, vegetated chalk cliffs would remain.		As epoch 1.		As epochs 1 and 2.
Maintain and where possible enhance the breeding sea bird colonies at Flamborough Head.		A No Active Intervention policy would maintain breeding seabird colonies as habitats would remain and there would be no interruption to breeding sites.		As epoch 1		As epochs 1 and 2.
Maintain and where possible enhance the extent and condition of subtidal chalk reef habitat around Flamborough Head.		A No Active intervention policy would maintain and enhance subtidal chalk reef habitat as erosion or cliffs leads to new reef exposure.		As epoch 1		As epochs 1 and 2.
Ensure there are no adverse impacts on the UK's internationally designated sites.		Natural processes allowed to continue under this policy so impact must be acceptable.		As epoch 1, but as erosion of the chalk cliffs accelerates slightly due to sea level rise, the extent of the internationally designated site may reduce minimally.		As epoch 2.
Agriculture						
Ensure that the impact on the UK's area of agricultural land is acceptable.		Erosion of cliff top fringes would occur, but no significant loss of agricultural land would occur in this epoch. Approximately 4 hectares of Grade 3 land would be at risk of erosion.		As epoch 1, but slight increase in erosion due to sea level rise. Approximately 15 hectares of Grade 3 land would be at risk of erosion.		Small losses of agricultural land would occur as a result of erosion. Approximately 39 hectares of Grade 3 land would be at risk of erosion.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		No Active intervention would allow a diverse tourism economy to continue.		As epoch 1.		As epoch 1 and 2.
Infrastructure						
Avoid interruption to the functioning of: the South Landing RNLI station; the fog signal station at Flamborough Head; sewage treatment facilities; and other key community services and utilities infrastructure.		This policy would ensure that access and functionality of the RNLI station at South Landing would be maintained. Other key community services and utilities infrastructure would be unADfected due to the slow erosion rate.		As epoch 1.		As epochs 1 and 2.

Character Area 1: Flamborough Head to Sewerby objectives for policy appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but maintaining the access to, and functionality of, the RNLI Station at South Landing.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		A general policy of No Active intervention would ensure the coastal landscape is maintained.		As epoch 1.		As epoch 1 and 2.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		A No Active Intervention policy would ensure coastal processes continue and sediment pathways are maintained.		As epoch 1.		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Buckden Dyke and Danes Dyke) from cliff erosion		This policy would result in the loss of or damage to approximately 7 records noted by RCZAs due to slow erosion of the cliffs.		This policy would result in the loss of or damage to approximately 10 records noted by RCZAs due to slow erosion of the cliffs.		This policy would result in the loss of or damage to approximately 16 records noted by RCZAs due to slow erosion of the cliffs. 2 listed buildings would also be at threat of erosion as well as 2 scheduled monuments.
Ensure coastal defence works do not threaten designated and significant historic environment assets		No new coastal defence works that would threaten designated or historic environment assets would be undertaken under this policy.		As epoch 1.		As epochs 1 and 2.

Timing Objectives Provide sufficient time, if necessary for;	**Score (all Epochs)**	**Explanation**
Community adaptation		Due to the slow erosion rate in this area it is considered that there would be sufficient time for communities to adapt.
Relocation / adaptation of sewage works and other key community services and utilities infrastructure		Due to the slow erosion rate in this area it is considered that there would be sufficient time to adapt or relocate infrastructure.
Research of archaeological features and ecological surveys		Due to the slow erosion rate in this area it is considered that there would be sufficient time for research and surveys.
Provision of recreational access to the foreshore.		Due to the slow erosion rate in this area it is considered that there would be sufficient time to provide access to the foreshore at all times.

Character Area 2: Bridlington to Hilderthorpe objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with a local Advance the Line policy during epoch 1 at the site of the proposed marina. P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		Hold the line P4 would maintain the standard of protection against flooding and would prevent erosion.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		Existing defences would be upgraded / maintained under this policy.		As epoch 1.		As epochs 1 and 2.
Communities						
Protect all settlements.		Hold the line P4 would ensure protection to settlements is maintained.		As epoch 1.		As epochs 1 and 2.
To maintain Bridlington as a viable town, seaside resort and regional commercial centre throughout the plan period.		Hold the line P4 would ensure Bridlington is maintained as a viable town, seaside resort and regional commercial centre.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		A Hold the Line policy would ensure a diverse tourism economy would be maintained.		As epoch 1, however some narrowing of beaches which form important tourist assets. Increasingly significant defence structures required under this policy would have some effect on the aesthetic appeal.		Some uncertainty, however there is the potential for beach loss. Increasingly significant defence structures would also be required. The tourism economy may need to adapt if current drivers (beaches etc.) are lost or narrow under this policy.
Infrastructure						
Avoid interruption to the functioning of the A165 and A614 and the rail network.		A Hold the Line policy would ensure the functioning of the A165 and A614.		As epoch 1		Epochs 1 and 2.
Avoid interruption to the functioning of: the Bridlington RNLI station; coastguard station; harbour; sewage treatment works; and other key community services and utilities infrastructure.		A Hold the Line policy would ensure the functioning of critical infrastructure.		As epoch 1		Epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The coastal landscape would be largely similar to that of the present day, however as sea levels rise, beaches may start to narrow.		Hold the Line would lead to coastal squeeze and narrowing and steepening of the beaches. Man made defences would remain and would become increasingly significant in size.		As epoch 2 with effects further exacerbated due to sea level rise.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		A Hold the Line policy would prevent the coastline from undergoing erosion, however longshore transport of sediment would still occur.		Longshore transport of sediment would be largely uninterrupted under this policy. Some interruption to sediment supplied from this area as defences prevent erosion of material as sea levels rise.		Potential for some interruption to sediment supplied to other frontages. Defences would continue to prevent erosion. Depending on the mechanisms used to carry out the policy, there may be some interruption to longshore transport processes.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Wilsthorpe DMV) from cliff erosion		A Hold the Line policy would ensure that significant and designated historic environment assets would be protected against erosion.		As epoch 1.		As epochs 1 and 2.

Character Area 2: Bridlington to Hilderthorpe objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with a local Advance the Line policy during epoch 1 at the site of the proposed marina. P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Ensure coastal defence works do not threaten designated and significant historic environment assets		No major coastal defence works would be required due to the residual life and satisfactory condition of defences at present.		Some improvements and additional defence works would be required under this policy. Approximately 6 records noted by the RCZAs could be at threat.		As epoch 2.

Timing Objectives Provide sufficient time, if necessary for;	Score (all Epochs)	Explanation
Community adaptation		If there is the requirement for community adaptation, there would be sufficient time.
Relocation of regional infrastructure, ensuring continued A-road and rail transport linking Bridlington to Hull and Scarborough,		Relocation of infrastructure would not be required under a Hold the Line policy.
Relocation / adaptation of sewage works and other key community services and utilities infrastructure.		Sufficient time would be available for adaptation of community services and utilities infrastructure under a Hold the Line policy if it is required.
Research of archaeological features and ecological surveys, and		If archaeological assets are at risk as defences need improving / building under a Hold the Line policy there would be sufficient time available for research.
Provision of recreational access to the foreshore.		Sufficient time would be available to provide recreational access to the foreshore under this policy, however if beaches narrow significantly or are lost, it may not be possible to maintain access.

Character Area 3: Wilsthorpe to Atwick objectives for policy appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		This policy would lead to erosion of the undefended cliffs along the majority of the frontage. Consequently it is likely that approximately 27 properties would be at risk of erosion. Caravans at the coastal fringes of the Holiday parks would also be at risk of erosion. The defences at Ulrome would continued to provide some protection benefits to the caravan site, but these would diminish over time. Flood risk at Barmston drain would continue to be managed.		As epoch 1, but the erosion rate would accelerate with sea level rise and the risk to people and property would increase in the undefended areas. It is likely that approximately 73 properties would be at risk of being lost to erosion by 2055. 3 boat compounds would also be at risk of erosion. The defences at Ulrome would have failed and erosion to the previously protected caravan park would occur.		Further properties would be at risk of erosion by 2105. Also all of the cliff top caravan parks would be affected by erosion.
Make effective use of existing man-made or natural defences.		The defences at Ulrome would continue to provide some protection benefits, however their effect would reduce over time as no maintenance would be carried out under No Active Intervention. The defences around Barmston drain may continue to be used effectively to maintain the functionality of the drain.		Defences at Ulrome would have failed and would no longer provide protection benefits. Existing defences around Barmston drain may continue to be utilised if required, however they are likely to require significant upgrades.		Current defences would no longer be used effectively.
Communities						
Protect all settlements.		Although this policy does not specifically protect any settlements, most of the main coastal villages (Wilsthorpe, Barmston, Ulrome, Skipsea East End and Atwick remain largely unaffected by erosion. The collection of houses seawards of the main village of Skipsea near the cliff edge would be at significant threat.		As epoch 1, except erosion begins to impinge on coastal parts of Wilsthorpe Atwick, Ulrome, East End and Skipsea.		As epoch 2 with further increase in risk to settlements as erosion accelerates.
Natural Environment						
Maintain natural processes relating to the exposure of glacial and post-glacial deposits at Skipsea.		No Active Intervention at Skipsea would maintain the natural erosion process leading to the exposure of the glacial and post glacial deposits at Skipsea.		As epoch 1.		As epochs 1 and 2.
Agriculture and Industry						
Maintain and enhance the viability of the area's gas storage and processing industrial capacity.		Although erosion occurs, the cliff retreat would not reach and affect the gas storage and processing facilities.		As epoch 1.		As epochs 1 and 2.
Protect as much grade 1 and 2 agricultural land as possible.		Despite a No Active Intervention policy for the majority of the frontage, there is no grade 1 or 2 agricultural land at threat from erosion in epoch 1.		Approximately 1 hectare of grade 2 agricultural land would be at threat of being lost due to erosion during this epoch.		By 2105, further grade 2 agricultural land would be at risk of being lost due to erosion under this policy.
Ensure that the impact on the UK's area of agricultural land is acceptable.		Some minor loss of around 37 hectares of agricultural land as the cliffs erode under a No Active Intervention policy for the majority of the frontage.		As epoch 1, however rate of loss would increase slightly with accelerating erosion. Approximately 113 hectares of agricultural land potentially at risk of erosion by 2055.		As epoch 2, however rate of loss would increase with accelerating erosion leading to loss of more agricultural land by 2105.

Character Area 3: Wilsthorpe to Atwick objectives for policy appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Despite some interruption due to erosion, No Active Intervention along much of the frontage would allow a diverse tourism economy continue as caravan parks and chalets can roll back, and the beaches in front of the eroding cliffs would remain.		As epoch 1, but beach width could begin to reduce with sea level rise. There would be increasing pressure for rollback of caravan parks.		As epoch 2, but further erosion rate increases would accelerate the rollback and beaches could steepen and narrow as sea levels rise.
Infrastructure						
Avoid interruption to the A165.		Despite erosion of cliffs under a No Active Intervention Scenario the A165 remains unaffected due sufficient distance from the current shoreline.		As epoch 1		As epoch 1 and 2.
Avoid interruption to the functioning of: the natural gas storage and processing facilities north of Atwick; the Barmston main drain; and other key community services and utilities infrastructure.		Gas storage and processing facilities north of Atwick would be unaffected by erosion under a No Active Intervention Policy in this area. Functionality of Barmston Main Drain would be uninterrupted.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible, improve the quality of the coastal landscape.		Natural processes creating the coastal landscape allowed to continue under a No Active Intervention policy for the majority of the frontage.		As epoch 1.		As epochs 1 and 2.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Natural coastal processes allowed to continue under a No Active Intervention policy for the majority of the frontage. This would provide sediment to supply downdift frontages.		As epoch 1.		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Earl's Dyke and Withow Mere) from cliff erosion		A No Active Intervention policy along the majority of the frontage would result in approximately 26 records noted by RCZAS being affected.		A No Active Intervention policy would result in approximately 55 records noted by RCZAS being affected.		A No Active Intervention policy along the majority of the frontage would result in approximately 88 Records noted by RCZAS being affected.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Any new coastal defences required to maintain the functionality of the Barmston drain would not threaten any significant historic environment assets.		As epoch 1.		As epochs 1 and 2.

Character Area 3: Wilsthorpe to Atwick objectives for policy appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains.

Objective		Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
		Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	Provide sufficient time, if necessary for;		**Explanation**				
Community adaptation			People and property in close proximity to the current shoreline near Skipsea would have little time to adapt as the erosion threat here is within epoch 1. There would be some time available for caravan parks to roll back as required. This policy would generally allow some time for other communities to adapt, however the erosion rate would accelerate with sea level rise, meaning community adaptation time would reduce over the epochs.				
Relocation of regional infrastructure, ensuring continued A-road transport links between Barmston and Bridlington.			The A-road is sufficiently far from the current shoreline position meaning there is sufficient time for relocation if required.				
Relocation / adaptation of sewage works and other key community services and utilities infrastructure.			Generally there would be sufficient time for adaptation / relocation of key communities services and utilities infrastructure, although the threat of unpredictable episodic erosion events may put some assets close to the shoreline at risk.				
Research of archaeological features and ecological surveys			Sufficient time available.				
Provision of recreational access to the foreshore.			Generally there would be sufficient time to ensure access to the foreshore is maintained despite the eroding cliffs. Some losses may occur during episodic erosion events which are unpredictable.				

Character Area 4: North Cliff to Hornsea Burton (Hornsea) objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		Hold the line P4 would prevent erosion and maintain the standard of protection against flooding to permanent property. Some caravans may be at risk of erosion near the boundaries of the Character Area.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		Existing defences would continue to be used effectively and would be upgraded / maintained under a Hold the Line policy		Although the current defences would still form the basis of the defence line, considerable improvements, additions and maintenance would be required under this policy. Defences may need extended if required to protect settlements.		New additional defences would largely superseded current defences by this time.
Communities						
Protect all settlements.		Hold the line P4 would ensure protection to settlement is maintained.		As epoch 1.		As epochs 1 and 2.
To maintain Hornsea as a viable town, seaside resort and regional commercial centre throughout the plan period.		Hold the line P4 would ensure Hornsea is protected as a viable town, seaside town and regional commercial centre.		As epoch 1, however narrowing of the beaches in front of the defences would reduce the appeal of Hornsea as a seaside resort.		As epochs 1 and 2 but with further narrowing or complete loss of beaches in front of the defences due to coastal squeeze under this scenario would reduce the appeal of Hornsea as a seaside resort.
Natural Environment						
Manage the functioning of Stream Dyke which drains Hornsea Mere and maintains the freshwater habitats.		The functioning of Stream Dyke would remain under a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.
Maintain and if possible enhance the extent and condition of the freshwater habitats of Hornsea Mere, until this becomes environmentally unsustainable.		A Hold the Line policy would ensure that the freshwater habitats of Hornsea Mere were maintained in extent and quality.		As epoch 1, however as sea levels rise relative to the Mere the potential for marine inundation via Stream Dyke would increase.		As epoch 2, with further increase in potential for marine inundation of the freshwater habitats as sea levels rise.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		A Hold the Line policy would allow a diverse tourism economy to be maintained.		As epoch 1, but as sea levels rise coastal squeeze would increase and the beaches that provide an important tourism driver would narrow and reduce in extent.		As epochs 1 and 2, but high defences would be required and this would begin to impact upon the coastal views from the town. The significant reduction or complete loss of beaches in front of the defences would occur as sea level rise increases the problem of coastal squeeze.
Infrastructure						
Avoid interruption to the functioning of the B1244 and B1242 as key transport links,		The B1244 and B1242 would be uninterrupted by a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of: the sewage treatment works; Stream Dike; and other key community services and utilities infrastructure.		A Hold the Line policy would ensure the continued functioning of sewage treatment works, Stream Dyke and other key community services and utilities.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible enhance the quality of the coastal landscape.		A Hold the line policy has shaped the current landscape, this policy is continued and the landscape would remain similar to that of the present day over this epoch.		As epoch 1, but narrowing and loss of beaches would occur due to coastal squeeze and hard structures would become increasingly prominent features on the landscape.		As epoch 2 with further reduction in coastal landscape quality due to coastal squeeze, beach narrowing, and increasingly significant defence structures.

Character Area 4: North Cliff to Hornsea Burton (Hornsea) objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		A Hold the Line policy would cause some slight interruption to sediment supplied to other frontages as defences would prevent the coastline from undergoing erosion. The longshore transport of sediment would still occur this maintaining the transport of sediment from updrfit to downdrift areas.		There would be an increase in risk of interruption to sediment supplied to other frontages as erosion of adjacent areas continues, and erosion in this area is prevented. Depending on the mechanisms used to carry out this policy, there may be some interruption to longshore transport of sediment through the area. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.		Interruption to processes supplying sediment to other frontages would occur. Defences would continue to prevent erosion. Depending on the mechanisms used to carry out the policy, there may be some significant interruption to longshore transport processes carrying sediment through this area, from updrift to downdrift frontages. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion		A Hold the Line policy would ensure that significant and designated historic environment assets would be protected against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Due to the current condition of defences, minimal Improvements and additions to defence structures would be required along the frontage and therefore threat to historic environment assets limited.		Increasing size and maintenance of structures would be required as sea levels rise and may increase threat to significant historic environment assets. Approximately 5 Records noted by RCZAS could potentially be at threat.		As epoch 2, with further threat to assets as defences need increasing levels of maintenance, improvements and additional structures. Approximately 5 Records noted by RCZAS could potentially be at threat.

Timing Objectives Provide sufficient time, if necessary for;	**Score (all Epochs)**	**Explanation**
Community adaptation		As Hold the Line policy is continued it is unlikely that adaptation would be necessary, however there would be sufficient time if required.
Changes of flood risk management practices		Changes to flood risk management practices could be necessary in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.
Relocation / adaptation of sewage works and other key community services and utilities infrastructure.		Sufficient time would be available for adaptation of community services and utilities infrastructure under a Hold the Line policy if it is required.
Research of archaeological features and ecological surveys		If archaeological assets are at risk as defences need improving / building under a Hold the Line policy there would be sufficient time available for research.
Provision of recreational access to the foreshore		Sufficient time would be available to provide recreational access to the foreshore under this policy, however if beaches narrow significantly or are lost, it may not be possible to maintain access.

Character Area 5: Rolston to Waxholme objectives for appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains. Local Hold the Line policy at Mappleton in all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		This policy would lead to erosion of the undefended cliffs along the majority of the frontage. Consequently it is likely that approximately 10 properties would be at risk of erosion. Farm buildings and holiday park assets could also be at risk. Flood risk around Tunstall drain would continue to be managed.		As epoch 1, but the erosion rate would accelerate with sea level rise and the area and number of people at risk would increase in the undefended areas. It is likely that approximately 32 properties would be at risk of being lost to erosion. Farm buildings and holiday park assets could also be at risk.		Further properties would be at risk of erosion by 2105. Also cliff top caravan parks would be affected by erosion. Farm buildings and holiday park assets could also be at risk.
Make effective use of existing man-made or natural defences.		This policy would make use of, and incorporate, the existing defences at Mappleton as part of the local Hold the Line policy. However, the current defences have a relatively short residual life and so new more significant structures may be required. The defences around Tunstall drain may continue to be used effectively to maintain the functionality of the drain.		As epoch 1, but as sea level rise and erosion accelerates, there would be increasing need for significant defence improvements and additional new defences to Hold the Line at Mappleton. Existing defences around Tunstall drain may continue to be utilised if required, however they are likely to require significant upgrades.		Existing defences would have been entirely superseded with new defences required to Hold the Line at Mappleton.
Communities						
Protect all settlements.		This policy would protect Mappleton. Other coastal settlements would not be specifically protected, but the integrity of all of the main coastal villages (Rolston, Aldbrough, Mount Pleasant, Waxholme, Grimston, Hilston, Great Cowden and Tunstall) would remain largely unaffected except for some houses in very close proximity to the clifftop.		As epoch 1, but the coastal fringes of an increasing number of settlements would be at risk of erosion as sea level rise accelerates cliffs retreat on the undefended sections. Most notably, Great Cowden, Mount Pleasant, Grimston, Waxholme and East Newton at threat or partially at threat of erosion.		As epoch 2 with further increase in risk to the coastal villages, with Great Cowden, Mount Pleasant, Grimston, Waxholme and East Newton at threat of erosion.
Natural Environment						
Maintain natural processes relating to the submarine forest at Tunstall		This policy would largely allow natural coastal processes to continue in this area.		As epoch 1.		As epochs 1 and 2.
Maximise opportunities for habitat creation around coastal realignment at Tunstall Drain.		Tunstall drain would remain functional which may or may not provide opportunities for habitat creation.		As epoch 1.		As epochs 1 and 2.
Agriculture and Industry						
Protect as much grade 1 and grade 2 land as possible		No loss of grade 1 or 2 agricultural land would occur under this policy, as no agricultural land of this classification is at risk.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable		Some loss of approximately 72 hectares of agricultural land as the cliffs erode under a No Active Intervention policy for the majority of the frontage.		As epoch 1, however rate of loss would increase slightly with accelerating erosion. Approximately 200 hectares of agricultural land potentially at risk of erosion by 2055.		As epoch 2, however rate of loss would increase with accelerating erosion leading to loss of more agricultural land by 2105.

Character Area 5: Rolston to Waxholme objectives for appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains. Local Hold the Line policy at Mappleton in all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Despite some interruption due to erosion, No Active Intervention would allow a diverse tourism economy to continue as caravan parks and chalets can roll back, and the beaches in front of the eroding cliffs would remain.		As epoch 1, but beach width could begin to reduce with sea level rise. There would be increasing pressure for rollback of caravan parks.		As epoch 2, but further erosion rate increases would accelerate the rollback and beaches could steepen and narrow as sea levels rise.
Infrastructure						
Avoid interruption to the functioning of the drainage network including; Tunstall, Cowden, and East Newton drains.		The drains would still function under this policy. Tunstall drain would remain uninterrupted.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of: the natural gas storage facility; Cowden Parva MOD site; sewage treatment works; B1242, and other key community services and utilities infrastructure.		Generally key community services and utilities infrastructure including the Natural Gas Storage facility and sewage treatment works would be unaffected by erosion under a No Active Intervention policy as these assets are sufficiently far from the current shoreline. A narrow strip of Cowden Parva MOD land near the cliffline would be at threat of erosion.		The functioning of the B1242 would be at significant threat of interruption due to erosion north of Mappleton. There would also increasing threat to MOD land as erosion rate accelerates and cliffs retreat further inland. The Natural Gas Storage facility would be unaffected by erosion under a No Active Intervention policy as it is sufficiently far from the current shoreline.		As epoch 2, with further increase in threat to MOD land.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		Natural processes creating the coastal landscape largely allowed to continue under a No Active Intervention policy for the majority of the frontage.		As epoch 1, but with slight impacts at Mappleton due to the local Hold the Line policy. Beaches would narrow here and defences would become increasingly significant.		As epochs 1 and 2, with further local negative impacts due to a Hold the Line policy at Mappleton.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Natural coastal processes allowed to continue under a No Active Intervention policy for the majority of the frontage. This would provide sediment to supply downdift frontages.		As epoch 1, but as defended area at Mappleton begins to protrude in relation to the undefended frontages, some slight interruption to longshore coastal processes would occur.		As epoch 2, with further potential for longshore interruption due to protrusion of defended area at Mappleton relative to eroding non defended areas.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Great and Little Cowden DMV's and Ringbrough WW2 features) from cliff erosion		Under a No Active Intervention policy along the majority of the frontage approximately 27 records noted by RCZAS would be affected. The two moated sites that are located 520m north of Grimston Garth which is a Scheduled Monument would also be at risk of damage from erosion. The WW2 features at Ringbrough would be eroded.		As epoch 1, but number of records noted by RCZAS would increase to approximately 50 as sea level rise causes erosion to accelerate. The Scheduled Monument of two moated sites 520m north of Grimston Garth would receive further damaged due to erosion.		As epoch 2, but upto approximately 68 assets potentially at risk as erosion as cliffs retreat further inland. Significant damage and loss to the Scheduled Monument of the two moated sites 520m north of Grimston Garth.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		No coastal defence works would be undertaken on the majority of the frontage. New coastal defence upgrades or replacement would be required at to maintain a policy of Hold the Line at Mappleton, however these works would pose no threat to any significant historic environment assets.		As epoch 1.		As epochs 1 and 2.

Character Area 5: Rolston to Waxholme objectives for appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage, but allowing for the continued functionality of the drains. Local Hold the Line policy at Mappleton in all epochs.

Objective		Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
		Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	Provide sufficient time, if necessary for;	--	**Explanation**				
Community adaptation			No Active intervention is the current policy along much of this frontage and erosion of the cliffs already occurs. Some people and property would be at threat of erosion in epoch 1. Erosion rate would accelerate with sea level rise, meaning community adaptation time would reduce over the epochs.				
Relocation / adaptation of the sewage works, MOD use of the foreshore, B1242 and other key community services and utilities infrastructure.			There would be some time for adaptation / relocation of key communities services and utilities infrastructure. The B1242 which connects Mappleton and Hornsea is at significant risk of erosion in epoch 2, so there would be some time available to relocate this road.				
Research of archaeological features and ecological surveys			Sufficient time available.				
Provision of recreational access to the foreshore			Generally there would be sufficient time to ensure access to the foreshore is maintained despite the eroding cliffs. Some losses may occur during episodic erosion events which are unpredictable.				

Character Area 6: Owthorne to Hollym (Withernsea) objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		Hold the line P4 would maintain the standard of protection against flooding and would prevent erosion.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		Existing defences would be upgraded / maintained under a Hold the Line policy		Although the current defences would still form the basis of the defence line, considerable improvements, additions and maintenance would be required under this policy.		New additional defences would largely superseded current defences by this time.
Communities						
Protect all settlements.		Hold the line P4 would ensure protection to settlements is maintained.		As epoch 1.		As epochs 1 and 2.
To maintain Withernsea as a viable town, seaside resort and regional commercial centre throughout the plan period.		Hold the line P4 would ensure Withernsea is protected and maintained as a viable town, seaside town and regional commercial centre.		As epoch 1 although narrowing of the beaches in front of the defences would reduce the appeal of Withernsea as a seaside resort.		As epoch 2 but with further narrowing or complete loss of beaches in front of the defences due to coastal squeeze under this scenario would reduce the appeal of Withernsea as a seaside resort.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		A Hold the Line policy would allow a diverse tourism economy to be maintained.		As epoch 1, but as sea levels rise coastal squeeze would increase and the beaches that provide an important tourism driver would narrow and reduce in extent.		As epochs 1 and 2, but high defences would be required and this would begin to impact upon the coastal views from the town. The significant reduction or complete loss of beaches in front of the defences would occur as sea level rise increases the problem of coastal squeeze.
Infrastructure						
Avoid interruption to the functioning of the A1033.		The A1033 would be uninterrupted by a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of: the sewerage infrastructure; the Withernsea RNLI station; the Withernsea coastguard station; and other key community services and utilities infrastructure.		A Hold the Line policy would ensure the continued functioning of sewage treatment works, the RNLI station, The coastguard station and other key community services and utilities.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		A Hold the line policy has shaped the current landscape, this policy is continued and the landscape would remain similar to that of the present day over this epoch.		As epoch 1, but further narrowing and loss of beaches due to coastal squeeze and the need for more significant defence structures.		As epochs 1 and 2 with further reduction in coastal landscape quality due to coastal squeeze and increases in defence structures.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		A Hold the Line policy would cause some slight interruption to sediment supplied to other frontages as defences would prevent the coastline from undergoing erosion. The longshore transport of sediment would still occur this maintaining the transport of sediment from updrfit to downdrift areas.		There would be an increase in risk of interruption to sediment supplied to other frontages as erosion of adjacent areas continues, and erosion in this area is prevented. Depending on the mechanisms used to carry out this policy, there may be some interruption to longshore transport of sediment through the area. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.		Interruption to processes supplying sediment to other frontages would occur. Defences would continue to prevent erosion. Depending on the mechanisms used to carry out the policy, there may be some significant interruption to longshore transport processes carrying sediment through this area, from updrift to downdrift frontages. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.

Character Area 6: Owthorne to Hollym (Withernsea) objectives for appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Noah's Wood) from cliff erosion		A Hold the Line policy would ensure that significant and designated historic environment assets would be protected against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Due to the current condition of defences, minimal Improvements and additions to defence structures would be required along the frontage and therefore there would be no threat to historic environment assets.		Increasing size and maintenance of structures would be required as sea levels rise under P4 and this would increase threat to significant historic environment assets. Approximately 5 records noted by RCZAS could potentially be at risk.		As epoch 2, with further threat to assets as defences need increasing levels of maintenance, improvements and additional structures under P4. Approximately 5 records could potentially be at risk.

Timing Objectives Provide sufficient time, if necessary for;	**Score (all Epochs)**	**Explanation**
Community adaptation		As Hold the Line policy is continued it is unlikely that adaptation would be required, however there would be sufficient time if required.
Changes of flood risk management practices		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.
Relocation of regional infrastructure, ensuring continued A road transport links between Withernsea and Hull.		Relocation / adaptation of regional infrastructure would not be required under a Hold the Line policy.
Relocation / adaptation of sewage works and other key community services and utilities infrastructure.		Sufficient time would be available for adaptation of community services and utilities infrastructure under a Hold the Line policy if it is required.
Research of archaeological features and ecological surveys		If archaeological assets are at risk as defences need improving / building under a Hold the Line policy there would be sufficient time available for research.
Provision of recreational access to the foreshore.		Sufficient time would be available to provide recreational access to the foreshore under this policy, however if beaches narrow significantly or are lost, it may not be possible to maintain access.

Character area 7: Hollym to Dimlington cliffs objectives for appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		Despite a No Active Intervention policy which would lead to erosion of the cliffs, there are no people and people and property that would be at risk in this epoch.		Erosion of the cliffs would continue, and the rate would accelerate with sea level rise. Approximately 5 properties are likely to be at risk of being lost to erosion by 2055.		Accelerating rate of erosion due to sea level. Further properties are likely to be at risk of being lost due to erosion by 2105.Farm buildings could also be at risk.
Communities						
Protect all settlements.		Despite a No Active Intervention policy which would lead to erosion of the cliffs, there are no settlements at risk of erosion during this epoch.		As epoch 1, except the more coastal parts of Holmpton would begin to be affected by erosion.		Accelerating rate of erosion due to sea level would affect coastal parts of the community of Holmpton. Other coastal villages would be unaffected.
Natural environment						
Maintain natural processes leading to the exposure of the geological features at Dimlington cliffs.		Under a No Active Intervention Scenario the natural processes leading to the exposure of the Dimlington cliffs would be maintained.		As epoch 1.		As epochs 1 and 2.
Agriculture and Industry						
Protect as much grade 1 and grade 2 land as possible		There would be no loss of grade 2 agricultural land under this policy.		Approximately 8 hectares of grade 2 agricultural land would be at risk of being lost due to erosion by 2055.		By 2105, further grade 2 agricultural land would be at risk of being lost due to erosion under this policy.
Ensure that the impact on the UK's area of agricultural land is acceptable		There would be some loss of around 33 hectares of agricultural land as the cliffs erode under a No Active Intervention policy for the majority of the frontage.		As epoch 1, however rate of loss would increase slightly with accelerating erosion. Approximately 80 hectares of agricultural land potentially at risk of erosion by 2055.		As epoch 2, however rate of loss would increase with accelerating erosion leading to loss of more agricultural land by 2105.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		No Active Intervention would allow a diverse tourism economy continue as caravan parks and chalets could roll back, and the beaches in front of the eroding cliffs would remain.		As epoch 1, but beach width could begin to reduce with sea level rise. There would be increasing pressure for rollback of caravan parks.		As epoch 2, but further erosion rate increases would accelerate the rollback and beaches could steepen and narrow as sea levels rise.
Infrastructure						
Avoid interruption to the functioning of the A1033.		Despite erosion of cliffs under a No Active Intervention policy, the A165 would remain unaffected as it is located sufficiently far from the current shoreline.		As epoch 1.		As epoch 1 and 2.
Avoid interruption to the functioning of Hollym sewage treatment works, Out Newton wind farm and other key community services and utilities infrastructure.		Although this policy does nothing to directly avoid interruption to the key community services and utilities infrastructure, these assets would be largely unaffected by erosion due to their current position sufficiently far from the shoreline.		As epoch 1, but increasing risk of interruption to Hollym sewage treatment works as cliff erosion accelerates and the cliffs retreat further inland.		Further increase in risk of interruption to key community services and utilities infrastructure. Complete loss of the Hollym sewage treatment works would occur due to erosion.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		Natural processes creating the coastal landscape would be allowed to continue under a No Active Intervention policy.		As epoch 1.		As epochs 1 and 2.

Character area 7: Hollym to Dimlington cliffs objectives for appraisal

Policy tested: No Active Intervention for all epochs along the entire frontage

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Natural coastal processes allowed to continue under a No Active Intervention policy.		As epoch 1.		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Out Newton ROC site) from cliff erosion		Under a No Active Intervention policy of the frontage it is likely that approximately 6 Records noted by the RCZAs could be at risk.		As epoch 1, but number of RCZAs Records affected would increase to approximately 12 as sea level rise causes erosion to accelerate.		As epoch 2, but upto approximately 18 Records noted by RCZAs would potentially be at risk as erosion as cliffs retreat further inland.
Ensure coastal defence works do not threaten designated and significant historic environment assets		No new coastal defences would be constructed or existing defence maintenance conducted under a No Active Intervention Scenario		As epoch 1.		As epochs 1 and 2.
Timing Objectives Provide sufficient time, if necessary for;	--	**Explanation**				
Community adaptation,		No Active intervention is the current policy and erosion of the cliffs already occurs, however erosion rate would accelerate with sea level rise, meaning community adaptation time would reduce over the epochs.				
Relocation of regional infrastructure, ensuring continued A road transport links between Hollym and Withernsea.		The A-road is sufficiently far from the current shoreline position meaning there is sufficient time for relocation if required.				
Research of archaeological features and ecological surveys		Sufficient time available.				
Provision of recreational access to the foreshore.		Generally there would be sufficient time to ensure access to the foreshore would be maintained despite the eroding cliffs. Some losses may occur during episodic erosion events which are unpredictable.				

Character Area 8: Dimlington and Easington Gas terminals objectives for appraisal

Policy tested: Hold the line along the entire frontage for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		A Hold the Line policy would ensure that the area is protected against the flood and erosion risk.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The existing defences would be used effectively under a Hold the Line policy and would form an integral part of implementing the policy.		As epoch 1 but as sea level rise accelerates defences would require significant improvements and new defences would be required in addition to the existing defences		As epochs 1 and 2 with further improvements and additions to the defences would be required to account for the further acceleration in sea level rise.
Agriculture and Industry						
Maintain and enhance the viability of the Easington and Dimlington gas terminals.		Under a Hold the Line policy, the Easington and Dimlington gas terminals would be maintained.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable		Under a Hold the Line policy, erosion of agricultural land would be prevented.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		A Hold the line policy has shaped the current landscape, this policy is continued and the landscape would remain similar to that of the present day over this epoch.		As epoch 1, but narrowing and loss of beaches would occur due to coastal squeeze and there would be the need for more significant defence structures.		As epoch 2 with further reduction in coastal landscape quality due to coastal squeeze and increases in defence structures.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		A Hold the Line policy would cause some slight interruption to sediment supplied to other frontages as defences would prevent the coastline from undergoing erosion. The longshore transport of sediment would still occur this maintaining the transport of sediment from updrfit to downdrift areas.		There would be an increase in risk of interruption to sediment supplied to other frontages as erosion of adjacent areas continues, and erosion in this area is prevented. Depending on the mechanisms used to carry out this policy, there may be some interruption to longshore transport of sediment through the area. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.		Interruption to processes supplying sediment to other frontages would occur. Defences would continue to prevent erosion. Depending on the mechanisms used to carry out the policy, there may be some significant interruption to longshore transport processes carrying sediment through this area, from updrift to downdrift frontages. There may also be the requirement for defence extension to prevent outflanking, but this may need assessing over time.

Timing Objectives Provide sufficient time, if necessary for;	**Score (all Epochs)**	**Explanation**
Relocation / adaptation of the gas terminals		Under a Hold the Line policy, relocation/adaptation of the gas terminals would not be required.
Changes of flood risk management practices		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.

Policy Package 2.3a (Easington to Kilnsea, Easington Road to Stone Creek)

Character Area	Policy Appraised
Character Area 9: Easington to Kilnsea	The defences would be held in their current position with limited Managed Realignment to ensure defence sustainability and compliance with relevant legislation. The defences would maintain the present standard of protection against flooding.
Character Area 11: Easington Road to Stone Creek	The defences would be held in their current position with limited Managed Realignment to ensure defence sustainability and compliance with relevant legislation. The defences would maintain the present standard of protection against flooding.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line P4 for areas with flood defences on the open coast with No Active Intervention in currently undefended areas in epoch 1. In epoch 2 Managed Realignment of flood defences behind lagoons with P4 with No Active intervention elsewhere. Flood defence alignments held with no Active Intervention elsewhere in epoch 3.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score		Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would maintain current standard of protection against flooding. There would be no risk to residential properties in the epoch from erosion. Caravan parks and assets would need to roll back as erosion would continue.		This policy would cause no threat to people and property and would maintain the standard of protection against flooding. Caravan parks and assets would need to roll back as erosion would continue on undefended frontages.		People and property would continue to be protected against flooding to the same standard as the present day. There could be approximately 3 residential properties at threat of erosion on the undefended frontages by 2105.
Make effective use of existing man-made or natural defences.		Existing defences would be used effectively to carry out this policy. The defences may need some maintenance.		There would be the requirement for significant new defences to carry out this policy.		Existing defences would be redundant and new defences would provide protection against flooding.
Communities						
Protect all settlements		Hold the line P4 would ensure flood protection to settlements is maintained. Erosion would continue on undefended frontages but would not threaten settlements.		This policy would cause no threat to people and property and would maintain the standard of protection against flooding. Caravan parks and assets would need to roll back as erosion would continue on undefended frontages.		There is a risk that some properties on the coastal fringe of Easington could be a threat of erosion.
Natural environment						
Maintain natural processes relating to the saline lagoons at Easington		Natural processes relating to the saline lagoons would continue to operate, however, a Hold the Line policy would constrain the rear of the lagoons.		The lagoons would diminish in quality and extent due as sea levels rise. There would be potential for re-creation of lagoon and intertidal habitats under this policy.		The lagoons would not exist by 2105 due to over 1 metre of sea level rise. There would be potential for re-creation of lagoon and intertidal habitats under this policy.
Maintain and if possible enhance the extent and condition of the saline lagoons.		A Hold the Line policy would allow natural processes infront of the defence line to continue, however some reduction in lagoon extent would occur by 2025 as a result of sea level rise leading to coastal squeeze.		The lagoons would diminish in quality and extent due as sea levels rise. There would be potential for recreation of lagoon and intertidal habitats under this policy.		The lagoons would not exist by 2105 due to over 1 metre of sea level rise. There would be potential for recreation of lagoon and intertidal habitats under this policy.
Ensure that there are no adverse impacts to the UK's internationally designated sites		The internationally designated barrier providing habitats for little terns would remain. The internationally designated lagoons would remain, however would reduce in quality and extent due to a natural process of sea level rise.		Internationally designated sites would be detrimentally affected as the quality and extent of mudflats and saltmarshes would reduce. The lagoons would no longer be present due to retreat of the barrier as a result of sea level rise. There would be potential to re-create lagoon and intertidal habitats under this policy as the flood defence line is re-aligned landwards.		As epoch 2.
Agriculture and Industry						
Ensure that the impact on the UK's area of agricultural land is acceptable		A Hold the Line P4 policy would protect agricultural land against flooding to the same standard of protection as the present day. Approximately 10 hectares of grade 3 and 4 land is likely to be at risk of erosion.		This policy would affect approximately 30 hectares of grade 3 and 4 agricultural land but would ensure that the standard of flood protection to the land behind would be maintained.		Approximately 75 hectares of grade 3 and 4 land would be at risk of erosion.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Tourism would remain viable, however caravan parks would be affected by erosion. Tourist assets such as the beaches would remain. The natural tourism attraction of the lagoons and associated birdlife may begin to be affected by a Hold the Line policy.		Tourism would remain viable however the caravan site would be increasingly affected by erosion. There would be the potential for recreating habitats which could attract tourism.		As epoch 2 but with increasing impacts due to erosion for the caravan sites.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line P4 for areas with flood defences on the open coast with No Active Intervention in currently undefended areas in epoch 1. In epoch 2 Managed Realignment of flood defences behind lagoons with P4 with No Active intervention elsewhere. Flood defence alignments held with no Active Intervention elsewhere in epoch 3.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score		Score	Explanation	Score	Explanation
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The coastal landscape would not be significantly affected by this policy. The lagoons may begin to reduce in quality and extent as a result of sea level rise.		The landscape would not be significantly affected by the policy, however the lagoons would have narrowed and significantly reduced in quality and extent due to sea level rise. Additional embankments are likely to be required to carry out this policy.		As epoch 2.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes would not be fundamentally altered by a Hold the Line policy in this epoch. Erosion would continue and thus the sediment supply to Spurn and other coastlines would be maintained.		Coastal processes would be largely uninterrupted under this policy as the cliffs would continue to erode and the flood defences would be re-aligned.		As epoch 2.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Goodwin Battery) from erosion and flooding		Significant and designated historic environment assets would be unaffected. There would be a threat to 1 record noted by the RCZAs. Damage and loss would continue at Goodwin Battery as much of this feature has already been lost to erosion as it is situated forwards of the current shoreline.		Approximately 10 records noted by the RCZAs could potentially at threat from erosion.		Significant and designated historic environment assets would be unaffected however there could be a threat to 15 records noted by the RCZAs due to erosion.
Ensure coastal defence works do not threaten designated and significant historic environment assets		No designated or significant historic environment assets would be threatened by works but approximately 5 records noted by the RCZAs could potentially be threatened as defence upgrades and maintenance are undertaken.		No designated or significant historic environment assets would be threatened by works.		As epochs 1 and 2.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		Communities would have time to adapt, especially for areas protected against flooding by defences. There may be the requirement for communities to adapt where the cliffs continue to erode, but there would be some time for adaptation.				
Changes of flood risk management practices		There would be some time for changes in flood risk management practices if required.				
Research of archaeological features and ecological surveys,		There would be time available to research/ document archaeological features or undertake ecological surveys under this policy.				
Relocation/adaptation of visitor centre, caravan site, and other key community services and infrastructure.		There would be sufficient time for relocation / adaptation of key community services and infrastructure if required.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would be maintained.				

Character Area 11: Easington Road to Stone Creek objectives for policy appraisal

Policy tested: Hold the Line P4 with limited Managed Realignment ensuring defence sustainability and compliance with relevant legislation for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		All people and property would be protected against flooding to the same standard as the present day. Any defence realignments would not affect properties and would maintain sustainable flood defences to areas behind them.		All people and property would be protected against flooding to the same standard as the present day. Any defence realignments would not affect properties and would maintain sustainable flood defences to areas behind them.		All people and property would be protected against flooding to the same standard as the present day. Any defence realignments would not affect properties and would maintain sustainable flood defences to areas behind them.
Make effective use of existing man-made or natural defences		Although the current defences would be used effectively, new defences would also be required.		Although the current defences would be used effectively increasing maintanence and upgrades would be required. New defences would also be required.		As epoch 2, but with further maintenance and upgrades required.
Communities						
Protect all settlements		This policy would ensure protection to settlements is maintained. No settlements would be affected by Managed Realignment.		This policy would ensure protection to settlements is maintained. No settlements would be affected by Managed Realignment.		This policy would ensure protection to settlements is maintained. No settlements would be affected by Managed Realignment.
Natural Environment						
Maintain natural processes relating to the saltmarshes and mudflats		The natural processes relating to the saltmarshes and mudflats would largely continue under this policy. There would be potential to create saltmarshes and mudflats to offset any losses due to coastal squeeze where defences are held as sea levels rise.		As epoch 1.		As epochs 1 and 2.
Maintain and enhance the extent and condition of saltmarshes and mudflats if possible		The quality and extent of saltmarshes and mudflats would be maintained under this policy. There would be potential to create saltmarshes and mudflats to offset any losses due to coastal squeeze where defences are held as sea levels rise.		As epoch 1.		As epochs 1 and 2.
Maintain and enhance populations of waders and wildfowl		Populations of waders and wildfowl would be maintained under this policy. Potential for habitat creation which would help support populations these species as sea levels rise.		As epoch 1.		As epochs 1 and 2.
Ensure that there are no adverse impacts to the UK's internationally designated sites		There would be no net adverse impacts to Internationally designated sites under this policy. Any impacts due to coastal squeeze could be offset through potnetial creation of habitats.		As epoch 1.		As epochs 1 and 2.

Character Area 11: Easington Road to Stone Creek objectives for policy appraisal

Policy tested: Hold the Line P4 with limited Managed Realignment ensuring defence sustainability and compliance with relevant legislation for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Agriculture and industry						
Protect grade 1 and 2 agricultural land		A significant area of grade 2 agricultural land could become at risk of flooding and erosion as a result of changes to defence alignments.However, any defence realignments would ensure sustainable flood defence protection to the high grade agricultural land behind.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be significant detrimental impacts on agricultural land under this policy. However, any defence realignments would ensure sustainable flood defence protection to the high grade agricultural land behind		There would be increasing detrimental impacts on agricultural land under this policy.		As epoch 2.
Infrastructure						
Avoid interruption to the drainage functions of: the North channel; Sunk Island, Ottringham and Winestead drains, and; the pumping stations		The functioning of the drains and the pumping station would remain uninterrupted under this policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape		There would some changes to the landscape, however there would be no significant detrimental impacts. New flood banks would need to be constructed for Managed Realignment, however this would help create new intertidal habitat.		As epoch 1.		As epochs 1 and 2.
Coastal processes						
To prevent interruption of coastal processes which create intertidal and subtidal habitats within the Humber Estuary		There would be no net adverse impacts to coastal processes creating intertidal and subtidal habitats within the estuary. Managed Realignment would offset any interruption caused due to coastal squeeze.		As epoch 1.		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding, where possible		Designated and significant historic environment assets would be protected to the same standard as the present day against flooding. Erosion of assets would also be prevented. A small number of records noted by the RCZAs could be at threat as a result of the Managed Realignment.		Designated and significant historic environment assets would be protected against erosion and against flooding to the same standard as the present day. Although a few records noted by the RCZAs could be affected, any realignments to defences would not affect designated and significant historic environment assets.		As epoch 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		No designated or significant historic environment assets would be affected by coastal defence works. A few record noted by the RCZAs could be at threat due to Managed Realignment.		As epoch 1.		As epochs 1 and 2.

Character Area 11: Easington Road to Stone Creek objectives for policy appraisal

Policy tested: Hold the Line P4 with limited Managed Realignment ensuring defence sustainability and compliance with relevant legislation for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		There would be some time available for communities to adapt if required, however any changes in defence alignments would not affect people or property.				
Change of flood risk management practices,		There would be sufficient time for changes to flood risk management practices under this policy if required.				
Relocation / adaptation of pumping stations, drainage outfalls and other key community services infrastructure		There would be time available for relocation / adaptation to key community services infrastructure under this policy if required, however and changesi n defence alignment would not affect key community services infrastructure.				
Research of archaeological features and ecological surveys, and		Sufficient time available, except in areas where Managed Realignment would be undertaken in epoch 1.				
Provision of recreational access to the foreshore.		Sufficient time available to maintain access to the foreshore.				

Policy Package 2.3b (Kilnsea to Spurn Point)

Character Area	Policy Appraised
Character Area 10: Kilnsea to Spurn Point	Allow the Spurn barrier to evolve largely naturally with limited intervention to maintain the barrier's integrity and access to Spurn Point.

Character Area 10: Kilnsea to Spurn Point objectives for appraisal

Policy tested: Managed Realignment along the entire frontage for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Minimise coastal flood and erosion risk to people and property.		There are few properties in this area and these would be protected under this policy.		As epoch 1.		As epochs 1 and 2, however slight increase in threat of flooding and erosion as sea levels rise.
Make effective use of existing man-made or natural defences.		The existing defences are largley derelict and would cease to provide protection benefits. If defences were required under this policy, new structures / works would be required. The barrier would continue to be used effectively under this policy.		The barrier would continue to be used, although additional works would be required to maintain the integrity of the barrier.		As epochs 1 and 2, however considerable intervention / additional works are likely to be required to carryout this policy.
Communities						
Protect as many settlements as possible.		There are few settlements in this area, but they would remain protected under this policy.		As epoch 1, but with increasing risk as sea levels rise.		As epoch 2, with further increase in risk to settlement.
Natural environment						
Maintain natural processes relating to the saltmarshes, mudflats and sand dunes.		Natural processes relating to the dunes, mudflats and saltmarshes would largely continue under this policy.		As epoch 1.		As epochs 1 and 2, however intervention required to implement this policy may need to increase significantly and could potentially affect natural processes relating to habitats.
Maintain and if possible enhance the extent and condition of the saltmarshes, mudflats and sand dunes.		Natural processes relating to the dunes mudflats and saltmarshes would largely continue so this policy would not detrimentally affect the quality and extent of these habitats.		As epoch 1.		As epochs 1 and 2, however intervention required to implement this policy may need to increase significantly and could potentially affect natural processes relating to habitats.
Maintain and where possible enhance the natural processes relating to the geomorphological functioning of Spurn.		This policy would facilitate the barrier to maintain its integrity as breach repair would be assisted if required. Natural processes relating to the geomorphological functioning of Spurn would largely continue.		As epoch 1.		As epochs 1 and 2, however intervention required to implement this policy may need to increase significantly and could affect the natural processes relating to the geomorphological functioning of Spurn.
Maintain and enhance populations of waterfowl.		This policy would allow habitats supporting waterfowl to evolve largley naturally and so this policy would not detrimentally affect wildfowl populations.		As epoch 1.		As epochs 1 and 2, however intervention required to implement this policy may need to increase significantly and could affect the natural processes relating to the habitats that support waterfowl.
Ensure that the impact on the UK's area of internationally designated habitat is acceptable.		The environmentally designated habitats would evolve under natural processes under this policy.		As epoch 1.		As epochs 1 and 2, however intervention required to implement this policy may need to increase significantly and could affect the UK's area of internationally designated habitat.
Agriculture and Industry						
Ensure that the impact on the UK's area of agricultural land is acceptable		There would be no significant impact on agricultural land in this epoch under this policy.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Tourism is largely based around the natural feature of Spurn and the associated habitats / birdlife. This policy would allow the barrier to evolve but tourism access to Spurn would be maintained as any breaches would be healed if required.		As epoch 1, but increasing intervention may be required to maintain the integrity of the barrier as sea levels rise. This could hinder the natural aesthetics which is appealing to tourists.		As epochs 1 and 2 with the risk that the natural appeal and aesthetics may reduce as sea level rise accelerates.

Character Area 10: Kilnsea to Spurn Point objectives for appraisal

Policy tested: Managed Realignment along the entire frontage for all epochs.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Infrastructure						
Avoid interruption to the functioning of: the Spurn RNLI station, sewage treatment works, Humber pilots station, lighthouse and other key community services and utilities infrastructure.		Under a Managed Realignment policy the functioning of key community services and utilities infrastructure would be largely uninterrupted as access along the barrier would be maintained.		As epoch 1, but risk of interruption would increase due to greater risk of flooding, erosion as sea levels rise.		As epochs 1 and 2, but risk of some disruption to key community services and utilities infrastructure.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		Natural processes would largely be allowed to continue, however breaches may be artificially healed to maintain the integrity of the barrier if required. The landscape quality would be maintained under this policy.		As epoch 1, but with some reduction in landscape quality possible if intervention is required to aid the maintenance of the barrier.		As epoch 2, but increase in risk that landscape quality could reduce as sea levels rise and increasing intervention may be required to maintain the integrity of the barrier.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes supplying sediment to other coastlines would be largely uniterrupted under this policy.		As epoch 1.		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets (such as WW1 and WW2 features) from erosion and flooding, where possible.		There would be no significant damage to designated and significant historic environment assets. Slight risk impacts to records noted by RCZAs under this policy.		As the barrier evolves, there is a risk of damage to the listed buildings of the Lighthouse and Tower of the former lighthouse as sea levels rise and flood and erosion risk may increase under this policy. Records noted by RCZAs could also be affected.		Significant risk that despite this policy maintaining the integrity of the barrier, the Lighthouse and Tower of the former lighthouse, as well as records noted by the RCZAs, could be damaged and lost as a result of flooding or erosion.
Ensure coastal defence works do not threaten designated and significant historic environment assets, where possible.		If coastal defence works were required, they would not pose a threat to designated or significant historic environment assets. Risk that some records noted by the RCZAs could be affected.		As epoch 1, but with slight increase in risk to records noted by RCZAs as sea levels rise.		As epochs 1 and 2, but risk of disruption to records noted by RCZAs.

Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**
Community adaptation,		There would be some time for community adaptation under this policy as the barrier processes / evolution would be controlled / managed.
Changes of flood risk management practices		There would be time available if changes to flood risk management practices were required under this policy.
Relocation / adaptation of RNLI station, Humber pilots station, sewage treatment works and other key community services and utilities infrastructure.		There would be some time for relocation / adaptation if required under this policy as the barrier processes / evolution would be controlled / managed.
Relocation/adaptation of visitor centre, caravan site, and other key community services and infrastructure		This policy would allow sufficient time for adaptation and relocation of these assets if required.
Research of archaeological features and ecological surveys		Some time available, however many of the archaeological features are already at threat from erosion or are already eroding. There would be sufficient time available for ecological surveys.
Provision of recreational access to the foreshore.		Sufficient time available to ensure recreational access to the foreshore is maintained.

Policy Package 3.1 (East Immingham to Humberston Fitties)

Character Area	Policy Appraised
Character Area 12: East Immingham to Grimsby Docks	The defences would be held in their current position and their flood defence function maintained. P4 Evaluated.
Character Area 13a: Grimsby and Cleethorpes	The defences would be held in their current position and their flood defence function maintained. P4 Evaluated.
Character Area 13b: Humberston Fitties	Hold the Line in epoch 1 for the entire frontage with P3. Managed realignment to the existing secondary floodbank in epoch 2 with P4, with the defences held with P4 for epoch 3.

Character Area 12: East Immingham to Grimsby Docks

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property .		A Hold the Line P4 policy would maintain the present day standard of protection against flooding. Erosion would be prevented.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The existing defences would be used effectively and would form the basis of the defence line under a Hold the Line P4 policy. Some upgrades and maintenance would be required.		Although the existing defences would be used, significant defence improvements and additional structures would be required to Hold the Line P4.		Existing defences would need significant upgrades and additional structures. It is possible the current defences would be entirely superseded by this time.
Communities						
Protect all settlements		A Hold the Line P4 policy would maintain the present day standard of protection against flooding. Settlements would also be protected against erosion.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to intertidal habitats and subtidal flats		The current policy of Hold the Line would continue to constrain the shoreline. Foreshore lowering would continue, especially in the west of the area, where beach erosion is occurring. This may cause some loss of intertidal habitats here. These losses are likely to be balanced to some extent by continued accretion, especially in the east of the area towards the docks, which would help to maintain the extent of intertidal habitats.		Increasing impacts as a net loss of intertidal habitats would occur as sea level rise accelerates and coastal squeeze occurs.		As epoch 2, with further intertidal habitat losses.
Maintain and enhance the intertidal habitats and subtidal flats if possible.		The current policy of Hold the Line would continue to constrain the shoreline. Foreshore lowering would continue, especially in the west of the area, where beach erosion is occurring. This may cause some loss of intertidal habitats here. These losses may be balanced to some extent by continued accretion, especially in the east of the area towards the docks, which would help to maintain the extent of intertidal habitats.		Increasing impacts as a net loss of intertidal habitats would occur as sea level rise accelerates and coastal squeeze occurs.		As epochs 1 and 2, with further intertidal habitat losses.
Maintain and enhance populations of waders and wildfowl.		Populations of waders and wildfowl are likely to remain despite some potential loss of supporting habitat.		Some loss of habitats that support waders and wildfowl is likely to occur due to accelerating sea level rise and coastal squeeze.		As epoch 2, but with further wader and wildfowl habitat loss as sea level rise accelerates further.
Ensure that there are no adverse impacts on the UK's area of internationally designated sites		There is potential for some detrimental impacts upon the internationally designated habitats. It is possible there would be a slight net loss of intertidal habitats if foreshore lowering in the east of this area is not offset sufficiently by accretion in the east .		Loss of internationally designated habitats is expected under a Hold the Line policy, as sea levels rise and coastal squeeze occurs along with foreshore lowering.		As epoch 2, but with further significant impacts on internationally designated habitats as sea level rise accelerates.
Agriculture and industry						
Maintain and enhance the viability of the area's industrial facilities including: petrochemical; chemical; oil storage; bulk and liquid storage; power generation; and other manufacturing, processing and storage infrastructure.		The viability of the area's manufacturing, processing and bulk storage infrastructure would be maintained under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure the impact on the UK's agricultural land is acceptable.		There would be no adverse impacts to agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.

Character Area 12: East Immingham to Grimsby Docks

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Infrastructure						
Avoid interruption to the functioning of Immingham and Grimsby ports.		A Hold the Line P4 policy would allow uninterrupted functioning of the Immingham and Grimsby ports.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the A1136, A180, A1173 and the rail network.		A Hold the Line P4 policy would allow uninterrupted functioning of the A roads and rail network.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the drainage network including: North Beck, Middle, Old Fleet, Mawmbridge, Sweedale, Towns Croft and New Cut drains; the River Freshney and land drainage pumping stations.		A Hold the Line P4 policy would allow uninterrupted functioning of the drains and pumping stations.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the sewage works and other key community services and utilities infrastructure.		A Hold the Line P4 policy would allow uninterrupted functioning of the key community services and utilities infrastructure.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The coastal landscape is already heavily modified by man and would remain largely unchanged over this epoch. However, continuing a Hold the Line P4 policy may lead to a slight reduction in landscape quality over time as the foreshore would narrow, and intertidal habitats could reduce in extent.		As epoch 1, with effects exacerbated as sea levels rise. Increasingly significant defence structures would be required under a Hold the Line P4 policy.		As epoch 2, but with impacts further exacerbated by sea level rise.
Coastal processes						
To prevent interruption to the role of coastal processes which create intertidal and subtidal habitats within the Humber Estuary.		A Hold the Line policy would not significantly interrupt the longshore transport of sediment. Erosion of the shoreline would be prevented, thus causing some reduction in the supply of sediment to intertidal and subtidal habitats.		As epoch 1, but further restriction is sediment supplied due to a Hold the Line policy. This policy would lead to beach lowering as the shoreline position is held and a natural supply of sediment from erosion is prevented. Depending on the mechanisms used to carry out this policy, there could also be interruption to longshore transport processes.		As epoch 2, but with impacts further exacerbated as sea levels rise further.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		A Hold the Line P4 policy would maintain the current standard of protection to designated and significant historic environment assets behind the defence line. This policy would also protect assets against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Under Hold the Line P4, coastal defence works would largely be undertaken at or around the location of the existing defences so would not threaten to significant historic environment assets.		As epoch 1, but increasingly significant defence works such as crest raising and toe strengthening and protection would need to be undertaken under Hold the Line P4 . This could potentially affect some records noted by the RCZAs, however no Significant or designated environment assets would be at risk.		As epoch 2, but with further increases in defence works and extent of structures required under P4 so would increase the threat to RCAZs records.

Character Area 12: East Immingham to Grimsby Docks						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		If there is the requirement for community adaptation, there would be sufficient time.				
Change of flood risk management practices,		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links between Immingham, Healing, Stallingborough, Pyewipe and Grimsby.		There would be time available for relocation / adaptation of regional infrastructure under this policy if required.				
Relocation / adaptation of sewage treatment works, pumping stations and other key community services and utilities infrastructure.		There would be time available for relocation / adaptation of key community services and utilities infrastructure under this policy if required.				
Research of archaeological features and ecological surveys.		There would be sufficient time available under this policy.				
Adaptation of Immingham and Grimsby ports,		There would be time available for adaptation of the ports under this policy.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would be maintained for all epochs under this policy.				

Character Area 13a: Grimsby and Cleethorpes

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property.		A Hold the Line P4 policy would maintain the present day standard of protection against the flooding. Erosion would be prevented.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The existing defences would be used effectively and would form the basis of the defence line under a Hold the Line P4 policy. Some upgrades and maintenance would be required.		Although the existing defences would be used, significant defence improvements and additional structures would be required to Hold the Line P4.		Existing defences would need significant upgrades and additional structures. It is possible the current defences would be entirely superseded by this time.
Communities						
Protect all settlements		A Hold the Line P4 policy would maintain the present day standard of protection against flooding to settlements. Settlements would also be protected against erosion.		As epoch 1.		As epochs 1 and 2.
To maintain Grimsby and Cleethorpes as viable towns, seaside resorts, and regional commercial centres throughout the plan period		A Hold the Line P4 policy would prevent erosion and would maintain the present day standard of protection against flooding to Grimsby and Cleethorpes. This policy would therefore allow Grimsby and Cleethorpes to remain viable towns, seaside resorts and regional commercial centres.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the intertidal habitats and subtidal flats		The current trend of slight acretion is likely to continue however foreshore narrowing and steepening is likely to occur as sea levels rise. This may cause some loss of intertidal habitats, however is it likely that these losses may be balanced by continued accretion which may help to maintain intertidal habitats.		As epoch 1, but increasing threat of loss to intertidal habitats as sea level rise accelerates and the foreshore would narrow and steepen as coastal squeeze occurs.		As epoch 2, but with further intertidal habitat losses as sea level rise accelerates significantly.
Maintain and enhance the intertidal habitats and subtidal flats if possible		The current trend of slight acretion is likely to continue however foreshore narrowing and steepening is likely to occur as sea levels rise. This may cause some loss of intertidal habitats, however is it likely that these losses may be balanced by continued accretion which may help to maintain intertidal habitats.		As epoch 1, but increasing threat of loss to intertidal habitats as sea level rise accelerates and the foreshore would narrow and steepen as coastal squeeze occurs.		As epoch 2, but with further intertidal habitat losses as sea level rise accelerates significantly.
Maintain and enhance populations of waders and wildfowl.		Habitats that support waders and wildfowl are likely to remain largely unaffected.		Some loss of habitats that support waders and wildfowl is likely to occur due to accelerating sea level rise and coastal squeeze.		As epoch 2, but with further loss to habitats that support waders and wildfowl as sea level rise accelerates further.
Ensure that there are no adverse impacts on the UK's area of internationally designated sites		There is the risk of some net detrimental impacts on the internationally designated habitats. This is due to the potential for loss of intertidal habitats if the effects of sea level rise and a constrained shoreline are not offset by accretion.		Some impacts on internationally designated habitats are likely under a Hold the Line policy, as sea levels rise and coastal squeeze occurs along with foreshore narrowing and steepening.		As epoch 2, but with further impacts expected for internationally designated sites as sea level rise accelerates.

Character Area 13a: Grimsby and Cleethorpes

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Agriculture and industry						
Maintain and enhance the viability of the fish and food processing facilities and other commercial dock activities and facilities		The viability of the fish and food processing facilities and commercial dock activities would be maintained under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts to agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy		A Hold the Line P4 policy would allow a diverse tourism economy to continue. Tourism assets behind the defence line would be protected and beaches would remain.		As epoch 1, however beaches which are an important tourism driver could narrow or reduce.		A diverse tourism economy could continue however the beaches are likely to significantly reduce in extent as sea levels rise. This could reduce the appeal of the towns as seaside resorts for tourists.
Infrastructure						
Avoid interruption to the functioning of the port of Grimsby		A Hold the Line P4 policy would allow the Port of Grimsby to continue to function without interruption.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the A16, A1031, A1098, A1136, A46, A180 and the rail network		The A16, A1031, A1098, A1136, A46, A180 and the rail network would remain uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the drainage network including Buck Beck and Goosemans Drain		A Hold the Line P4 policy would allow the drainage network, including Buck Beck and Goosemans Drain to function without interruption.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the dredged navigation channel; the marina; piers; and other key community services and utilities infrastructure		The uninterrupted functioning of the dredged navigation channel; the marina; piers; and other key community services and utilities infrastructure would continue under this policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The coastal landscape is already heavily modified by man and would remain largely unchanged over this epoch. Hold the Line P4 may lead to a slight reduction in landscape quality over time as beaches could start to steepen and narrow.		Increasingly significant defences would become increasingly prominent on the landscape and beaches would narrow and steepen. Intertidal habitats would also reduce in quality and extent.		As epoch 2, but with impacts further exacerbated by sea level rise.
Coastal processes						
To prevent interruption of coastal processes which create intertidal and subtidal habitats within the Humber Estuary.		A Hold the Line policy would not significantly interrupt the longshore transport of sediment which would continue to supply sediment to intertidal and subtidal habitats.		Natural coastal processes would begin to be interrupted as sea levels rise. The defences would prevent the release of sediment. Depending on the mechanisms used to carry out the policy, there could be some interruption to longshore processes.		As epoch 2, but with further interruption as sea level rise accelerates and the defence line is held.

Character Area 13a: Grimsby and Cleethorpes						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		A Hold the Line P4 policy would maintain the current standard of protection to designated and significant historic environment assets behind the defence line. This policy would also protect assets against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Under Hold the Line P4, coastal defence works would largely be undertaken at or around the location of the existing defences so would not threaten to significant historic environment assets.		Increasingly significant defence works such as crest raising and toe strengthening and protection would need to be undertaken under Hold the Line P4 . This could potentially affect up to approximately 12 records noted by the RCZAs, however no Significant or designated environment assets would be at risk.		As epoch 2, but with further increases in defence works and extent of structures required under P4 so would increase the threat to RCAZs records.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		If there is the requirement for community adaptation, there would be sufficient time.				
Change of flood risk management practices		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links between Grimsby and Cleethorpes and nearby settlements		There would be time available for relocation / adaptation of regional infrastructure under this policy.				
Relocation / adaptation of sewage treatment works and other key community services and utilities infrastructure		There would be time available for relocation / adaptation of key community services and utilities infrastructure under this policy.				
Research of archaeological features and ecological surveys		There would be sufficient time available under this policy.				
Adaptation of Grimsby port		There would be time available for adaptation of the ports under this policy.				
Provision of recreational access to the foreshore.		There would be time to provide recreational access to the foreshore, however if beaches steepen and narrow due to sea level rise, access may become more difficult, especially in epoch 3.				

Character Area 13b: Humberston Fitties objectives for policy appraisal

Policy tested: Hold the Line in epoch 1 for the entire frontage with P3. Managed realignment to the existing secondary floodbank in epoch 2 with P4, with the defences held with P4 for epoch 3.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		A Hold the Line P3 policy would mean that the present day standard of protection against the flooding for properties in Humberston Fitties would fall as sea levels rise, thus increasing the flood risk to properties over time. People and property behind the flood bank at the rear of Humberston Fitties would continue to be protected against flooding.		Approximately 200 properties in between the existing primary defence line and the secondary defence line would become at risk of flooding as maintenance on the front line of defences is withdrawn under Managed Realignment.		As epoch 2.
Make effective use of existing man-made or natural defences.		The existing defences which consist of dunes and wide beach would be used effectively and would form the basis of the defence line under a Hold the Line P3 policy. Some maintenance would be required.		Although the existing defences would be able to be used, some defence improvements and additional structures may be required to ensure that the existing secondary defences would provide adequate protection to the settlements behind them.		Existing defences are likely to need significant upgrades and additional structures may be required. It is possible the current defences would be entirely superseded by this time as sea levels rise.
Communities						
Protect all settlements		A Hold the Line P3 policy would mean that the present day standard of protection against the flooding for properties in Humberston Fitties would fall as sea levels rise, thus increasing the flood risk to properties over time. People and property behind the existing flood bank would continue to be protected against flooding.		This policy would protect settlements behind the new defence line, but the chalets between the current primary defence line and the new defence line would be unprotected and at significant threat of frequent flooding.		As epoch 2.
Natural environment						
Maintain natural processes relating to the intertidal habitats and subtidal flats		The current trend of acretion is likely to continue however foreshore narrowing and steepening is likely to occur as sea levels rise. This may cause some loss of intertidal habitats.		Continued feed of sediment to this area is likely to lead to further accretion. This would help maintain habitats despite sea level rise. Managed Realignment would also help increase intertidal and subtidal habitats.		Managed Realignment would help natural processes leading to intertidal and subtidal flats to largely continue despite accelerating sea level rise.
Maintain and enhance the intertidal habitats and subtidal flats if possible		The current trend of acretion is likely to continue however foreshore narrowing and steepening is likely to occur as sea levels rise. This may cause some loss of intertidal habitats.		Continued feed of sediment to this is likely to lead to further accretion. This would help maintain the saltmarshes despite sea level rise. Managed Realignment would also help maintain and enhance the habitat.		Managed Realignment would help maintain intertidal and subtidal flats despite accelerating sea level rise.
Maintain and enhance populations of waders and wildfowl.		Accretion would largely help maintain habitats which support populations of wildfowl and waders. Some minor loss could occur due to foreshore steepening.		Continued accretion and Managed Realignment would help maintain the quality and extent of habitats as sea levels rise. Populations of wildfowl and waders would remain largely unaffected over this epoch.		Managed Realignment would help maintain habitats that support waders and wildfowl despite accelerating sea level rise.
Ensure that there are no adverse impacts on the UK's area of internationally designated sites		There is the risk of some net detrimental impacts on the internationally designated habitats. This is due to the potential for loss of intertidal habitats due to foreshore steepening.		Continued accretion and Managed Realignment would help maintain the quality and extent of internationally designated sites as sea levels rise.		As sea levels rise more rapidly there is a risk that the internationally designated sites could start to be impacted. Managed Realignment in epoch 2 would help maintain the area and extent of intertidal habitats.
Agriculture and industry						
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts to agricultural land under this policy.		There would be no adverse impacts to agricultural land under this policy.		There would be no adverse impacts to agricultural land under this policy.

Character Area 13b: Humberston Fitties objectives for policy appraisal

Policy tested: Hold the Line in epoch 1 for the entire frontage with P3. Managed realignment to the existing secondary floodbank in epoch 2 with P4, with the defences held with P4 for epoch 3.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy		Tourism would remain viable under this policy as beaches, habitats, birdlife and other tourism assets would remain largely unaffected.		Tourism would remain viable. Accommodation between the existing defence line and the new defence line would become unprotected. The beaches would remain. Creation of intertidal habitats would occur due to Managed Realignment.		As epoch 2, but increasingly significant defence structures may impact on the aesthetics. Beaches would remain.
Infrastructure						
Avoid interruption to the A1031		The A1031 would remain unaffected under this policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would remain similar to the present day as accretion would help maintain coastal habitats.		The landscape quality may begin to be affected as increasingly significant defence structures would be required as sea levels rise. In addition the habitats and beaches could begin to reduce in quality and extent.		The landscape would be affected as habitats and would reduce in quality and extent. Also increasingly significant defence structures would be required to carry out this policy as sea levels rise.
Coastal processes						
To prevent interruption of coastal processes which create intertidal and subtidal habitats within the Humber Estuary.		There would be no significant interruption to the natural coastal processes due this policy. Some loss of intertidal habitats could occur as a result of natural foreshore steepening.		Natural coastal processes would be largely uninterrupted. Managed Realignment would help maintain processes leading to intertidal and subtidal habitats.		As epoch 2.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		This policy would maintain the current standard of protection to designated and significant historic environment assets behind the defence line. This policy would also protect assets against erosion.		The Conservation Area and some records noted by the RCZAs would be at threat from Managed Realignment.		As epoch 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Coastal defence works would largely be undertaken at or around the location of the existing defences so would not threaten to significant historic environment assets.		Defence works would not cause detrimental impacts on the designated and significant historic environment assets.		As epoch 2.

Objective - Provide sufficient time, if necessary for;	Overall Score (all Epochs)	Explanation
Community adaptation		There would be some time for community adaptation, as Managed Realignment would not occur until epoch 2.
Change of flood risk management practices		There would be limited time to adapt to changes in flood risk management practices as this occurs in epoch 1.
Research of archaeological features and ecological surveys		There would be sufficient time available under this policy.
Provision of recreational access to the foreshore.		There would be some time available to continue recreational access to the foreshore.

Policy Package 4.1 (South of Humberston Fitties to Gibraltar Point)

Character Area	Policy Appraised
Character Area 14: South of Humberston Fitties to Saltfleet	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 15: Saltfleet Haven to Theddlethorpe St Helen	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 17: Sandilands to Chapel Point	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 18a: Chapel Point to Skegness	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 18b: Skegness	Hold the line for all epochs along the entire frontage, P4 evaluated
Character Area 19: Seacroft to Gibraltar Point	Hold the line for all epochs along the entire frontage, P4 evaluated

Character Area 14: South of Humberston Fitties to Saltfleet						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		The existing embankment, natural dunes and wide beach which form an effective defence line would be maintained under a Hold the Line P4 policy.		As epoch 1, with further maintenance and upgrades if required to allow the embankment, beach and dunes to continue to provide an effective barrier to flooding.		The dunes and beach would be maintained and would continue to be used effectively to form part of the sea defence. Embankments would be maintained and raised to counter sea level rise.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the mudflats, saltmarsh and sand dunes.		The natural process of accretion would continue in this area. This would help maintain the saltmarsh and mudflats.		Continued feed of sediment to this area is likely to lead to further accretion. This would help maintain the saltmarshes despite sea level rise. It is possible that by the end of the epoch habitats could begin to be affected, as sea level rise accelerates and the rate of accretion could begin to be outpaced by sea level rise.		As sea level rise accelerates, the rate of accretion could potentially begin to be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the seaward saltmarsh edge has the potential to occur as the defence line is held, thus could lead to the loss of habitats.
Maintain and if possible, enhance the area and condition of mudflats, saltmarsh and sand dunes		Although this policy does not specifically maintain and enhance the condition of these habitats, a natural process of accretion would continue, especially in the north of this area. This would help maintain the sand dunes, saltmarsh and mudflats.		Continued feed of sediment to this is likely to lead to further accretion. This would help maintain the saltmarshes despite sea level rise. Potential for some possible impacts towards the end of the epoch is sea level rise begins to outpace accretion.		As sea level rise accelerates, the rate of accretion could potentially begin to be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the seaward saltmarsh edge could occur as the defence line is held, potentially leading to some reduction in habitat quality and extent.
Maintain and enhance populations of waders and wildfowl and grey seals		Habitats that support birds and grey seals would be maintained over this epoch under this policy due to continued accretion.		As epoch, however if sea level rise begins to outpace accretion there is the potential for some slight damage or reduction in extent of wildlife supporting habitats. This is unlikely to significantly affect wildlife and wildfowl populations.		Sea level rise could begin to outpace accretion leading to reduction of condition and extent of wildlife and wildfowl supporting habitats such as mudflats and saltmarshes. Their populations could start to be affected.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		Although this policy does not specifically maintain and enhance the condition of internationally designated habitats, a natural process of accretion would continue in this area. This would help maintain the internationally designated habitats.		As epoch 1, however coastal squeeze and beach narrowing could possibly start to impact upton internationally designated habitats if the rate of sea level rise begins to outpace accretion which presently helps to maintain the habitats.		As epochs 1 and 2, but sea level rise could potentially begin to outpace accretion which would lead to reduction in condition and internationally designated habitats.

Character Area 14: South of Humberston Fitties to Saltfleet						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Assets such as the beaches, dunes, saltmarshes, birdlife and the natural aesthetics would be maintained thus supporting a diverse tourism economy.		As epoch 1.		As epochs 1 and 2, however habitat losses would begin to occur and this would alter the coastal landscape. Increasingly significant defences and embankements may be required under this polciy which would affect aesthetics. Beaches would begin to narrow as sea level rise accelerates.
Agriculture and industry						
Protect as much grade 1 and 2 agricultural land as possible.		All grade 1 and 2 agricultural land would be protected under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts to agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.
Infrastructure						
Avoid interruption to the functioning of the A1031.		The A1031 would be unaffected under this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the drainage network including land drainage pumping stations.		The drainage network and land pumping stations would be unaffected under this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the reservoir, sewage treatment works, MOD site, oil terminal, wind farm and other key community services and utilities infrastructure.		All key community facilities and utilities infrastructure would be unaffected under this policy.		As epoch 1		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The natural processes would largely continue to shape the landscape.		As epoch 1.		As sea level rise accelerates there would be the requirement for more significant floodbanks. Saltmarshes and mudflats could reduce in extent and narrowing of beaches. Landscape would begin to be detrimentally affected
Coastal processes						
To prevent interruption of coastal processes which develop subtidal and intertidal habitats and supply sediment to other coastlines.		Due to the future accretion in this area, this policy would largely allow natural coastal processes that develop habitats and supply sediment to other coastlines to continue.		As epoch 1.		As sea level rise accelerates, the rate of accretion could begin to be outpaced by sea level rise. Generally a Hold the Line policy would not interrupt the longshore sediment transport processes supplying sediment to other coastlines because of the significant areas of sand dunes and saltmarsh infront of the defences. However in some locations where the defence is subject to wave attack and sediment removal is prevented, there is potential for some reduction in sediment supplied from this area to other coastlines.

Character Area 14: South of Humberston Fitties to Saltfleet						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		This policy would prevent damage to assets behind the current defence line.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence work would not threaten significant historic environment assets as future defence works would be similar those currently undertaken.		As epoch 1.		As epochs 1 and 2.
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		It is unlikely that community adaptation would be required as the current policy continues for all epochs.				
Change of flood risk management practices,		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links to Grimsby, Cleethorpes and Mablethorpe.		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of MOD use of the foreshore, sewage treatment works, oil terminal and other key community services and utilities infrastructure.		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys		Sufficient time available.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore will be maintained for all epochs under this policy.				

Character Area 15: Saltfleet Haven to Theddlethorpe St Helen objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.				As epoch 2.
Make effective use of existing man-made or natural defences.		The existing natural dunes and wide beach which form an effective defence line would be maintained and upgraded under a Hold the Line P4 policy.		As epoch 1, with further maintenance and upgrades if required to allow the beach / dunes to continue to provide an effective barrier to flooding.		Dunes would be maintained and upgraded and would continue to form an effective sea defence despite sea level rise.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the saltmarshes and mudflats.		The natural process of accretion would continue in this area. This would help maintain the saltmarsh and mudflats.		Continued feed of sediment to this area is likely to lead to further accretion. This would help maintain the saltmarshes despite sea level rise. It is possible that by the end of the epoch habitats could begin to be affected, as sea level rise accelerates and the rate of accretion could begin to be outpaced by sea level rise.		As sea level rise accelerates, the rate of accretion could potentially begin to be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the seaward saltmarsh edge has the potential to occur as the defence line is held, thus could lead to the loss of habitats.
Maintain and enhance the extent and condition of mudflats, saltmarshes and sand dunes if possible.		Although this policy does not specifically maintain and enhance the condition of these habitats, a natural process of accretion would continue, especially in the north of this area. This would help maintain the sand dunes, saltmarsh and mudflats.		Continued feed of sediment to this is likely to lead to further accretion. This would help maintain the saltmarshes despite sea level rise. Potential for some possible impacts towards the end of the epoch is sea level rise begins to outpace accretion.		As sea level rise accelerates, the rate of accretion could potentially begin to be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the seaward saltmarsh edge could occur as the defence line is held, potentially leading to some reduction in habitat quality and extent.
Maintain and enhance populations of birds		Habitats that support birds would be maintained over this epoch under this policy due to continued accretion.		As epoch, however if sea level rise begins to outpace accretion there is the potential for some slight damage or reduction in extent of bird supporting habitats. This is unlikely to significantly affect wildfowl populations.		Sea level rise could begin to outpace accretion leading to reduction of condition and extent of wildfowl supporting habitats such as mudflats and saltmarshes. Their populations could start to be affected.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		Although this policy does not specifically maintain and enhance the condition of internationally designated habitats, a natural process of accretion would continue in this area. This would help maintain the internationally designated habitats.		As epoch 1, however coastal squeeze and beach narrowing could possibly start to impact upton internationally designated habitats if the rate of sea level rise begins to outpace accretion which presently helps to maintain the habitats.		As epochs 1 and 2, but sea level rise could potentially begin to outpace accretion which would lead to reduction in condition and internationally designated habitats.
Agriculture and industry						
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts on agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Assets such as the beaches, dunes, saltmarshes, birdlife and the natural aesthetics would be maintained thus supporting a diverse tourism economy.		As epoch 1.		As epochs 1 and 2.

Character Area 15: Saltfleet Haven to Theddlethorpe St Helen objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Infrastructure						
Avoid interruption to the functioning of the A1031.		The A1031 would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the drainage network including land drainage pumping stations.		The drainage network including land drainage pumping stations would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of sewage works and other key community services and utilities infrastructure.		The functioning of sewage works and other key community services and utilities infrastructure would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		Landscape would remain largely similar to that of the present day under this policy as natural processes, such as accretion, continue to shape the landscape.		As epoch 1		The potential reduction of saltmarsh and intertidal habitats due to a Hold the Line policy coupled with accelerating sea level rise causing coastal squeeze, could alter the coastal landscape.
Coastal processes						
To prevent interruption of coastal processes which develop intertidal and subtidal habitats and supply sediment to other coastlines.		Natural coastal processes would continue under this policy. Accretion of the saltmarshes and intertidal habitats would continue, and sediment would continue to be supplied from this area to other coastlines as defences consist of natural dunes.		As epoch 1.		As epochs 1 and 2, however if armouring of the dunes or hard defences are required under this policy due to sea level rise potentially outpacing accretion, there could be some slight interruption to coastal processes supplying sediment to other frontages.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Significant historic environment assets behind the current defence line would be unaffected under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Due to the well developed dune system providing natural protection, no defence works are likely to be required during this epoch. If any defence works are required, they would be in the form of breach repairs to the dunes and consequently would not threaten significant historic environment assets.		As epoch 1.		As epochs 1 and 2.

Timing Objectives	**Overall Score (all Epochs)**	**Explanation**
Community adaptation.		It is unlikely that community adaptation would be required as the current policy continues for all epochs.
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.
Relocation of regional infrastructure, ensuring continued A road transport links to Mablethorpe.		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.
Relocation / adaptation of sewage treatment works, pumping stations and other key community services and utilities infrastructure.		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.
Research of archaeological features and ecological surveys		Sufficient time available.
Provision of recreational access to the foreshore.		Recreational access to the foreshore will be maintained for all epochs under this policy.

Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe) objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		Existing hard defences would be upgraded / maintained under a Hold the Line policy. Artificial replenishment of sediment to the beaches may also continue to assist in implementing a Hold the Line policy.		The current hard defences would still form the basis of the defence line, but considerable improvements, additions and maintenance would be required under this policy. Increased volumes of beach sediment replenishment would also be required .		Significant upgrades and improvements to existing defences would be required. Enhanced volumes of beach sediment replenishment would also be required.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
To maintain Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe as viable towns and seaside resorts.		In terms of protection against flooding and erosion, Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe would all be maintained as viable towns and seaside resorts.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the sandflats and sand dunes.		The natural processes relating to the sandflats and sand dunes would continue, and these features would also be maintained through artificially replenishing sediment losses.		Some uncertainty, however it is possible that processes relating to the sandflats and dunes would begin to be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes.		As epoch 2, but with further interruption to the natural processes relating to the sandflats and sand dunes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on sandflats and sand dunes.
Maintain and enhance the extent and condition of sandflats and sand dunes if possible.		The extent and condition of the sandflats and sand dunes would be maintained through natural processes and through artificially replenishing sediment losses.		Some uncertainty, however the condition and extent of the sandflats and dunes could begin to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and dunes could reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on the condition and extent of sandflats and sand dunes.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		The internationally designated habitats would be maintained by natural processes and the continued artificial replenishment of sediment.		Some uncertainty, however there is the possibility that internationally designated sites could begin to be impacted as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the internationally designated habitats.		Internationally designated sites are likely to be impacted as sea level rise accelerates and the defence line is held. It is likely that a range of engineering solutions would be required to hold the line. It is likely that increasingly significant hard defence structures would be required. Artificial beach sediment replenishments may not be adequate to maintain the internationally designated habitats.

Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe) objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Agriculture and industry						
Maintain and enhance the viability of the Viking gas storage and processing facilities and other key community services and utilities infrastructure.		The viability of key community services and utilities infrastructure is maintained under this policy.		As epoch 1, however as beaches steepen and narrow, there is the potential to interruption to pipelines etc. associated with the Viking Gas storage and processing facility.		As epochs 1 and 2, with further increase in potential for disruption to pipelines etc. associated with the Viking Gas storage and processing facility.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts on agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		The viability of a diverse tourism economy would be maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches would be artificially replenished and maintained despite sea level rise.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epochs 1 and 2, however width and quality of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates. Increasingly significant hard defences likely.
Infrastructure						
Avoid interruption to: the A157, A1104, A1031, A111 and A52;		The A157, A1104, A1031, A111 and A52 would be unaffected by this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the drainage network including: Heading, Trusthorpe, West Bank, The Cut, and Wold Grift drains; the Great Eau river; and land drainage pumping stations.		The drainage network, river, and land drainage pumping stations would remain unaffected by this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to sewage works and other key community services and utilities infrastructure.		Key community services and utilities infrastructure would remain unaffected by this policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would continue to look similar to the present day as the beaches are artificially maintained through sediment replenishments.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epoch 2 with further impacts on aesthetics of landscape due to increasingly significant defences to counter sea level rise. Quality and width of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Natural coastal processes would continue to supply sediment to other coastlines. Artificial beach replenishments would continue to provide material to supply to other areas.		As epoch 1.		Longshore transport of sediment would be largely uninterrupted, however sediment supplied to other areas may reduce as sea level rise accelerates and artificial replenishments may not be adequate to maintain beaches.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Significant historic environment assets behind the current defence line would be unaffected under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten the various assets located on the foreshore (such as the submerged forest around Mablethorpe and Sutton on Sea), and other designated and significant historic environment assets		Coastal defence works would not threaten significant historic environment assets as they are located away from the zone where defence works would occur. There is potential that some records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		As epochs 1 and 2.

Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe) objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, with P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		Depending on the mechanisms used to carry out this policy, there maybe the possibility that communities may need to adapt. For examples if beaches narrow and reduce in extent, tourism economies may need to change. If there is the requirement for community adaptation, there would be sufficient time.				
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be some time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road transport which link Mablethorpe, Sutton on Sea and Trusthorpe with Louth and Alford to the west.		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of gas terminal, sewage treatment works, and other key community services and utilities infrastructure.		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys.		Sufficient time available.				
Provision of recreational access to the foreshore.		Depending on the mechanisms used to carry out the policy, foreshore could be lost or restricted, especially in epoch 3.				

Character Area 17: Sandilands to Chapel Point objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		Existing hard defences would be upgraded / maintained under a Hold the Line policy. Artificial replenishment of sediment to the beaches may also continue to assist in implementing a Hold the Line policy.		The current hard defences would still form the basis of the defence line, but considerable improvements, additions and maintenance would be required under this policy. Increased volumes of beach sediment replenishment would also be required .		Significant upgrades and improvements to existing defences would be required. Enhanced volumes of beach sediment replenishment would also be required.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh		This policy would allow the natural processes relating to the Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh to continue as these habitats would be protected from erosion and coastal flooding.		As epoch 1.		As epochs 1 and 2.
Maintain and enhance the extent and condition of the Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh if possible		This policy would allow the natural processes relating to the Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh to continue as these habitats would be protected from erosion and coastal flooding. This would provide potential for these habitats to increase in extent and for their condition to improve.		As epoch 1.		As epochs 1 and 2.
Maintain natural processes relating to the sandflats and sand dunes.		The natural processes relating to the sandflats and sand dunes would continue, and these features would also be maintained through artificially replenishing sediment losses.		Some uncertainty, however it is possible that processes relating to the sandflats and dunes would begin to be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes.		As epoch 2, but with further interruption to the natural processes relating to the sandflats and sand dunes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on sandflats and sand dunes.
Maintain and enhance the extent and condition of sandflats and sand dunes if possible.		The extent and condition of the sandflats and sand dunes would be maintained through natural processes and through artificially replenishing sediment losses.		Some uncertainty, however the condition and extent of the sandflats and dunes could begin to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and dunes could reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on the condition and extent of sandflats and sand dunes.

Character Area 17: Sandilands to Chapel Point objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Agriculture and industry						
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts on agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		The viability of a diverse tourism economy would be maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches would be artificially replenished and maintained despite sea level rise.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epochs 1 and 2, however width and quality of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates. Increasingly significant hard defences likely.
Infrastructure						
Avoid interruption to the functioning of A111 and A52		The A111 and A52 would be uninterrupted by this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the drainage network including: Boygrift, Main, Cocking Pit, Helsey, Willoughby High, Fishers, Well Beck and Ancroft drains; and the land drainage pumping stations		The drainage network including land drainage pumping stations would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of pumping stations and other key community services and utilities infrastructure		The functioning of pumping stations and other key community services and utilities infrastructure would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would continue to look similar to the present day as the beaches are artificially maintained through sediment replenishments.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epoch 2 with further impacts on aesthetics of landscape due to increasingly significant defences to counter sea level rise. Quality and width of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Natural coastal processes would continue to supply sediment to other coastlines. Artificial beach replenishments would continue to provide material to supply to other areas.		As epoch 1.		Longshore transport of sediment would be largely uninterrupted, however sediment supplied to other areas may reduce as sea level rise accelerates and artificial replenishments may not be adequate to maintain beaches.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Significant historic environment assets behind the current defence line would be unaffected under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten significant historic environment assets as they are located away from the zone where defence works would occur. There is potential that some records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		As epochs 1 and 2.

Character Area 17: Sandilands to Chapel Point objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		Depending on the mechanisms used to carry out this policy, there maybe the possibility that communities may need to adapt. For examples if beaches narrow and reduce in extent, tourism economies may need to change. If there is the requirement for community adaptation, there would be sufficient time.				
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be some time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road transport links to Sutton on Sea and Chapel St Leonards		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of pumping stations and other key community services and utilities infrastructure		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys, and		Sufficient time available.				
Provision of recreational access to the foreshore.		Depending on the mechanisms used to carry out the policy, foreshore could be lost or restricted, especially in epoch 3.				

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		Existing hard defences would be upgraded / maintained under a Hold the Line policy. Artificial replenishment of sediment to the beaches would also continue to assist in implementing a Hold the Line policy.		The current hard defences would still form the basis of the defence line, but considerable improvements, additions and maintenance would be required under this policy. Increased volumes of beach sediment replenishment would also be required .		Significant upgrades and improvements to existing defences would be required. Enhanced volumes of beach sediment replenishment would also be required.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the sandflats, grazing marshes and sand dunes		The natural processes relating to the sandflats and sand dunes would continue, and these features would also be maintained through artificially replenishing sediment losses.		Some uncertainty, however it is possible that processes relating to the sandflats and dunes would begin to be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be unaffected as they are protected by the defences.		As epoch 2, but with further interruption to the natural processes relating to the sandflats and sand dunes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on sandflats and sand dunes. Grazign marshes would be unaffected as they are protected by the defences.
Maintain and enhance the extent and condition of sandflats, grazing marshes and sand dunes if possible		The extent and condition of the sandflats and sand dunes would be maintained through natural processes and through artificially replenishing sediment losses.		Some uncertainty, however the condition and extent of the sandflats and dunes could begin to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be maintained as they are protected by the defences.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and dunes could reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. A range of engineering solutions may be required, and it is likely that increasingly significant hard defence structures would be used. These would have detrimental impacts on the condition and extent of sandflats and sand dunes. The condition and quality of grazing marshes would remain.
Agriculture and industry						
Protect as much grade 1 and 2 agricultural land as possible.		All grade 1 and 2 agricultural land would be protected under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts on agricultural land under this policy as all land would be protected.		As epoch 1.		As epochs 1 and 2.

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy		The viability of a diverse tourism economy would be maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches would be artificially replenished and maintained despite sea level rise.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epochs 1 and 2, however width and quality of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates. Increasingly significant hard defences likely.
Infrastructure						
Avoid interruption to functioning of the A52		The A52 would be uninterrupted by this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to: the drainage network including: Willoughby High, North, Orby, Wigg, Wedland's, Common, Firsby, and Wych drains; and Ingoldmells and Chapel Basin land drainage pumping stations		The drainage network including land drainage pumping stations would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of: the sewage works; coastguard lookout stations; and other key community services and utilities infrastructure		The functioning of pumping stations and other key community services and utilities infrastructure would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would continue to look similar to the present day as the beaches are artificially maintained through sediment replenishments.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epoch 2 with further impacts on aesthetics of landscape due to increasingly significant defences to counter sea level rise. Quality and width of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Natural coastal processes would continue to supply sediment to other coastlines. Artificial beach replenishments would continue to provide material to supply to other areas.		As epoch 1.		Longshore transport of sediment would be largely uninterrupted, however sediment supplied to other areas may reduce as sea level rise accelerates and artificial replenishments may not be adequate to maintain beaches.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Significant historic environment assets behind the current defence line would be unaffected under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten significant historic environment assets as they are located away from the zone where defence works would occur. There is potential that some records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		As epochs 1 and 2.

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		Depending on the mechanisms used to carry out this policy, there maybe the possibility that communities may need to adapt. For examples if beaches narrow and reduce in extent, tourism economies may need to change. If there is the requirement for community adaptation, there would be sufficient time.				
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be some time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting Chapel St Leonards and Ingoldmells with Skegness, Horncastle and Grantham.		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of sewage treatment works and other key community services and utilities infrastructure.		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys.		Sufficient time available.				
Provision of recreational access to the foreshore.		Depending on the mechanisms used to carry out the policy, foreshore could be lost or restricted, especially in epoch 3.				

Character Area 18b: Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		Existing hard defences would be upgraded / maintained under a Hold the Line policy. Artificial replenishment of sediment to the beaches may also continue to assist in implementing a Hold the Line policy.		The current hard defences would still form the basis of the defence line, but considerable improvements, additions and maintenance would be required under this policy. Increased volumes of beach sediment replenishment would also be required.		Significant upgrades and improvements to existing defences would be required. Enhanced volumes of beach sediment replenishment would also be required.
Communities						
Protect all settlements		This policy would continue to protect all settlements against erosion and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
To maintain Skegness as a viable town and seaside resorts, and also a regional commercial centre throughout the plan period		In terms of protection against flooding and erosion, Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe would all be maintained as viable towns and seaside resorts.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the sandflats, grazing marshes and sand dunes		The natural processes relating to the sandflats and sand dunes would continue, and these features would also be maintained through artificially replenishing sediment losses.		Some uncertainty, however it is possible that processes relating to the sandflats and dunes would begin to be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be unaffected as they are protected by the defences.		As epoch 2, but with further interruption to the natural processes relating to the sandflats and sand dunes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be unaffected as they are protected by the defences.
Maintain and enhance the extent and condition of sandflats, grazing marshes and sand dunes if possible		The extent and condition of the sandflats and sand dunes would be maintained through natural processes and through artificially replenishing sediment losses.		Some uncertainty, however the condition and extent of the sandflats and dunes could begin to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be maintained as they are protected by the defences.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and dunes could reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be maintained as they are protected by the defences.
Agriculture and industry						
Protect as much grade 1 and 2 agricultural land as possible.		All grade 1 and 2 agricultural land would be protected under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts on agricultural land under this policy as all land would be protected.		As epoch 1.		As epochs 1 and 2.

Character Area 18b: Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Tourism						
Maintain and enhance the viability of a diverse tourism economy		The viability of a diverse tourism economy would be maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches would be artificially replenished and maintained despite sea level rise.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epochs 1 and 2, however width and quality of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates. Increasingly significant hard defences likely.
Infrastructure						
Avoid interruption to functioning of the A158 and the A52		The A158 and A52 would be uninterrupted by this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to: the drainage network including: Main, Winthorpe and Catchwater drains		The drainage network including would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of key community services and utilities infrastructure		The functioning of key community services and utilities infrastructure would be uninterrupted under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would continue to look similar to the present day as the beaches are artificially maintained through sediment replenishments.		As epoch 1, however increasingly large and significant hard defences may be required to maintain P4 policy as sea level rise accelerates and as artificial replenishments may not be adequate to maintain beaches.		As epoch 2 with further impacts on aesthetics of landscape due to increasingly significant defences to counter sea level rise. Quality and width of beaches may reduce as artificial replenishments may not be adequate to maintain beaches as sea level rise accelerates.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Natural coastal processes would continue to supply sediment to other coastlines. Artificial beach replenishments would continue to provide material to supply to other areas.		As epoch 1.		Longshore transport of sediment would be largely uninterrupted, however sediment supplied to other areas may reduce as sea level rise accelerates and artificial replenishments may not be adequate to maintain beaches.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Significant historic environment assets behind the current defence line would be unaffected under a Hold the Line P4 policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten significant historic environment assets as they are located away from the zone where defence works would occur. There is potential that some records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		As epochs 1 and 2.

Character Area 18b: Skegness objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		There would be no requirement for community adaptation as the current policy continues for all epochs.				
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be some time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting Skegness to Horncastle, Mablethorpe, Grantham and Boston		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of key community services and utilities infrastructure		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys, and		Sufficient time available.				
Provision of recreational access to the foreshore.		Depending on the mechanisms used to carry out the policy, foreshore could be lost or restricted, especially in epoch 3.				

Character Area 19: Seacroft to Gibraltar Point objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Hold the line P4 would prevent erosion and would maintain the standard of protection against flooding.		As epoch 1.		As epoch 2.
Make effective use of existing man-made or natural defences.		The existing embankment, natural dunes and wide beach which form an effective defence line would be maintained and would be used as part of a Hold the Line P4 policy.		As epoch 1, with further maintenance and upgrades if required to allow the embankment, beach and dunes to continue to provide an effective barrier to flooding.		The dunes and beach would be maintained and would continue to be used effectively to form part of the sea defence. Embankments would be maintained and raised to counter sea level rise.
Communities						
Protect all settlements		This policy would continue to protect all settlements and would maintain the present day standard of protection against flooding.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the mudflats, grazing marshes, saltmarshes and sand dunes		The natural process of accretion would continue in this area. This would help maintain the saltmarsh and mudflats. Grazing marshes would be maintained.		Continued feed of sediment to this area would help maintain the saltmarshes despite sea level rise. Grazing marshes would be maintained.		As sea level rise accelerates, the rate of accretion could be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the saltmarsh, sand dunes and mudflats could occur as the defence line is held, potentially leading to some loss of habitats. Grazing marshes would be maintained.
Maintain and enhance the mudflats, grazing marshes, saltmarshes and sand dunes if possible		Although this policy does not specifically maintain and enhance the condition of these habitats, a natural process of accretion would continue in this area. This would help maintain the sand dunes, saltmarsh and mudflats. Grazing marshes would be maintained.		Continued feed of sediment to this area would lead to further accretion. This would help maintain the saltmarshes despite sea level rise. Grazing marshes would be maintained.		As sea level rise accelerates, the rate of accretion could potentially begin to be outpaced by sea level rise. Steepening of the foreshore and some deterioration of the seaward saltmarsh edge could occur as the defence line is held, potentially leading to some loss of habitats. Grazing marshes would be maintained.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		Although this policy does not specifically maintain and enhance the condition of internationally designated habitats, a natural process of accretion would continue in this area. This would help maintain the internationally designated habitats.		As epoch 1, however coastal squeeze and beach narrowing could possibly start to impact upton internationally designated habitats.		As epochs 1 and 2, but sea level rise could begin to outpace accretion potentially leading to reduction in condition and internationally designated habitats.
Agriculture and industry						
Protect as much grade 1 and 2 agricultural land as possible.		All grade 1 and 2 agricultural land would be protected under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no adverse impacts to agricultural land under this policy.		As epoch 1.		As epochs 1 and 2.

Character Area 19: Seacroft to Gibraltar Point objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	**Epoch 1 (2025)**		**Epoch 2 (2055)**		**Epoch 3 (2105)**	
	Score	**Explanation**	**Score**	**Explanation**	**Score**	**Explanation**
Tourism						
Maintain and enhance the viability of a diverse tourism economy		Assets such as the beaches, dunes, saltmarshes, birdlife and the natural aesthetics would be maintained thus supporting a diverse tourism economy.		As epoch 1.		As epochs 1 and 2, however habitat losses would begin to occur and this would alter the coastal landscape and affect aesthetics. Beaches would begin to narrow as sea level rise accelerates.
Infrastructure						
Avoid interruption to functioning of the A52 and rail network		The A52 and the rail network would remain unaffected under this policy.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of the drainage network including: Cow Bank and Bell Water drains; Burgh Sluice relief channel; the Steeping River; and land drainage pumping stations		The functioning of the drainage network and pumping stations would remain uninterrupted.		As epoch 1.		As epochs 1 and 2.
Avoid interruption to the functioning of pumping stations and other key community services and utilities infrastructure		Key community services and utilities infrastructure would remain uninterrupted under this policy.		As epoch 1.		As epochs 1 and 2.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The natural processes would largely continue to shape the landscape.		As epoch 1.		As sea level rise accelerates there would be the requirement for more significant floodbanks. Saltmarshes and mudflats could reduce in extent and narrowing of beaches. Landscape would begin to be detrimentally affected
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Due to the presence of sand dunes along the frontage and the continuation of artificial beach sediment replenishments in updrift areas, future accretion would continue in this area allowing natural coastal processes that supply sediment to other coastlines to continue.		As epoch 1.		Sediment would continue to be supplied from this area, as a Hold the Line would not interrupt the longshore sediment transport processes supplying sediment to other coastlines.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding		Assets behind the current defence line would continue to be protected against flooding and erosion under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would be in the form of dune maintenance and flood embankment repairs and upgrades. Consequently there would be no damage to significant historic environment assets.		As epoch 1.		As epochs 1 and 2.

Character Area 19: Seacroft to Gibraltar Point objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P4 evaluated.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
Timing Objectives	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		There would be no requirement for community adaptation as the current policy continues for all epochs.				
Change of flood risk management practices.		Changes to flood risk management practices could be required in the future in order to carry out this policy. There would be sufficient time to adapt to changes in flood risk management practices if required.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting the area to Skegness		Relocation of regional infrastructure would not be required under a Hold the Line P4 policy.				
Relocation / adaptation of pumping stations and other key community services and utilities infrastructure		Relocation / adaptation of key community services and utilities infrastructure would not be required under a Hold the Line P4 policy.				
Research of archaeological features and ecological surveys, and		Sufficient time available.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore will be maintained for all epochs under this policy.				

Annex E: SEA Scoping Report

Humber Estuary Coastal Authorities Group

Flamborough Head to Gibraltar Point Shoreline Management Plan 2

Strategic Environmental Assessment Scoping Report

Consultation Draft

May 2009




Revision Schedule

Strategic Environmental Assessment: Scoping Report
May 2009

Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	16/03/09	Draft	**Gemma Costin** Assistant Consultant	**Dr John Pos** Associate	**David Dales** Director
02	23/04/09	Draft for CSG review	**Gemma Costin** Assistant Consultant	**David Dales** Director	**David Dales** Director
03	07/05/09	Consultation draft	**Laura Mitchell** Engineer	**David Dales** Director	**David Dales** Director

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Table of Contents

List of Tables

1 Introduction

1.1 The Purpose of Strategic Environmental Assessment (SEA)

SEA involves the systematic identification and evaluation of the potential environmental impacts of high-level decision-making (e.g. a plan or programme). By addressing strategic level issues, SEA aids the selection of the preferred options, directs individual schemes towards the most appropriate solutions and locations for the environment and helps to ensure that resulting schemes comply with legislation and other environmental requirements. The SEA process also facilitates a transparent audit trail of how the Plan has been revised to take into account the SEA.

Guidance on producing Shoreline Management Plans (Defra, 2006a, b) states that the potential environmental effects of all policies must be considered before deciding which policies will be adopted. Consideration should be made with regards to both the positive and negative effects of options on wildlife and habitats, populations and health, soil, water, air, climate factors, landscape, cultural heritage and the inter-relationships between these receptors.

In 2001, the European Union legislated for SEA with the adoption of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the 'SEA Directive'). The Directive entered into force in the UK on 21 July 2004 and applies to a range of plans and programmes including Shoreline Management Plans (SMPs).

SMPs clearly set a framework for future development and have much in common with the kind of plans and programmes for which the Directive is designed. As a result, it is recommended (Defra, 2006a) that operating authorities assess policies using the approach described in the Directive. The legislative act which transposes the Directive into domestic law is the Environmental Assessment of Plans and Programmes Regulations (SI 1633, 2004). The main aim of the EU Directive is to "provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development".

It is important to note that production of an SEA is not a statutory requirement for an SMP; however, Defra SEA guidance recommends that the approach described in the SEA Directive is used so this methodology will be followed when undertaking this assessment.

This document represents the first stage in the process of providing an SEA for the Humber Estuary Coastal Authorities Group (HECAG) SMP. The document has made use of the following documents and guidance:

- Defra guidance on SEA (2008),
- Environment Agency guidance on SEA (2006),
- Guidance from Environment Agency NEAS officers (2008/2009),
- Internal Environment Agency guidance on SEA of internal Plans and Programmes (2004),
- Shoreline Management Plan guidance: Volume 1: Aims and requirements (2006).

A breakdown of the SEA Directive requirements and where they are addressed in this report is shown in Table 1-1.

Table 1-1: SEA Directive Checklist

Environmental Report Requirements (from SEA Directive)	Section of this Report
(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;	Section 1, 2 and 3
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Section 3
(c) the environmental characteristics of areas likely to be significantly affected;	Section 3
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC (The Birds Directive) and 92/43/EEC (The Habitats Directive);	Section 3
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	Sections 2, 3 and 4
(f) the likely significant effects on the environment, including on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage including architectural and archaeological heritage; landscape; and the interrelationship between the above factors;	To be included in the SEA Environmental Report
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	To be included in the SEA Environmental Report
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	To be included in the SEA Environmental Report
(i) a description of the measures envisaged concerning monitoring in accordance with Article 10;	To be included in the SEA Environmental Report
(j) a non-technical summary of the information provided under the above headings.	To be included in the SEA Environmental Report

1.2 The Relationship between the SMP and the SEA process

The review of SMPs is being developed to ensure that sustainable coastal erosion and flood risk management policies are provided to deal with existing and emerging factors and issues in the coastal zone. The SMP provides the opportunity to develop policy for sustainable shoreline management, which is rooted in a consideration of the environmental, social and economic issues which are evident for a given coastal cell.

The SEA is being undertaken to provide an input to the SMP decision-making process. The SEA and SMP processes are closely integrated and will feed into each other throughout. Figure 1-1 illustrates the process.

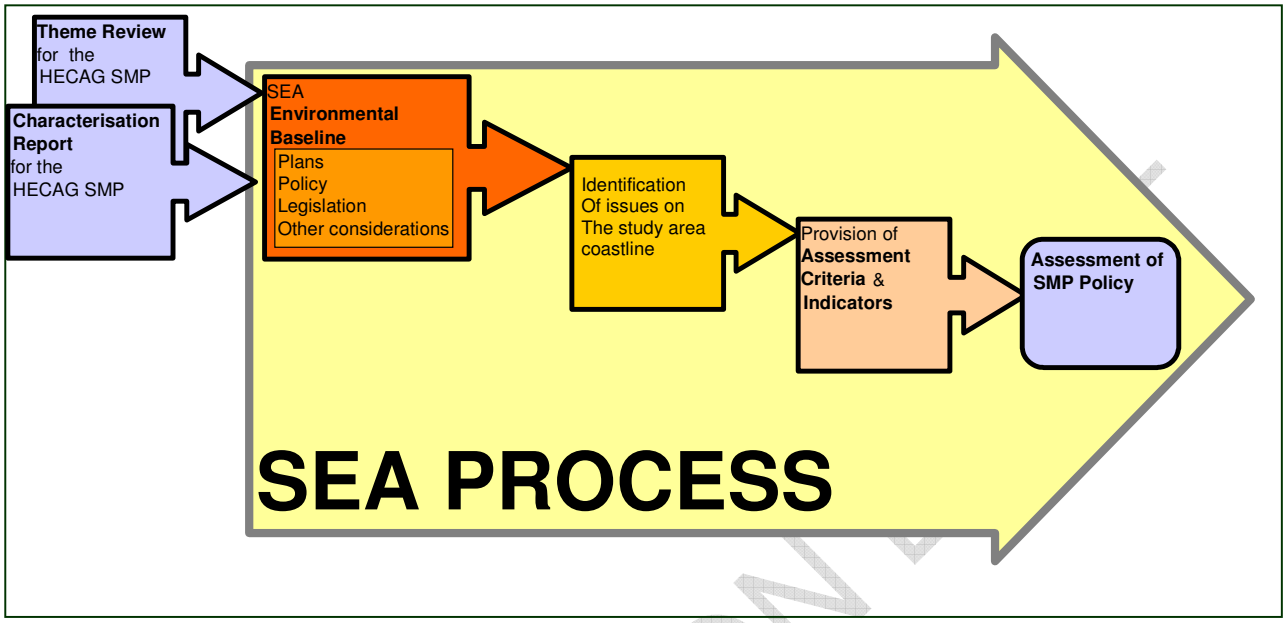


Figure 1-1: SEA and SMP Process (adapted from Suffolk SMP, Royal Haskoning 2008)

1.3 Study Area and Background to the Shoreline Management Plan

The Humber Estuary Coastal Authorities Group (HECAG) has been tasked by Government with producing a second strategic plan for managing the coastline, from Flamborough Head to Gibraltar Point, for the next 100 years. Scott Wilson has been commissioned by HECAG to prepare the draft SMP which is expected to be published in 2009.

The first HECAG SMP (1998) covered the coast from Flamborough Head to Humberston Fitties. The Lincolnshire coast from Humberston Fitties to Gibraltar Point was considered separately in the Lincolnshire Shoreline Management Plan, prepared under the direction of the Anglian Coastal Authorities Group (ACAG) in 1996. Work undertaken since 1996 has established that sediment transport occurs across the mouth of the Humber so processes along the Holderness coast have an impact along the Lincolnshire coastline. The boundary for the second Shoreline Management Plan has therefore been extended to ensure effective management of these wider coastal processes; the SMP covers the coastline from Flamborough Head to Gibraltar Point. The Humber Flood Risk Management Strategy covers the inner, middle and outer Humber Estuary including the coastline between Easington and Saltfleet. This is indicated by the brown dotted line on Figure 1-2.

Figure 1-2 shows the study area.

Note that the Humber Flood Risk Management Strategy has recently been published (March 2008) and the area covered by the Humber Flood Risk Management Strategy (shown as a brown dotted line in Figure 1-2) overlaps the HECAG SMP area. To ensure this overlap is addressed, there is close communication

between the project teams with the Humber Strategy team represented on the HECAG SMP client steering group.

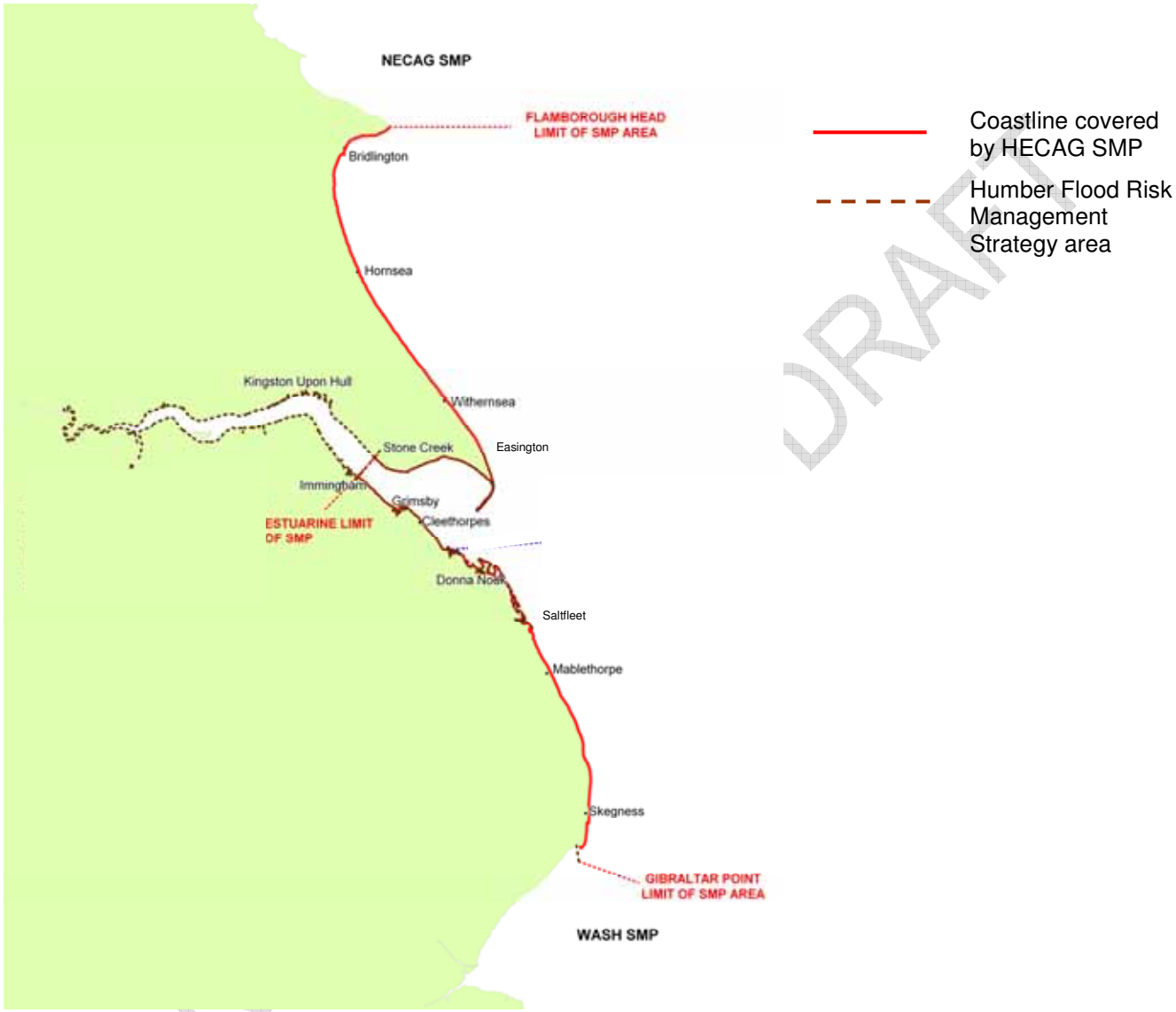


Figure 1-2: HECAG SMP Study Area

1.4 Shoreline Management Plans

An SMP provides a large-scale assessment of the risks associated with coastal processes and presents a long-term policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner. In doing so, an SMP is a high level document that forms an important element of the strategy for flood and coastal defence and also provides guidance for spatial planning within the coastal zone. It is intended that this SMP is acceptable to all communities living and

working in the coastal zone. An SMP aims to manage risk by employing a range of methods which reflect both national and local priorities, to:

- Reduce the threat of flooding and erosion to people and their property; and
- Benefit the environment, society and the economy as far as possible, in line with the Government's 'sustainable development principles[1]'.

The current program of SMPs around the coast is a review of the first generation of SMPs produced in the 1990s and reflects the availability of new coastal processes information (as discussed above), new considerations (site designations etc), and greater certainty about climate change.

SMP guidance (Defra, 2006a) provides the following SMP objectives:

- 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; and
- Meet international and national nature conservation legislation and aim to achieve the biodiversity objectives.

Four generic SMP policy options available for shoreline management in the second generation SMPs are presented in Table 1-2. The choice of policy for shoreline management will depend on the technical, environmental, social and economic characteristics of each section of coastline.

Table 1-2: SMP Option and Description

SMP Option	Description of Option
Hold the Line (HtL)*	Hold the existing defence line. This policy will cover those situations where work or operations are carried out on the existing defences (such as beach recharge, rebuilding the toe of a structure, building offshore breakwaters and so on. Included in this policy are other policies that involve 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.
Advance the Line (AtL)*	Advance the existing defence line by building new defences on the seaward side of the original defences. Using this policy should be limited to those policy units where significant land reclamation is considered.
Managed Realignment (MR)*	Managed realignment by allowing the shoreline to move backwards, with management to control or limit movement (such as reducing erosion or building

[1] Defra, 2006. *Shoreline management plan guidance*, *Volume 1: Aims and Requirements* London, Department for Environment, Food and Rural Affairs, Defra, March 2006

	new defences on the landward side of the original defences).
No Active Intervention (NAI*)	No active intervention, where there is no investment in coastal defences or operations.

*These polices may be applied to any of the three timescales short term (up to the year 2025), medium term (between 2025 and 2055) and long term (between 2055 and 2105). These three periods are known as 'epochs' within the SMP.

2 Context and Methodology

2.1 SEA Process Overview

The SEA process to accompany the production of the SMP is intended to ensure that consideration of the environmental issues relating to the coast is central to the development and evaluation of policy. This SEA therefore provides the framework to support a systematic evaluation of the environmental issues relating to the study area and to develop assessment criteria focused on these issues. The following sections summarise the approach taken to achieve this task, and the way in which environmental issues have been identified and assessment criteria have been developed.

The purpose of this scoping stage is to set out the available baseline information and subsequently identify the assessment criteria which will provide the basis for the assessment of SMP policy.

The aim of the SEA is to advise the Plan makers in their choice of policy based on the potential impacts that those policies may have on the environment. The likely significant effects will be identified by assessing the plan against a series of assessment criteria (see Section 4), which have been developed through scoping in response to environmental issues for this area. The assessment criteria provide the 'framework' for the assessment of SMP policy.

This Scoping Report sets out the findings of the scoping process, which has resulted in the development of the assessment criteria. The assessment criteria are based upon a review of relevant plans, policy, legislation and the environmental baseline. One of the key sources of information within this process has been the Thematic Review and Characterisation Reports which form a key part of the evidence base for the SMP. These reports give a detailed commentary of all the features located in the coastal zone (social, economic and environmental) and provide the basis for a consideration of the key issues facing shoreline management in this area. Other pertinent plans have been identified and evaluated to establish any other relevant objectives that the plan and the SEA will have to take into account.

2.2 Prediction and Evaluation Methodology

The next stage of the SEA will assess the draft SMP policies and options against the assessment criteria included in Section 5. Following the identification of key impacts, expert judgment will be used to make a high level assessment of the significance of these impacts following the widely accepted Source-Pathway-Receptor model. This information will be used to inform selection of policy.

The SEA Directive main receptors are:

- Biodiversity, flora and fauna;
- Population;
- Human health;
- Soil;
- Water;
- Air;
- Climatic factors;
- Material assets;
- Cultural heritage including architectural and archaeological heritage; and
- Landscape.

There may be a degree of interrelationship between the above factors.

The assessment will be based on a number of key questions based around the nature of the impact and the nature of the receiving environment or receptor.

Nature of Impact:

- Spatial extent of effect;
- Temporal extent of effect;
- Probability of effect occurring;
- Frequency of effect;
- Permanence of effect; and
- Cumulative/secondary effects.

Nature of Receptor

- Vulnerability and sensitivity of impacted environment,
- Impact upon environmental protection objectives/targets.

Following identification of the main impacts, a level of significance will be assigned based on the importance of the receptor and the magnitude of the effect. Given that the SMP document and its policies are high level, the assessment will be based on established effects wherever possible, but will rely heavily on expert judgment of anticipated effects.

2.3 Data Gaps and Uncertainty

The SEA will use existing data sources and reviewed baseline data, together with data received through the consultation process. This information will be considered with respect to whether the information is at the right scale, up to date, unbiased and accurate. Data gaps or uncertainties will be identified through the process.

Following the assessment of likely significant effect, mitigation measures may be required to avoid, remove or minimise likely negative impacts. A monitoring plan may be recommended to manage uncertainty arising from unexpected environmental effects. The SEA Environmental Report will include indicators to monitor the key effects of the Plan, as required under the SEA Directive.

3 Baseline Data and Policy Review

3.1 Introduction

Collection of baseline information forms an essential part and requirement of the SEA Directive.

The SEA Directive requires:

"the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme" and "the environmental characteristics of areas likely to be significantly affected" to be included into the Environmental Report.

(Annex 1(b) and (c) of the SEA Directive

The SEA is a strategic document and it is vital to obtain sufficient baseline information on the current and likely future state of the area in order to enable the Plan's effects to be adequately predicted and evaluated. Where possible, data has been collected to show either a spatial or temporal trend. This allows for a more informed judgment of the current baseline.

The scale and level of detail of an SEA is proportionate to the plan for which it is being undertaken. An SMP is a high level document and therefore this SEA considers key features and characteristics of the study area that would influence decisions at a strategic level.

The Thematic Review provides the main source of information for the baseline review and determines key environmental issues in the study area, supplemented with data obtained through the consultation process. The SMP process requires a detailed assessment of the key features of the coastline, and the Thematic Review provides an extensive tabulated and narrative based account of this. To avoid duplication, this report is found in Appendix D of the SMP.

The baseline review is set out according to character area as defined in the Characterisation Report. A review of the natural environment is then followed by a review of pertinent policy for the study area. A full policy review can be found in Appendix A of this document. Due to the high level strategic nature of the SMP, it has not been possible to focus on communities at the character area scale, instead, the review of communities including population and human health has been undertaken at a Local Authority Scale, as this was deemed more appropriate for a strategic study. Communities have therefore been reviewed first, followed by a more detailed review of the state of current SEA receptors on a character area basis.

The key features along the coast have been used to develop a characterisation of the SMP frontage. The entire frontage has been split into nineteen character areas. The divisions between the areas have been created so that each area has a broadly similar character in terms of land use, geography and coastal character. Further detail about the divisions between character areas is provided in Table 3-1.

Figure 3-1 shows a map of the locations of the character areas.

Figure 3-1: Character Areas

Table 3-1: Divisions between character areas

Area	Basis for location of area boundaries
Area 1: Flamborough Head to Sewerby	Rural – urban land use change
Area 2: Bridlington to Hilderthorpe	Urban-rural land use change
Area 3: Wilsthorpe to Atwick	Rural - urban land use change
Area 4: North Cliff to Hornsea Burton (Hornsea)	Urban-rural land use change
Area 5: Rolston to Waxholme	Rural - urban land use change
Area 6: Owthorne to Hollym (Withernsea)	Urban-rural land use change
Area 7: Hollym to Dimlington Cliffs	Rural-industrial land use change
Area 8: Dimlington and Easington Gas Terminals	Industrial - rural land use change
Area 9: Easington to Kilnsea	Spurn is unique coastal feature – considered separately – rural land use
Area 10: Kilnsea to Spurn Point	Spurn is unique coastal feature – considered separately – rural land use.
Area 11: Easington Road to Stone Creek	SMP2 boundary
Area 12: East Immingham to Grimsby Docks	Industrial-urban land use change
Area 13a: Grimsby and Cleethorpes	Humberston Fitties considered separately because of flood risk issues
Area 13b: Humberston Fitties	Urban-rural land use change
Area 14: South of Humberston Fitties to Saltfleet	Change in coastal defences – rural land use.
Area 15: Saltfleet Haven to Theddlethorpe St Helen	Rural - urban land use change
Area 16: Viking Gas Terminal to Sandilands	Urban-rural land use change
Area 17: Sandilands to Chapel Point	Rural - urban land use change
Area 18a: Chapel Point to Skegness	Skegness considered separately because of its significance within East Lindsey's Local Development Framework
Area 18b: Skegness	Urban-rural land use change
Area 19: Seacroft to Gibraltar Point	

The influence of the coastal zone and the extent of the potential flood and/or erosion risk largely determine the landward extent of the Character Areas. For example, where low-lying land stretches many kilometres inland in significant areas of Lincolnshire, the characterisation includes key features located a considerable distance from the shoreline, as they are still affected by shoreline management. Where coastal low-lying land is minimal, or erosion risk is the main threat, the characterisation covers much shorter distances inland.

3.2 Communities

The Index of Multiple Deprivation 2007 combines a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. This allows each area to be ranked relative to one another according to their level of deprivation. The Index of Multiple Deprivation maps deprivation across England by super output area, taking into account the following socio-economic criteria:

- Living environment;
- Crime;
- Barriers to housing and services;
- Education and skills;
- Health;
- Employment; and
- Income.

Super output areas are designed for the collection and publication of small area statistics. They were created with the intention that they would not be subject to frequent boundary change. This makes super output areas more suitable to analyse statistical information (such as population) figures than other geography units (such as Wards) because they are less likely to change over time, and consequently super output areas are more suitable to map changes over time.

3.2.1 Areas 1 to 11: Flamborough Head to Stone Creek

Policy approaches for the Coastal sub-area of the East Riding are set out in the Yorkshire and Humber Plan: Regional Spatial Strategy (published in 2008). The Regional Spatial Strategy will focus new development on the Scarborough urban area (north of the SMP boundary), with supporting growth at Bridlington.

Bridlington is identified as a Principal Town with Hornsea and Withernsea identified as Local Service Centres. Withernsea is also identified as having particular needs for wide ranging regeneration due to its declining economy and relatively high unemployment and deprivation levels. The Regional Spatial Strategy identifies that risks from flooding, erosion and landslip along the coast should be avoided through roll-back approaches (i.e. moving development back away from the coastline) to relocate existing uses.

SEA requires an examination of population and human health and this assessment has revealed that in the East Riding, deprivation has become more focused on certain areas of the coastline – Bridlington, south of Bridlington and Withernsea/Welwick. In the East Riding, the areas with the worst health records are also

found in Bridlington. Within the East Riding it is clear that deprivation is concentrated along much of the length of coast line, although deprivation does not reach the extreme levels that it does in the other authorities.

3.2.2 Areas 12 to 13b: East Immingham to Humberston Fitties

Policy approaches for the Humber Estuary sub-area are set out in the Yorkshire and Humber Plan: Regional Spatial Strategy (published in 2008). Grimsby and Cleethorpes are identified as Sub Regional Towns.

North East Lincolnshire Council's Annual Monitoring Report for 2008 states that chemical industry, manufacturing, port activities and food processing have formed the main economic base of North East Lincolnshire since the decline of the fishing industry. In particular, the recent history of Grimsby is tied to the development of its ports and docks. Grimsby's economy has suffered from industrial decline and restructuring and economic indicators show falling performance in recent years.

In parts of Grimsby there are serious levels of social and economic deprivation, high crime levels, fuel poverty, poor health and worklessness. In Grimsby as a whole there is a need to improve the activity levels and skills of the potential workforce. There are low levels of employment growth and participation, and so employment growth and diversification, especially of service jobs must be pursued.[2]

There is a substantial amount of land to facilitate growth and rejuvenate former employment sites in the urban area and regenerate key sites including the Grimsby Fish Docks[3]. The role of Cleethorpes as a focus for tourism will be supported whilst recognising the attraction of the waterfront for residential development, and the estuary as internationally significant habitat.

Southeast of Grimsby are the towns of Humberston Waltham and New Waltham, all of which are closely associated with the Grimsby/Cleethorpes conurbation.

The Yorkshire and Humber Plan: Regional Spatial Strategy states that there have been historic population losses from Grimsby to surrounding areas (although not to the same extent as Hull), which should be arrested by a range of urban regeneration and other policy approaches. The Regional Spatial Strategy promotes strengthening the role of Grimsby/Cleethorpes as a 'Sub-Regional Town', particularly through town centre renaissance and housing renewal and growth. In particular the Regional Spatial Strategy seeks to:

- Foster value-added port-related activities,
- Encourage growth and diversification, particularly the development of a stronger service sector,
- Enhance the tourism offer and attraction of Cleethorpes.

The Humber area suffers from a significant degree of polarisation in terms of social and economic characteristics and this is reflected in the diverse physical condition of, and market demand for housing. Grimsby has smaller and less intense concentrations of housing stress than Hull, but none the less Renaissance Programmes are underway. There are also areas of strong market pressure and affordability issues, although these areas tend to be south of Grimsby/Cleethorpes, away from the estuary.

[2] Secretary of State's Proposed Changes to the Yorkshire and Humber Plan: Regional Spatial Strategy (2008)2007)
[3] North East Lincolnshire Unitary Authority Annual Monitoring Report (2008)AMR

The emerging Local Development Framework for North East Lincolnshire is likely to have a focus on developing and improving vital and viable town centres. This will involve focusing retail development on the town centres of Grimsby, Cleethorpes and Immingham to strengthen their retail offer, and where appropriate bring about regeneration; securing high quality developments. This should be driven by the 'Renaissance Programme', which links priorities for housing with community and regeneration objectives, seeking to build sustainable high quality communities.

Within North East Lincolnshire there are five Super Output Areas that rank within the 200 most deprived Super Output Areas in the country in terms of Index of Multiple Deprivation. The most deprived four are located close to each other in central Grimsby, relatively near to the docks. In North East Lincolnshire, poor health is focused in Central Grimsby. However, Grimsby does not suffer from poor health to the same degree that it does with deprivation more generally, with only two Super Output Areas within the worst 1,000 Super Output Areas nationally in terms of health

3.2.3 Areas 14 to 19: South of Humberston Fitties to Gibraltar Point

In East Lindsey there are small but significant pockets of social deprivation in parts of the District, particularly along the coast, which are among the most deprived in the East Midlands.[4] There is a larger proportion of older people living in East Lindsey than the national norm and a large number of people with longstanding health conditions or disabilities retire to this area, often on relatively low fixed incomes.[4]

Skegness remains one of the UK's premier seaside towns. Holiday centres along the coast such as Skegness and Mablethorpe provide employment, although much of it is seasonal. However Skegness and Mablethorpe also contain concentrated areas of deprivation, which should continue to be addressed by regeneration initiatives as a priority.[5] Within the Eastern Sub-Area, Skegness and Mablethorpe are earmarked for regeneration by the Regional Spatial Strategy.

Deprivation appears to have become more focused and more severe in parts of East Lindsey (in and around Skegness and Mablethorpe). In East Lindsey poor health is very much associated with settlements along the coast in a similar way to deprivation more generally.

3.3 Area 1: Flamborough Head to Sewerby

3.3.1 Natural Environment and Landscape

The landscape of the area is largely open and rural. The dominant land use is grade 3 agricultural land, which is used mainly for arable farming with some small scale grazing. The agricultural land is interspersed with the small nucleated settlements of Flamborough, Sewerby, Marton and The Crofts. Small rural communities and isolated farms are also scattered throughout the area. There is a golf course near Sewerby that attracts visitors and recreation.

Flamborough Head is internationally designated as a Special Protection Area and Special Area of Conservation. This area is also a Sensitive Marine Area and Site of Special Scientific Interest. The entire headland is also a Heritage Coast and contains three Geological Conservation Review sites.

4 East Lindsey District Council Core Strategy Issues and Options (2007)
5 The Regional Spatial Strategy for the East Midlands (RSS8, 2005)

3.3.2 Tourism

The small pocket beach at South Landing is designated as EC bathing beach and attract visitors.

3.3.3 Infrastructure

Infrastructure within the area includes a sewage treatment works and outfall south of Flamborough. There is also an RNLI station at South Landing and a fog signal station at Flamborough Head.

3.3.4 Historic Environment

There is a designated conservation area in Flamborough village. The area includes many listed buildings including the Grade 1 listed building at Sewerby Hall. Scheduled Monuments in the area include: an Operation Diver heavy anti-aircraft gun site at Flamborough Head, Flamborough Castle, Danes Dyke, and an Anglo-Saxon cemetery at Home Farm. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.4 Area 2: Bridlington to Hilderthorpe

3.4.1 Natural Environment and Landscape

The coastal hinterland is almost entirely urbanised with a busy commercial and tourist base at its centre surrounded by fairly high density residential housing. Towards the rear of the area, the residential density falls slightly as agricultural land begins to overlap the outskirts of the town. There are also many commercial properties and an industrial estate at Bessingby.

3.4.2 Tourism

The beach that fronts the town is an EC designated bathing beach and provides an important tourist attraction and recreational resource. The harbour area provides facilities for the local fishing community and is a focus for tourist and water sports enthusiasts.

3.4.3 Infrastructure

Infrastructure in the area includes a sewage treatment works, harbour, a RNLI station, a coastguard station and a train station. Bridlington is regionally well connected by a railway linking Hull to Scarborough. Access to the north (Scarborough) and south (Hull and Beverley) is available by the A615. The A614 provides a link to areas to the west.

3.4.4 Historic Environment

The Old Town area of Bridlington is a designated Conservation Area and the deserted medieval village of Hilderthorpe is a Scheduled Monument, and there are numerous listed buildings in the town. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.5 Area 3: Wilsthorpe to Atwick

3.5.1 Natural Environment and Landscape

This largely rural stretch of coastline is characterised by undulating low glacial till cliffs interspersed with small sections of privately built coast protection works. The dominant land use of the area is grade 2 and 3 agricultural land which is predominantly used for arable farming. The farmland is interspersed with small local settlements, rural communities and farmsteads. There are Sites of Special Scientific Interest at Withow Gap, Skipsea, and Skipsea Bail Mere.

3.5.2 Tourism

Caravan and camping parks are integral to these coastal settlements and there is also a golf course at Out Leys and several fishing lakes that provide important recreational resources. The beach is used for informal recreation activities such as fishing and there are several EC designated bathing beaches along this area that can be accessed by a number of footpaths along the frontage.

3.5.3 Infrastructure

Infrastructure in the area includes a natural gas storage and processing facility north of Atwick. There are several drain outfalls and the Barmston Main drain outfall is protected by coastal defences. The northern parts of the area are regionally well connected through the A165 which runs approximately north-south through the area.

3.5.4 Historic Environment

There is a designated Conservation Area at Atwick. There are also several listed buildings in the area. The Royal Observer Corps underground monitoring post south of Skipsea is a designated Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.6 Area 4: North Cliff to Hornsea Burton (Hornsea)

3.6.1 Natural Environment and Landscape

Hornsea is a small coastal town and consists of a mixture of residential properties, hotels and other tourist-related developments, interspersed with green spaces and parks.

Set back about one kilometre from the shoreline is Hornsea Mere, a Special Protection Area and Site of Special Scientific Interest. It forms an important habitat and significant amenity with recreational, educational and conservation value. Hornsea Mere is surrounded by agricultural fields and woodland and is linked to the sea by Stream Dyke.

3.6.2 Tourism

The local economy is highly dependent on tourism and recreation. Hornsea has a Blue Flag bathing beach and this provides a basis for recreation activities such as swimming, fishing and sailing. The town is bounded to the north and south by caravan and camping parks that are present on the coastal fringe. The dominant land use of the rural land behind the town is grade 2 and 3 agricultural land.

3.6.3 Infrastructure

Infrastructure in the area includes a sewage treatment works that serves the town.

3.6.4 Historic Environment

The central part of Hornsea is designated as a Conservation Area. The area also contains two Scheduled Monuments which include a moated site at Hall Garth Park and the deserted village of Southorpe. There are also many listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.7 Area 5: Rolston to Waxholme

3.7.1 Natural Environment and Landscape

This frontage is characterised by a gently undulating landscape fronted by undefended glacial till cliffs. The dominant land use of the area is grade 3 agricultural land which is mainly used for arable farming with some pastoral grazing. Inland, Lambwath Meadows is a Site of Special Scientific Interest.

3.7.2 Tourism

The beaches are accessible at several locations along the frontage and there is an EC designated bathing beach at Tunstall. The beaches form an important feature that attracts a variety of informal recreational activities including fishing. There are caravan parks at Aldbrough, North Cliff and Tunstall.

3.7.3 Infrastructure

Infrastructure within the area includes sewage treatment works and a natural gas storage facility approximately 2.5 km south east of Aldbrough. There is a Ministry of Defence site in the vicinity of Cowden Parva. There are no A roads within the area.

3.7.4 Historic Environment

There are several listed buildings within the area including a Grade 1 listed building at Grimston Garth and there is a designated Conservation Area at Tunstall. Two moated sites near Grimston Garth are designated as a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.8 Area 6: Owthorne to Hollym (Withernsea)

3.8.1 Natural Environment and Landscape

The area mainly consists of residential housing. Withernsea is a small coastal town located round the A1033 which bisects the town. The town is bounded by several caravan parks to the north and south. Withernsea provides many local and regional services and facilities. At the rear of the town the residential housing gives way to grade 2 and 3 agricultural land, used predominantly for arable farming.

3.8.2 Tourism

Tourism is a key economic driver for the area and Withernsea has many visitor attractions including an EC designated bathing beach. The beach is an important recreational resource for a variety of activities including use by anglers and walkers. Local fishermen use the nearshore waters for netting and boat launching and landing access is available.

3.8.3 Infrastructure

The area includes sewerage infrastructure, a RNLI station and coastguard station. The A1033 forms the town's major communication route with areas to the south and west.

3.8.4 Historic Environment

There are listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.9 Area 7: Hollym to Dimlington Cliffs

3.9.1 Natural Environment and Landscape

This frontage is composed of cliffs developed in glacial tills. The main land use is grade 2 and 3 arable land. The Dimlington cliffs are designated as a geological Site of Special Scientific Interest. There are a few small settlements in the area, with the main villages being Holmpton, Hollym and Out Newton. There are also several scattered farmsteads and small communities in the area.

3.9.2 Tourism

The beach is used for a range of recreation activities including fishing.

3.9.3 Infrastructure

The main infrastructure of the area comprises the sewage works at Hollym, Out Newton wind farm and a RAF underground bunker south of Hollym, which is also a visitor attraction. Hollym is connected to Withernsea and Hull by the A1033.

3.9.4 Historic Environment

There is a Conservation Area in Holmpton. The area also has a few listed buildings. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.10 Area 8: Dimlington and Easington Gas Terminals

3.10.1 Natural Environment and Landscape

The area is fronted by large industrial sites containing British Gas and British Petroleum gas terminals which are located on the cliff top at Dimlington, just north of Easington. These supply 20 - 25 % of the UK's

natural gas and are defended by a rock revetment. Behind the gas terminals is grade 3 agricultural land used for arable farming.

3.10.2 Tourism

There are no specific tourism-related features in this area.

3.10.3 Infrastructure

There are no A roads or community infrastructure within the area.

3.10.4 Historic Environment

There are no designated historic environmnent assets within this character area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.11 Area 9: Easington to Kilnsea

3.11.1 Natural Environment and Landscape

In the north of the area, the coastal village of Easington is located between 300 metres and one kilometre behind the cliff line.

The nearshore zone is used by fishing boats which currently have a privately built launching and landing access at Easington.

The saline lagoons and dune field contain many important habitats and are designated as part of the Humber Estuary Special Protection Area and Ramsar site as well as being a Site of Special Scientific Interest.

3.11.2 Tourism

There are two caravan parks on the coastal fringe to the east of Kilnsea and Easington.

3.11.3 Infrastructure

There is little infrastructure in the area, with no A roads present in the area.

3.11.4 Historic Environment

Easington is a designated Conservation Area. This area has a few listed buildings and the Tithe Barn is a designated Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.12 Area 10: Kilnsea to Spurn Point

3.12.1 Natural Environment and Landscape

Spurn peninsula comprises open land with different coastal habitat types including sand dunes and sandy beaches on the eastern shoreline and a sandy foreshore at the head giving way to mudflats and saltmarsh over much of the western shoreline.

Spurn is an important area for nature conservation and is designated as part of the Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. The area is also a National Nature Reserve and is included within the Spurn Heritage Coast.

3.12.2 Tourism

There is extensive recreational use based mainly around walking and observing the wildlife.

3.12.3 Infrastructure

The infrastructure of the area includes a permanently manned lifeboat station at Spurn Head where there are also residential properties used by the RNLI crew. Other facilities include the Humber pilots station, sewage treatment infrastructure, fuel tanks, and field centre and observatory facilities associated with the nature reserve.

3.12.4 Historic Environment

Spurn Head has a disused lighthouse and WW1 artillery batteries which are of historical interest. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.13 Area 11: Easington Road to Stone Creek

3.13.1 Natural Environment and Landscape

The area is predominantly rural and comprises mainly grade 2 and 3 agricultural land with a small area of grade 1 agricultural land towards the centre of Sunk Island.

The Humber Estuary is designated as a Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest and part of the area is within the Heritage Coast.

3.13.2 Tourism

There are no specific tourism-related features in this area.

3.13.3 Infrastructure

The area includes drainage infrastructure such as pumping stations and outfalls in conjunction with a number of drains, dikes and streams to aid the drainage of the low-lying land. The area has a limited road network and connections to other areas are generally restricted.

3.13.4 Historic Environment

There are Scheduled Monuments within the area, including two moated sites near Winsetts Farm and Winestead Manor, and a heavy anti-aircraft gunsite at Stone Creek. The area also contains many listed buildings and a Conservation Area at Sunk Island. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.14 Area 12: East Immingham to Grimsby Docks

3.14.1 Natural Environment and Landscape

The coastal hinterland is heavily industrialised and the infrastructure and activities are mainly associated with the operations of Immingham docks, just to the west of the area. These industrial units are interspersed with grade 3 agricultural land used for arable farming. Set back behind the main industrial area are the settlements of Stallingborough and Healing which are mainly residential areas with a few local services and community facilities. Towards the rear of the floodplain there are scattered farms and small rural communities

The intertidal mudflats and foreshore are included within the internationally designated Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. The frontage is popular with anglers and the nearshore zone supports a local commercial fishing industry.

3.14.2 Tourism

There are no specific tourism-related features.

3.14.3 Infrastructure

In addition to the major industrial infrastructure and port facilities in the area, there are also several drains, sewage treatment works and land drainage pumping stations at Mawnbridge and Middle Drain. The area has a well-developed communications network with one railway line to serve the industrial sites, and one to serve the settlements. The A180 is the arterial roadway through the area and the A1173 links this road to Immingham docks. The A1136 also provides the main route access to residential Grimsby and areas further south

3.14.4 Historic Environment

There are Scheduled Monuments in the area including a Medieval nunnery at Stallingborough, and two moated sites at Healing Wall. There are also many listed buildings within the area. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.15 Area 13a: Grimsby and Cleethorpes

3.15.1 Natural Environment and Landscape

This predominantly urban and industrial frontage comprises a mix of residential housing, commercial properties and industrial areas in Grimsby and Cleethorpes. Towards the fringes of the towns, these

developed areas are interspersed with open spaces, sports fields, and a country park. Behind Cleethorpes, there are wooded areas and grade 3 agricultural land.

Grimsby and Cleethorpes are regional commercial centres and provide many community and visitor facilities and services. Grimsby dock is a large commercial port.

Humberston is a smaller satellite settlement to the south east of the main urban area of Cleethorpes and Grimsby. It is mainly composed of residential housing and also provides local services and community facilities.

The coast in this area is internationally designated as part of Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest.

3.15.2 Tourism

Tourism is a key economic driver in Cleethorpes and this area has many recreation and tourism developments close to the EC designated bathing beach that fronts the town. The beach is used for a variety of recreational activities including sailing, water sports, fishing, walking and bathing.

3.15.3 Infrastructure

In addition to the well developed industrial infrastructure in Grimsby, there is a dredged navigation channel for the dock, and a marina. Cleethorpes has a pier, promenades and slipways. There is also an outfall for Buck Beck, which is the main drainage channel for the area.

The area has a well developed transport network with major arterial routes consisting of the A16, A180, A1136, A1098, and A1031. A railway also provides access to Cleethorpes and Grimsby from the west.

3.15.4 Historic Environment

Humberston Abbey is a Scheduled Monument, and the area also contains numerous listed buildings. The Dock Tower on Grimsby docks is the area's only Grade 1 listed building. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.16 Area 13b: Humberston Fitties

3.16.1 Natural Environment and Landscape

The lower foreshore area is comprised of mudflats, although the upper shore is saltmarsh and the beach is backed by sand dunes. The coast in this area is internationally designated as part of Humber Estuary Special Protection Area, Special Area of Conservation Ramsar site and Site of Special Scientific Interest.

3.16.2 Tourism

The coastal hinterland is comprised of holiday chalets which are predominantly used seasonally. Humberston Fitties is also a designated Conservation Area. Behind the holiday chalet park of Humberston Fitties, the landscape is open and generally used for grade 3 agricultural land drained by small drains. There are very few houses and these are well scattered.

3.16.3 Infrastructure

Towards the rear of the area, the A1031 provides a major transport link to Grimsby and Cleethorpes to the north and Mablethorpe to the south.

3.16.4 Historic Environment

A Conservation Area is designated at Humberston Fitties. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.17 Area 14: South of Humberston Fitties to Saltfleet

3.17.1 Natural Environment and Landscape

The landscape is generally low-lying and open and the main land use of the area is grade 1 and 2 agricultural land. The residential density is generally low in this area, with larger settlements including North Somercotes, Tetney, and Saltfleet situated near the coast which provide local community facilities and services. There are also many scattered farms and rural communities throughout the area. There are caravan parks near the coast at North Somercotes, Skidbrooke North End, and Saltfleet.

The coast in this area is of high environmental significance, with many important habitats. The entire intertidal foreshore and coastal strip is designated as part of the Humber Estuary Special Protection Area, Special Area of Conservation, Ramsar site and Site of Special Scientific Interest. There is also a large National Nature Reserve at Donna Nook and a RSPB reserve at Tetney Marshes.

3.17.2 Tourism

Tourism is an important aspect of the local economy, and the beach provides an important recreational resource for a range of activities including walking, boating, angling and bathing.

3.17.3 Infrastructure

Infrastructure in the area includes a reservoir at Covenham, sewage treatment works, wind farms, land drainage pumping stations and Tetney tank farm. The area around Donna Nook is a Ministry of Defence site (RAF bombing range). The region is bisected by the A1031 which connects many of the settlements in the area, as well as providing a local link to Cleethorpes and Grimsby to the north, and Mablethorpe to the south.

3.17.4 Historic Environment

The area contains many listed buildings and a moated site at North Cockerington Hall, designated as a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.18 Area 15: Saltfleet Haven to Theddlethorpe St Helen

3.18.1 Natural Environment and Landscape

The landscape is generally low-lying and open and the area is mainly composed of grade 3 agricultural land. There are clusters of coastal settlements at Theddlethorpe, Theddlethope St Helen, Saltfleetby St Clement and Saltfleetby All Saints. Set back from the shoreline on the floodplain are the villages of Manby, Grimoldby, Gayton Le Marsh, Great Carlton and Saltfleetby St Peter. Amongst the villages there are also many farms and small rural communities.

Part of the Humber Estuary Ramsar site and Special Protection Area and the Saltfleetby-Theddlethorpe Dunes and Gibraltar Point Special Area of Conservation are included in this area. The Saltfleetby – Theddlethorpe dunes are also a National Nature Reserve and a Site of Special Scientific Interest.

3.18.2 Tourism

There is limited tourism infrastructure, however the area attracts large numbers of visitors drawn by its wildlife and rural character.

3.18.3 Infrastructure

There is land drainage infrastructure within the area such as the pumping station at Theddlethorpe. The A1031 provides the main transport link to Mablethorpe, the nearest town, just to the south of the area.

3.18.4 Historic Environment

The area has many listed buildings, including the west tower at the former Church of St Peter at Saltfleetby St Peter which is a Grade 1 listed building. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.19 Area 16: Viking Gas Terminal to Sandilands (Mablethorpe)

3.19.1 Natural Environment and Landscape

The settlements of Mablethorpe, Trusthorpe, Sutton on Sea and Sandilands form a nearly continuous urban belt along much of the area's coastal frontage. These coastal towns provide services and facilities to the local catchment, with Mablethorpe being the regional commercial centre. Highest population densities occur closest to the coast and the commercial activities are mainly based around the tourist industry.

Behind the main urban coastal dwellings the predominant land use is grade 3 agricultural land. There are also a number of scattered farms and small rural communities.

3.19.2 Tourism

Tourism is a key economic driver for these towns and the surrounding settlements and consequently they are fringed by a number of caravan and camping parks. The beaches and promenades provide opportunities for many recreation and leisure activities, and this forms the basis of the area's tourism.

3.19.3 Infrastructure

In the north of the area is the Viking Gas Terminal, the major industrial site in the area. There are several pumping stations on the floodplain along with the 'Heading drain' and 'The Cut' that help to drain the low-lying floodplain. Sewage treatment infrastructure is also present within the area.

The area is regionally and locally connected through a road network to the north by the A1131, to the west by the A1104, A157 and A1111, and to the south by the A52

3.19.4 Historic Environment

There are Scheduled Monuments in the area including Hagnaby Abbey (a Premonstratensian Abbey and a post-medieval house and formal garden), as well as a small moated site south of Stain Farm. In addition, the area has many listed buildings. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.20 Area 17: Sandilands to Chapel Point

3.20.1 Natural Environment and Landscape

The main land use of this area is grade 3 agricultural land, used mostly for arable farming, and some pastoral grazing. The settlement of Alford is situated at the rear of the floodplain, around 10 kilometres inland. This is the area's only town and it has many local facilities and services. Anderby Creek is the only coastal settlement and is situated behind the dunes but seawards of the sea bank, which provides flood protection to the low-lying behind. There are many scattered farms and small rural communities between the villages as well as several caravan and camping sites in the coastal hinterland. The environmental significance of the area is high, with Wolla Bank to Chapel Point area and Sea Bank Clay Pits designated as Sites of Special Scientific Interest.

3.20.2 Tourism

The beach is an EC designated bathing beach and provides an important recreational resource. Tourism is key to the local economy in this area with a number of caravan and camping sites in the area.

3.20.3 Infrastructure

The key infrastructure in the area includes land drainage pumping stations at Boygrift and Anderby. The area is also drained by a number of drainage channels such as the Main Drain that discharges into the sea at Anderby Creek. There are two main roads in the area, the A1111 provides a link between Sutton on Sea and Alford to the west and the A52 runs through several of the villages such as Mumby and Huttoft to Chapel St Leonards, Ingoldmells and Skegness to the south.

3.20.4 Historic Environment

There is a registered park and garden at Well Hall as well as numerous listed buildings in the area. Markby Abbey is a Scheduled Monument. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.21 Area 18a: Chapel Point to Skegness

3.21.1 Natural Environment and Landscape

The coastal hinterland is mainly urbanised with a virtually continuous belt of settlement along the frontage which includes the villages of Chapel St Leonards and Ingoldmells. Smaller sub-urban settlements of Winthorpe and Seathorne are situated between the main towns of Skegness and the village of Ingoldmells, and these are composed mainly of housing.

Behind the urbanised coastal strip is mainly grade 3 agricultural land that is farmed both arably and pastorally. The farmland of the floodplain is interspersed with a number of villages with local facilities and small rural communities and farmsteads.

3.21.2 Tourism

Tourism provides the main economic driver for the area and consequently there are many caravan parks along the coast. The majority of these are at Ingoldmells which is comprised almost entirely of caravan and camping parks or holiday villages.

The beaches play an integral role in supporting the regional tourist industry, and they provide an important resource for informal recreation. The beaches are EC designated bathing beaches and are also used by anglers for fishing.

3.21.3 Infrastructure

The key infrastructure in the area includes land drainage pumping stations at Ingoldmells and Chapel Basin, coastguard lookout stations, a wind farm at Orby, and sewage treatment works. The area has a well-developed road network with the A52 linking the coastal towns with areas to the north, the A158 providing an arterial route to Horncastle and areas to the west, and the A52 providing access to towns to the south of the area. There are many coastal access points along the frontage.

3.21.4 Historic Environment

There are many listed buildings including Grade 1 listed buildings at Dobson's Windmill in Burgh Le Marsh, and the Church of St Mary in Winthorpe. There are also scheduled monuments at Butler Bump round barrow cemetery between Cumberworth and Willoughby, Manor Farm moated site in Orby, a Motte castle at Castle Hill 250 metres east of Manby Hall Farm, and Bratofft Hall moated site. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.22 Area 18b: Skegness

3.22.1 Natural Environment and Landscape

This predominantly urban frontage is a lively seaside resort – the fifth largest, by visitor numbers in the UK. Skegness is the regional commercial centre with many services and entertainment facilities and relatively high density housing.

Behind the urbanised coastal strip is mainly grade 2 and 3 agricultural land that is farmed both arably and pastorally. The foreshore and sand dunes in the southern part of Skegness are also designated under the Saltfleetby Theddlethorpe Dunes & Gibraltar Point Special Area of Conservation.

3.22.2 Tourism

The beaches play an integral role in supporting the regional tourist industry which is key to the local economy. The beaches are EC designated bathing beaches which provide an important resource for informal recreation and are also used by anglers for fishing.

3.22.3 Infrastructure

Skegness has a well developed road network and the A158 provides an arterial route to Horncastle and areas to the west, and the A52 links the town with Mablethorpe to the north and Boston to the south. A railway also provides a regional link to the East Coast Main Line at Grantham.

3.22.4 Historic Environment

There are many listed buildings including Grade 1 listed buildings at Dobson's Windmill in Burgh Le Marsh. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.23 Area 19: Seacroft to Gibraltar Point

3.23.1 Landscape, Natural Environment and Biodiversity

This area contains land used for arable farming and this constitutes the main economic activity in this area. The coastal hinterland has a very low residential density with a few houses in Seacroft (a suburb of Skegness), and a few scattered small rural communities and farms. Set back about 6 kilometres from the coast is the slightly larger village of Wainfleet All Saints, which provides local services and community facilities.

The coast is designated as the Gibraltar Point Ramsar site, Special Protection Area, and Special Area of Conservation. There is a National Nature Reserve at Gibraltar Point.

3.23.2 Tourism

The aesthetic values of the area attract many visitors and the beach and coastal strip is used by walkers and ornithologists.

3.23.3 Infrastructure

Infrastructure in this area includes a land drainage pumping station at Burgh Sluice and a main line railway that runs from Skegness to the north of the area to Wainfleet All Saints, and then on to Grantham. The A52 provides a main route to Skegness. There are two car parks and a visitor centre at Gibraltar Point, where there is also access to the beach.

3.23.4 Historic Environment

There are many listed buildings within the area, including a Grade 1 listed building at Magdalen College School (now a library) at Wainfleet All Saints. There is a Scheduled Monument at the Medieval Salt workings at Wainfleet Saint Mary. Other significant non-designated assets may also be present in the area. It is also important to note that there are potential issues with as yet unknown archaeological sites on land and also offshore.

3.24 Environmental Designations

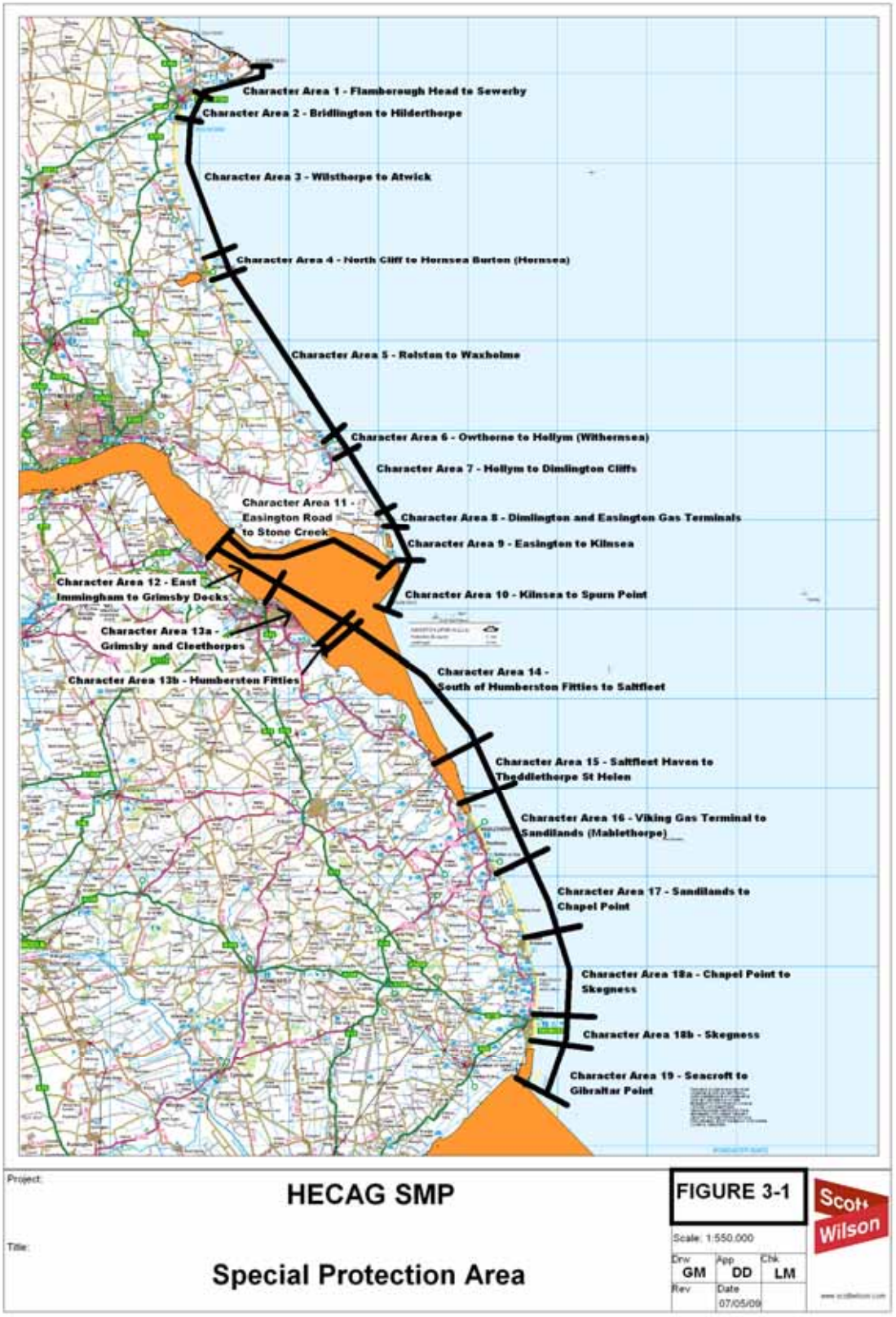
The coastline comprises a number of internationally designated sites located on the coast as well as sites located in the vicinity of the coast line. The following internationally designated sites are present along the frontage:

- Flamborough Head Special Area of Conservation (SAC) and Flamborough Head & Bempton Cliffs Special Protection Area (SPA);
- Hornsea Mere SPA;
- The Humber Estuary SAC /SPA / Ramsar Site;
- Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC;
- Gibraltar Point SPA/Ramsar site.

Also, just south of the SMP area is the extensive area of the Wash SPA and Ramsar site and the Wash & North Norfolk Coast SAC.

Table 3-2 provides a summary of the internationally designated areas that are located on or in the vicinity of the coastline. It also sets out some of the key vulnerabilities at the sites that are of relevance to the SMP.

Figures 3-1 to 3.4 show the location of the internationally designated areas and Sites of Special Scientific Interest.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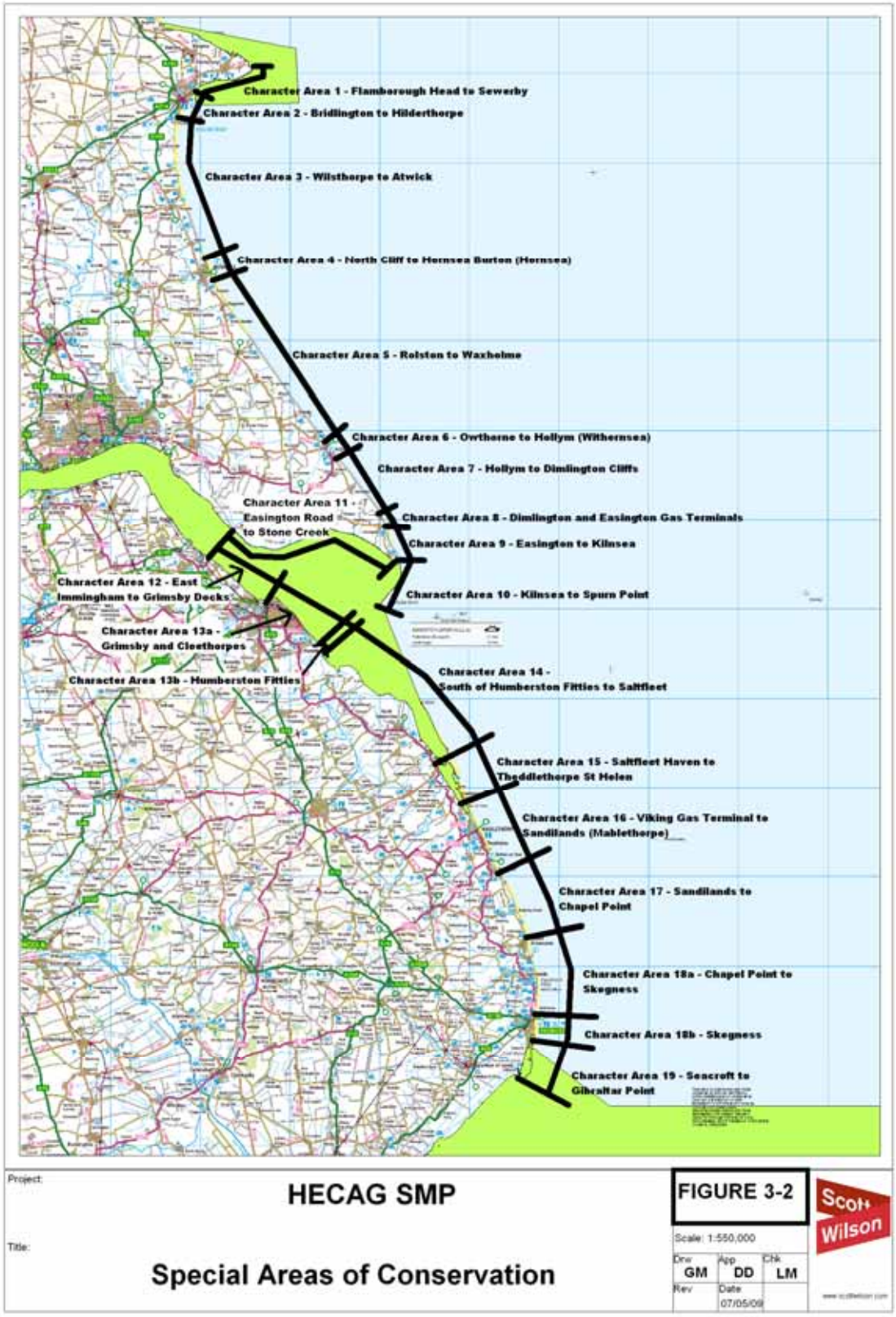
Character Area 2 - Bridlington to Hilderthorpe
Character Area 3 - Wilsthorpe to Atwick
Character Area 4 - North Cliff to Hornsea Burton (Hornsea)
Character Area 5 - Relston to Waxholme
Character Area 6 - Ovtherne to Hollym (Withernsea)
Character Area 7 - Hollym to Dimlington Cliffs
Character Area 11 - Easington Road to Stone Creek
Character Area 8 - Dimlington and Easington Gas Terminals
Character Area 9 - Easington to Kilnsea
Character Area 12 - East Immingham to Grimsby Docks
Character Area 10 - Kilnsea to Spurn Point
Character Area 13a - Grimsby and Cleethorpes
Character Area 13b - Humberston Fitties
Character Area 14 - South of Humberston Fitties to Saltfleet
Character Area 15 - Saltfleet Haven to Theddlethorpe St Helen
Character Area 16 - Viking Gas Terminal to Sandilands (Mablethorpe)
Character Area 17 - Sandilands to Chapel Point
Character Area 18a - Chapel Point to Skegness
Character Area 18b - Skegness
Character Area 19 - Seacroft to Gibraltar Point
Project:
HECAG SMP
FIGURE 3-1
Scale: 1:550,000
Drw GM
App DD
Chk LM
Rev
Date 07/05/09
Title:
Special Protection Area
Scott Wilson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Character Area 2 - Bridlington to Hilderthorpe
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Character Area 4 - North Cliff to Hornsea Burton (Hornsea)
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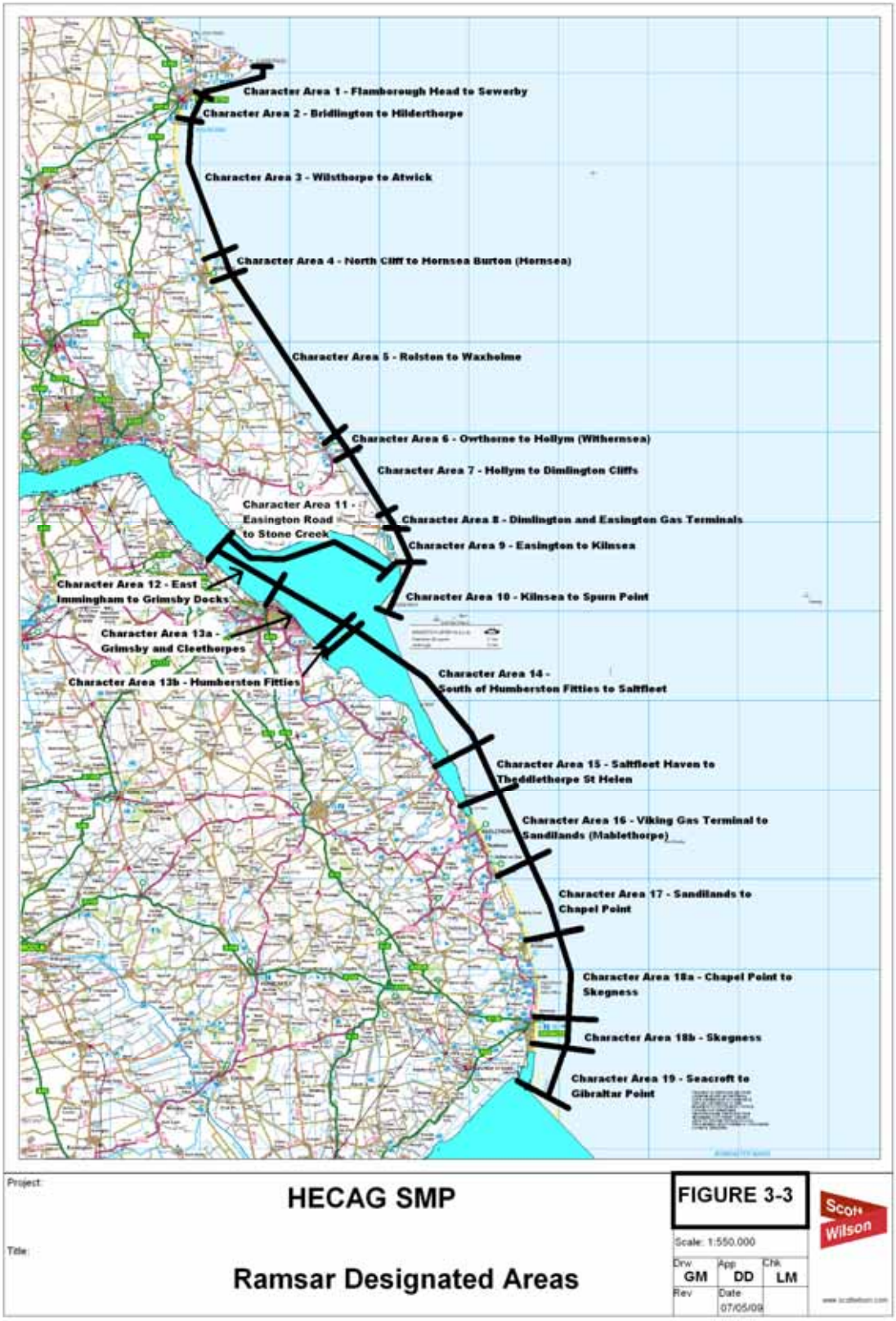
Character Area 17 - Sandilands to Chapel Point
Character Area 18a - Chapel Point to Skegness
Character Area 18b - Skegness
Character Area 19 - Seacroft to Gibraltar Point
Project:
HECAG SMP
Title:
Special Areas of Conservation
FIGURE 3-2
Scale: 1:550,000
Drw GM
App DD
Chk LM
Rev
Date 07/05/09
Scott Wilson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Character Area 2 - Bridlington to Hilderthorpe
Character Area 3 - Wilsthorpe to Atwick
Character Area 4 - North Cliff to Hornsea Burton (Hornsea)
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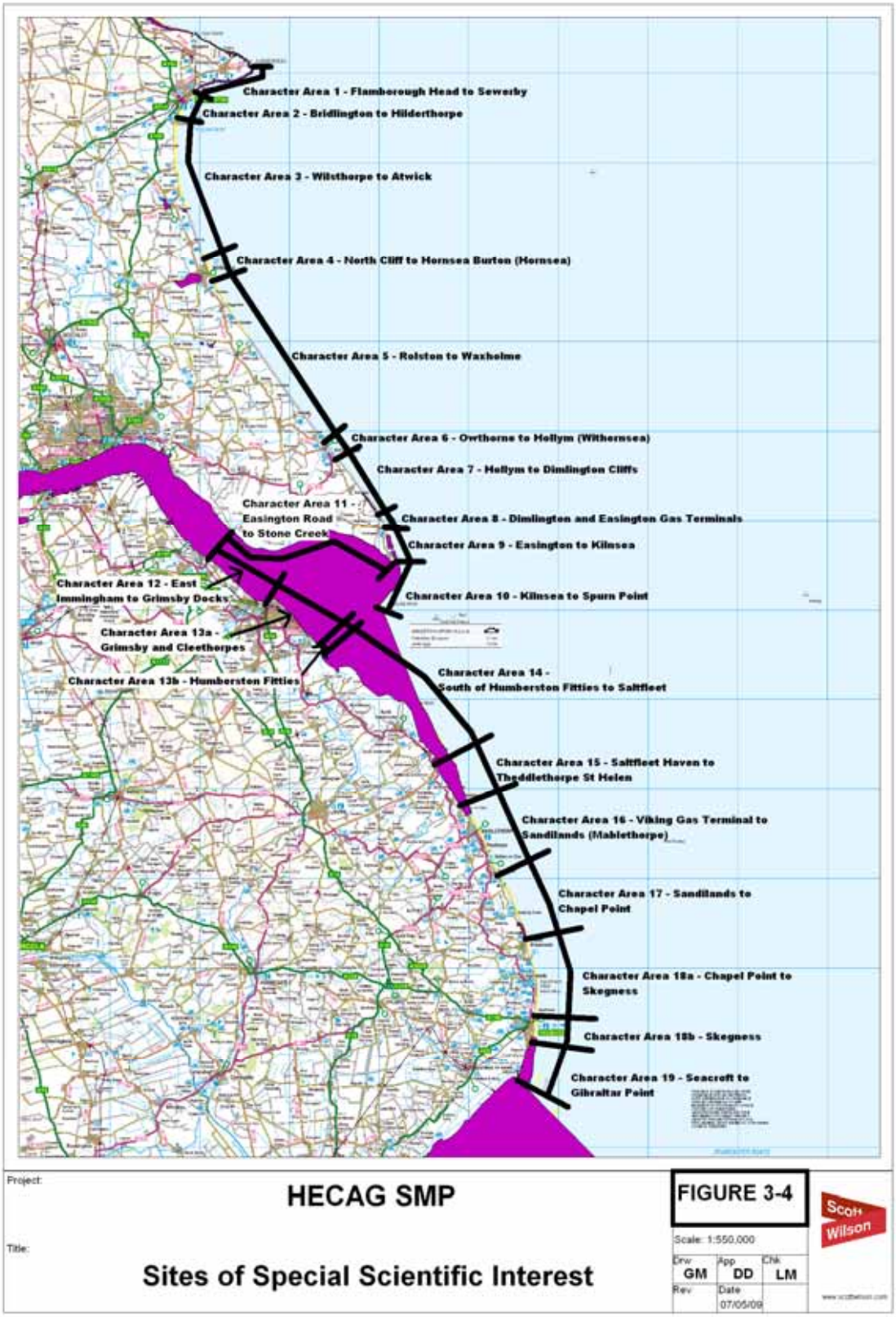
Character Area 17 - Sandilands to Chapel Point
Character Area 18a - Chapel Point to Skegness
Character Area 18b - Skegness
Character Area 19 - Seacroft to Gibraltar Point
Project:
HECAG SMP
FIGURE 3-3
Scale: 1:550,000
Title:
Ramsar Designated Areas
Drw GM
App DD
Chk LM
Rev
Date 07/05/09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Character Area 17 - Sandilands to Chapel Point
Character Area 18a - Chapel Point to Skegness
Character Area 18b - Skegness
Character Area 19 - Seacroft to Gibraltar Point
Project:
HECAG SMP
FIGURE 3-4
Title:
Sites of Special Scientific Interest
Scale: 1:550,000
Drw GM
App DD
Chk LM
Rev
Date 07/05/09
Scott Wilson

Table 3-2: **Internationally designated areas in the SMP study area and their interest features**

Name	Description of Features of Interest	Design ation	Area (ha)	Vulnerabilities
Flamborough Head	Flamborough Head has been selected for the presence of species associated with the chalk and for the site's location at the southern limit of distribution of several northern species. The site covers around 14% of UK and 9% of European coastal chalk exposure, represents the most northern outcrop of chalk in the UK, and includes bedrock and boulder reefs which extend further into deeper water than at other subtidal chalk sites in the UK, giving one of the most extensive areas of sublittoral chalk in Europe. Habitats of importance on Flamborough Head include reefs, vegetated sea cliffs and submerged or partially submerged sea caves.	SAC	6316	Accelerated erosion, which could result from coastal defence work or increasing recreational activity Toxic contamination of the seawater or changes to the thermal regime, which could result from industrial discharge and changes in agricultural management. The reef habitat themselves may also be susceptible to physical damage or changes to erosion levels, for example as a result of coastal defences.
Flamborough Head and Bempton Cliffs	Bird populations of European importance	SPA	208.35	Accelerated erosion, which could result from coastal defence work or increasing recreational activity Recreational disturbance during breeding season Changes in fish stocks from fishing or toxic contamination from agriculture or industry

Name	Description of Features of Interest	Designation	Area (ha)	Vulnerabilities
Saltfleetby-Theddlethorpe Dunes and Gibraltar Point	This area has been selected for its dune system which includes shifting dunes within a complex site that contains a range of dune types; the shifting dunes are part of a succession transition. The dune complex also contains extensive areas of fixed dune vegetation within largely intact geomorphologically active systems, as well as humid dune slacks.	SAC	960.2	Changes in coastal processes caused by coastal protection schemes elsewhere. Changes in sea level leading to loss of intertidal habitats where habitats are stopped from retreating by artificial sea defences (coastal squeeze). The site is popular for recreation, which can cause erosion and fragmentation of habitats.
Gibraltar Point	Wetlands of international importance and bird populations of European importance. To the south, the coastal habitats of Gibraltar Point SPA are continuous with The Wash SPA, with which area the ecology of this site is intimately linked.	SPA and Ramsar	422	Vulnerable from general disturbance from human activities, including recreational activity and harbour / port activity.
Humber Estuary	Wetlands of international importance.	Ramsar	37987.8	

Name	Description of Features of Interest	Designation	Area (ha)	Vulnerabilities
Humber Estuary	The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by the Rivers Ouse, Trent and Hull, Ancholme and Graveney. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. This is the northernmost of the English east coast estuaries whose structure and function is intimately linked with soft eroding shorelines. Habitats within the Humber Estuary include Atlantic salt meadows and a range of sand dune types in the outer estuary, together with subtidal sandbanks, extensive intertidal mudflats, glasswort beds, and coastal lagoons. As salinity declines upstream, reedbeds and brackish saltmarsh communities fringe the estuary. These are best-represented at the confluence of the Rivers Ouse and Trent at Blacktoft Sands. Upstream from the Humber Bridge, the navigation channel undergoes major shifts from north to south banks, for reasons that have yet to be fully explained. This section of the estuary is also noteworthy for extensive mud and sand bars, which in places form semi-permanent islands. Significant fish species include 1099 river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* which breed in the River Derwent, a tributary of the River Ouse.	SAC	36657.15	Changes to sea level leading to loss of intertidal habitats (including large areas of mudflats and saltmarshes) where habitats are stopped from retreating by artificial sea defences (coastal sqeeze). Further development of industrial activity especially if it takes places in intertidal locations. Future port development may need direct access to deep-water channels, which can result in direct loss of habitat. Pollution from agriculture, industry and urban areas is also a major threat to the wildlife and habitats in this area. Dredging for navigation or aggregates may also have an important detrimental effect upon the animal and plant life of the sediment, and sediment supply and transport. On a more localised scale, increasing recreational activity, especially at sensitive sites.

Name	Description of Features of Interest	Designation	Area (ha)	Vulnerabilities
Humber Estuary	Bird populations of European importance	SPA	37630.24	Loss of intertidal habitats, Indirectly, coastal management schemes can also markedly reduce the trapping of nutrients within the estuary, leading to a loss of feeding areas for birds. Further development of industrial activity Pollution from agriculture, industry and urban areas Increased recreational disturbance Changes in agricultural practices can also reduce the amount of breeding and feeding sites in the area.
Hornsea Mere	Bird populations of European importance	SPA	232.25	Changes to sedimentation Abstraction and toxic contamination, for example from changing agricultural practices or domestic sewage discharge. An increase in recreational pressure

Source: adapted from the: Joint Nature Conservation Committee; Draft Yorkshire and Humber Plan Habitats Regulations Assessment, 2006; Draft East Midlands Plan Habitats Regulations Assessment, 2007

3.24.1 Off-shore activity

There are currently two offshore wind farms under construction along the SMP coastline; Inner Dowsing and Lynn, offshore of Skegness. The Inner Dowsing and Lynn windfarms will each have 27 turbines with an output of 90MW. There are also a number of planned and/or proposed offshore wind farms (including the Westermost Rough, Humber Gateway and Lincs windfarms as well as a number of windfarms further offshore), which may require on-shore facilities along the coastline. Existing power generation infrastructure on the south bank of the Humber is a particular attraction for further wind turbine development. However, care needs to be taken to protect this area from over-development of wind turbines to the detriment of the area's character and amenity.[6]

There are eight areas licensed for marine sand and aggregate extraction; the most northerly area is offshore of Easington and the most southerly area offshore of Chapel St Leonards. The Yorkshire and Humber Plan: Regional Spatial Strategy highlights that it is important to consider offshore sand and gravel extraction, which may have adverse marine environmental impacts.[7] The East Midlands Biodiversity Strategy highlights that aggregate extraction could affect the seabed topography as well as increasing turbidity. This could disturb the benthic communities and possibly lead to a reduction in species diversity and loss of communities of marine species.[8]

6 Secretary of State's Proposed Changes to the Yorkshire and Humber Plan: Regional Spatial Strategy (2008)2007)
7 Secretary of State's Proposed Changes to the Yorkshire and Humber Plan: Regional Spatial Strategy (2008)2007)
8 East Midlands Biodiversity Strategy (2006)

3.25 Future uncertainty

Consideration of future uncertainty is an important element of the Scoping Stage as it can be useful at the assessment stage in helping to judge the significance of effects.

Firstly, it is useful to consider those factors that we can say with confidence will not change in the future. The influence of the basic geography of the coast can be assumed to be relatively constant, for example the fact that the estuary will remain a 'global gateway' whilst other parts of the coast will remain relatively rural and isolated. Furthermore, it can be assumed that most land designations influencing the area will continue to exert a similar influence in the future, however the exact extent, location and ecology of these designated sites may alter in the future due to the impacts of climate change and sea level rise which may lead to replacement habitat needing to be found.

However, it is important to realise that all environments are naturally dynamic and perhaps none more so than the environments of soft coastlines such as this. It is clear that both the ecology and geomorphology of this soft coastline will respond significantly to future environmental changes, in particular sea level rise. What is uncertain is the rate of environmental change that will occur, and the exact way in which the coast will respond. Sea level rise will require intertidal habitats to either shift inland or be lost to the process of coastal squeeze. The Habitats Regulations Assessment of the Draft East Midlands Plan (2007) found that there is potential that increasing development in coastal locations may prevent opportunities for managed realignment of Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC and Gibraltar Point SPA and Ramsar sites. The Habitats Regulations Assessment also found that Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC and Gibraltar Point SPA and Ramsar site, the Humber Estuary SAC, SPA and Ramsar site, the Wash SPA and Ramsar site and Wash and North Norfolk Coast SAC are vulnerable to changes in sedimentation rates along the coast caused by coastal protection schemes and changes in hydrological regimes resulting from flood defences.

In a similar fashion to more terrestrial habitats, climate change will require habitats and species to have space to shift their ranges as the 'climate envelope' that they are most suited to shifts northwards. This may impact disproportionately on those habitats that exist today in more fragmented pockets (particularly along the Holderness coast), and may also mean that the extensive areas of coastal habitats associated with the Lindsey Outmarsh become increasingly vulnerable and important as 'stepping stone' sites for species to disperse through. Given the risks and uncertainty associated with environmental change and associated responses it is likely that there will be policy responses from government that seek to protect both the biodiversity value of the coastline as well as minimise flood risk.

Another important factor to consider is the increasing pressure that will be put on sensitive environments as a result of house-building leading to increased tourism and recreation pressures on these 'honey-pot' sites. This has been identified as an important factor in the East of England Region. It is unlikely that this coastline will come under a similar degree of pressure as a result of housing growth as is the case in the East of England, but nonetheless this will be an important factor influencing the biodiversity baseline in the future. Habitats Regulations Assessments undertaken on plans for the future development of the coastline have found that a number of sites are vulnerable to increases in recreational pressure, including Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC and Gibraltar Point SPA and Ramsar site which

are likely to be adversely affected by recreational pressure caused by development at Skegness and Mablethorpe[9].

3.26 Relevant Plans and Policies

Consideration of the context in which the SMP is being prepared involves two steps. Firstly, the relevant Policies, Plans, Programmes, Strategies and Initiatives considered relevant to the SMP must be identified. Secondly, these must be reviewed with the aim of establishing their implications for the SMP and SEA (e.g. the opportunities they create or the constraints they present).

The requirement to undertake a context review arises from the SEA Directive:

> The 'Environmental Report' required under the SEA Directive should include:
>
> 'the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme'
>
> (Annex 1 (e) of the SEA Directive)

Therefore, the Policies, Plans, Programmes, Strategies and Initiatives that are relevant to the SMP have been reviewed and the key objectives that need to be taken into consideration noted. Appendix A details the full policy context review

Broadly speaking, the relevant policies can be broken down into three categories: land use planning; societal and environmental policies. It should be borne in mind however that some policies apply to more than one category. Following the summary of key policies in each of the three sections, a number of key objectives from these policies have been identified. These objectives broadly correspond to the following principles identified in the characterisation report:

- To balance flood and erosion risk management in a sustainable manner appropriate to the overall value of the features affected;
- To ensure that shoreline management policies encompass longer term adaptation options, and give time for communities and individuals to adapt to changing climate conditions and levels of risk;
- To develop policies for flood and erosion risk management that will inform spatial planning processes and provide a robust evidence base for Local Development Frameworks;
- To support sustainable patterns of development and consider possible effects on communities and their welfare;
- To support the nationally, regionally and locally important social and economic assets of the area in a sustainable manner;
- To consider the effects of coastal change on local industries, agriculture and employment and provide a secure environment for economic activity and development;
- To ensure that local decisions do not have a disproportionately adverse affect on the natural balance of the coastline and shoreline management elsewhere;
- To contribute to the positive management and enhancement of environmentally designated sites and protected species, subject to natural change;

[9] The Habitats Regulations Assessment of the draft East Midlands Plan (2007) Available at http://www.emra.gov.uk/files/draft-habitats-regulations-assessment-reportapril07.pdf (accessed 04/08)

- To support the conservation and enhancement of biodiversity in the wider coastal zone;
- To support the maintenance and enhancement of the character of the coastal landscape;
- To support the preservation and enhancement of the historic environment; and
- To comply with legislative requirements and contribute to a safe and healthy environment.

3.27 Land Use Planning Policies

Land use planning polices and the SMP are interrelated. It is essential that their recommendations complement each other to avoid conflict, particularly with regards to flood risk, sustainable development and designated sites. .

In accordance with Planning Policy Statement 25 'Development and Flood Risk' (PPS25), Local Planning Authorities are required to undertake Strategic Flood Risk Assessments (SFRAs). These should guide site allocations away from areas of high flood risk, thereby reducing the risk of conflict with SMP policies.

The key land use planning policy documents that have been reviewed as part of this report are seen in Table 3-3

Table 3-3: Key Land Use Policies

Key Land Use Planning Policies
Making Space for Water (2005)
Sustainable Communities Plan (2003)
Planning Policy Statement (PPS) 1: Delivering Sustainable Development (2005)
PPS7 Sustainable Development in Rural Areas (2004)
PPG13: Transport (2001)
PPG15: Planning and the Historical Environment (1994)
PPG16: Archaeology and planning (1990)
PPG 17: Planning for Open Space, Sport and Recreation
PPS23: Planning and Pollution Control (2004)
PPS25: Development and Flood Risk (2006)
PPG20: Coastal Planning (1992)
The East Midlands Plan (RSS8) (draft)
The East Midlands Regional Housing Strategy 2004-2010
Yorkshire and Humber Plan (RSS) 2008
Yorkshire and Humber Regional Sustainable Development Framework 2003 - 2005
Lincolnshire Structure Plan 2006
East Lindsey Sustainability Appraisal Scoping Report
East Lindsey Local Plan Alteration 1999 – Saved Polices from September 2007
Lincolnshire Coastal Zone Action Plan
East Lindsey Strategic Flood Risk Assessment
East Lindsey Core Strategy Issues and Options Consultation 2007
East Riding of Yorkshire Council Beverley Borough Local Plan 1996
East Riding of Yorkshire Council East Yorkshire Borough Wide Local Plan 1997
Holderness District Wide Local Plan 1999

East Riding of Yorkshire Local Development Framework Scoping Report
East Riding Coastal Zone Management Plan: Towards a Sustainable coast 2002
The 'roll back' of residential and agricultural dwellings at risk of coastal erosion in the East Riding of Yorkshire (2005)
North East Lincolnshire LDF Scoping Report (2005)
North East Lincolnshire Local Plan 2003
A Regeneration Strategy for North East Lincolnshire – New Horizons

The main objectives arising from these land use planning policies are:

- Reducing housing shortage;
- Improving liveability;
- Using land more effectively;
- Promoting sustainable patterns of urban and rural development;
- Protect and enhance historic buildings, areas and landscapes, and their settings;
- Provide open space and leisure and recreation facilities;
- Direct development away from areas at highest risk from flooding;
- Ensure that development will protect and enhance the natural cultural, and historic environment of the coastal margin; and
- Ensure that the existing and future housing stock is appropriate to meet the housing needs of all parts of the community.

3.28 Societal Policies

Societal policies in the context of this report encompass economic, health and wellbeing, transport, cultural and historic policies. As with land use planning policies, there is the need to try reconcile the SMP with these policies where there are areas of potential conflict. The protection and management of heritage features is essential to maintain the social and historical value of the coast and in attracting visitors and supporting the local economy.

The key community and cultural policy documents reviewed for this report are seen in Table 3-4

Table 3-4: Key Community and Cultural Policy Documents

Key Community and Cultural Policy Documents
Air Quality Framework Directive (96/62/EC) and Air Quality Regulations
Heritage White Paper
The Historic Environment: A Force for Our Future (2001)
The UK Sustainable Development Strategy (2005)
Sustainable Communities Plan (2003)
Planning Policy Statement (PPS) 1: Delivering Sustainable Development (2005)
PPS7 Sustainable Development in Rural Areas (2004)
PPG15: Planning and the Historical Environment (1994)
PPG16: Archaeology and planning (1990)
The East Midlands Regional Housing Strategy 2004-2010
Providing for Lincolnshire's Future – A Sustainability Framework incorporating environmental

stewardship strategy 2005
East Lindsey A Community Plan for a Sustainable Future
'Our East Riding' Community Strategy 2006 -2016
North East Lincolnshire Community Strategy
'Making the Connections' – NE Lincolnshire Cultural Strategy

The key objectives from societal policies are:

- Ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment;
- The full potential of the historic environment should be realised and it should be accessible to all;
- Promote support of a wide range of economic activity;
- The region seeks high quality, sustainable growth that will maximise long term benefits to businesses, people and to the environment;
- Achieve a more sustainable pattern and form of development, investment and activity in the Region – putting a greater emphasis on matching needs across the Region with opportunities;
- Promote economic opportunities through exploitation of new markets and technologies as well as the efficient use of resources; and
- Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and to reduce the need to travel, especially by car.

3.29 Environmental Policies

The study area contains a wide range of natural environments and biodiversity and has many designated sites, both at an EU, national and local level. As the SMP is a high level strategic document, the SEA will focus on conservation sites at a similar high level, rather than considering designations at local wildlife site level. The key environmental policy documents and legislation reviewed as part of this report are seen in Table 3-5:

Table 3-5: Key Environmental Policies

Key Environmental Policies
The Habitats Directive (92/43/EEC)
Birds Directive (79/409/EEC)
The Convention on Wetlands of International Importance 1971 (Ramsar Convention)
The Water Framework Directive (2000/60/EC)
The Wildlife & Countryside Act (1981) Amended on several occasions, most notably by the Countryside and Rights of Way (CRoW) Act (2000)
UK Biodiversity Action Plan (1994)
Biodiversity Strategy for England (2002)
Water Act 2003
Climate Change Act (2008)
Draft Soil Strategy for England (2001)
The UK Climate Change Programme (2006)
Making Space for Water (2005)

The Energy White Paper (2007)
Soil Action Plan for England (2004)
Waste Strategy for England (2007)
Draft PPS: Planning and Climate Change, Supplement to PPS1.
PPS9: Biodiversity and Geological Conservation (2005)
PPS23: Planning and Pollution Control (2004)
Putting wildlife back on the map – A biodiversity strategy for the east Midlands 2004
Witham Catchment Abstraction Management Plan (CAM)
Steeping, Great Eau and Long Eau CAMS
The Grimsby, Ancholme and Louth CAM (April 2006)
Lincolnshire Biodiversity Action Plan 2nd Edition – Coastal and Marine Chapter
Coastal Sand Dunes Habitat Action Plan
Saline Lagoons Habitat Action Plan
Saltmarsh Habitat Action Plan
Air Quality and Review for Lincolnshire
Providing for Lincolnshire's Future – A Sustainability Framework incorporating environmental stewardship strategy 2005
Lincolnshire Coast and Marshes Natural Area (1997)
Lincolnshire Coastal Zone Action Plan
Landscape Character Assessment for East Riding 2005
East Riding Coastal Zone Management Plan: Towards a Sustainable coast 2002
The 'Roll Back' of residential and agricultural dwellings at risk of coastal erosion in the East Riding of Yorkshire (Dec 2005)
East Riding Biodiversity Plan
East Lindsey District Council Draft Landscape Character Assessment 2008

The key environmental objectives identified from these documents are:

- Set the target to achieve by 2010 a significant reduction of the current rate of biodiversity loss;
- The protection of species and habitats of EU nature conservation designation;
- The protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species;
- The protection of waterfowl habitat;
- Promote an integrated and coordinated approach to water management at the river basin scale;
- Promotes the protection and sustainable use of soil;
- Aims to ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment;
- Ensure biodiversity considerations become embedded in all the main sectors of economic activity, public and private;
- Promote the understanding, evaluating and protecting countryside character and diversity;
- Reconcile development requirements with the need to protect, conserve and, where appropriate, improve the landscape, environmental quality, wildlife habitats and recreational opportunities of the coast;

- Promote coastal habitats enhancement and extension, creating a sustainable network for wildlife;
- Maintain the current area of sand dunes in Lincolnshire and ensure their nature conservation interest is not lost;
- Seek opportunities to restore areas of sand dune habitat lost to forestry, agriculture or other human uses;
- Limit human interference to ensure the natural processes responsible for the formation and evolution of existing dune systems continue;
- Maintain the current area of saline lagoon and saline/brackish ditch habitat;
- Enhance the quality of existing lagoons and saline/brackish ditches;
- Recreate 2 ha of saline lagoons by 2010;
- Increase the area of saltmarsh in Lincolnshire by 140 ha by 2010; and
- Maintain the quality of the existing resource in terms of community and species diversity and, where necessary, restore the nature conservation interest through appropriate management.

4 Key Environmental Issues and Assessment Criteria

4.1 Key Issues and Assessment Criteria

The identification of issues facing this coastal area provides an opportunity to consider how these issues might be addressed. The identification of environmental problems is a requirement of the SEA Directive:

> The 'Environmental Report' required under the SEA Directive should include:
>
> "any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC [the 'Birds Directive'] and 92/43/EEC [the 'Habitats Directive']"
>
> Annex 1(d) SEA Directive

Based on the key environmental issues identified in the baseline review, the scoping stage of the SEA has produced a series of assessment criteria to aid in the identification of likely significant effects upon the environment of implementing the SMP. Table 4-1 includes the assessment criteria that will be used to identify likely significant impacts. The assessment criteria are listed under the relevant SEA receptor.

Table 4-1: **SEA Issues and Assessment Criteria**

Issue	Comments	Assessment Criteria
Biodiversity, soil[10] and the natural environment		
There are a number of internationally, nationally and locally environmentally designated sites along the coast, important for the habitats and wildlife they support. These designations confer legal obligations in the case of internationally designated sites. Environmental policy documents recommend maintenance and where possible, improvements to the quality of environmental sites.		• Ensure that the impact on the UK's internationally designated habitats and protected species is acceptable. • Support the conservation and enhancement of biodiversity in the wider coastal zone and provide sufficient time for ecological surveys.
The scoping exercise has identified that there are areas of intertidal habitat at risk from coastal squeeze, including areas of salt marsh and saline lagoon.		
Some fragmentation of habitats has been identified, particularly in coastal areas which are used for recreation or where land reclamation has historically taken place.		

[10] Soil quality is deemed to be an issue beyond the scope of the SMP

Issue	Comments	Assessment Criteria
A number of environmental policy documents highlight the potential detrimental effect that dredging and mineral extraction have on habitats.	The SMP does not have the authority to influence policy on dredging.	
Cultural heritage and landscape		
The scoping exercise has identified that there are cultural heritage assets at risk from coastal erosion and flooding, including Scheduled Monuments, listed buildings and conservation areas.		• Minimise damage to designated and significant historic environment assets from cliff erosion and flooding and provide sufficient time for research of archaeological features. • Maintain and where possible, improve the quality of the coastal landscape.
The scoping exercise has identified the quality of the coastal landscape is a key feature of some areas of this coastline. Coastal defences have the potential to have an impact on coastal landscape quality		
Climatic factors and air[11]		
The scoping exercise has identified that sea level rise and climate change are likely to increase coastal erosion and flooding in the future.	The effects of sea level rise on coastal erosion and flooding are considered as part of the assessments to support SMP policy development. The SMP does not have any authority to influence policy on climatic factors, however, the SMP will influence how some of the consequences of climate change are managed. Assessment criteria are included relating to the consequences of climate change (such as coastal squeeze or impacts on material assets).	

[11] Air quality is deemed to be an issue beyond the scope of the SMP

Issue	Comments	Assessment Criteria
Material assets including infrastructure, agriculture and tourism		
There are a number of assets of national importance located at the coastline (such as Grimsby port and Easington Gas Terminal) which are affected by shoreline management policy.		• Avoid interruption to functioning of the nationally, regionally and locally important social and economic assets of the area. • Ensure that the impact on the UK's area of agricultural land is acceptable and protect as much grade 1 and 2 agricultural land as possible.
There are a number of assets of regional and local importance (such as roads, railways, drainage infrastructure and other services) which may be affected by coastal flooding or erosion over the lifetime of the SMP.		
The scoping exercise has identified that there are potentially large areas of high grade agricultural land at risk of coastal flooding. There are also areas of high grade agricultural land at risk from coastal erosion.		
The scoping exercise has identified that tourism is a key input to the local economy and as such, access to the coast is important.		
Population including communities and flood risk		
The scoping exercise has identified that communities within the SMP area are at risk of coastal flooding and erosion. There are significant pockets of deprivation along the coastal strip. The scoping exercise has identified that sufficient time is needed to allow communities to adapt to changes resulting from shoreline management.		• Minimise coastal flood and erosion risk to people and property and protect as many settlements as possible. • Provide sufficient time if necessary for community adaptation.
Water including coastal processes and water quality		
Environmental policy documents recommend limiting human interference in order to allow natural coastal processes to continue.		• Prevent interruption of coastal processes which supply sediment to other coastlines and create intertidal and subtidal habitats as well as providing an important sustainable flood risk management function.
The scoping exercise has identified that a compliance check against the Water Framework Directive will be required to maximise water quality.		

4.2 Evaluation of Significance of Impacts

Following the identification of key impacts, expert judgment will be used to make a high level assessment of the significance of these impacts based on the importance of the receptor and the magnitude of the effect following the Source-Pathway-Receptor model.

The assessment will be based on a number of key considerations based around the nature of the impact (source) and the nature of the receiving environment (receptor):

Nature of Impact:

- Spatial extent of effect;
- Temporal extent of effect;
- Probability of effect occurring;
- Frequency of effect;
- Permanence of effect; and
- Cumulative/secondary effects.

Nature of Receptor

- Vulnerability and sensitivity of impacted environment,
- Impact upon environmental protection objectives/targets.

Given that the SMP document and its policies are high level, the assessment will be based on established effects wherever possible, but will rely heavily on expert judgment of anticipated effects.

5 Consultation on this Report

> The SEA Directive requires that the public, together with certain environmental bodies:
>
> "be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report"
>
> (Article 6(2))

This draft Scoping Report will be sent to the statutory SEA consultees (Natural England, Environment Agency and English Heritage) for comment.

In line with the UK SEA Regulations[12] where a consultation body wishes to respond to consultation on the scope of the assessment it must do this "within the period of 5 weeks beginning with the date on which it receives the responsible authority's invitation to engage in the consultation" (Regulation 12(5)).

The primary purpose of this consultation phase is to determine the scope and level of detail to be provided in latter stages of the SEA and Environmental Report.

[12] The Environmental Assessment of Plans and Programmes Regulations 2004, Statutory Instrument 2004 No. 1633

6 Conclusions and Next Steps

Following consultation on the draft Scoping Report, the comments received will be integrated into the report. The Scoping Report will then be adopted and the next stage of the SEA can begin. The next stage involves the prediction and evaluation of the effects of the SMP and the production of an SEA Report to document this process. Following completion of the SEA Report, it will be available to support the public consultation on the draft SMP, which is likely to take place in summer 2009.

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8 Appendix A: Pertinent Legislation and Policy Review

Table A-1: The relevant policy context and key messages for the SEA of the SMP

Plan	Key Message	Relevant SEA Directive Topic
International		
The Habitats Directive (92/43/EEC)[13]	Requires the protection of species and habitats of EU nature conservation designation.	Biodiversity
Birds Directive (79/409/EEC)[14]	Provides for the protection of all naturally occurring wild bird species and their habitats, with particular protection of rare species.	Biodiversity
The Convention on Wetlands of International Importance 1971 (Ramsar Convention)	Provides for the protection of waterfowl habitat.	Biodiversity
The Water Framework Directive (2000/60/EC)[15]	Promotes an integrated and coordinated approach to water management at the river basin scale. Also encourages protection of soil and biodiversity.	Water, Soil, Biodiversity
National		
The Wildlife & Countryside Act (1981) Amended on several occasions, most notably by the Countryside and Rights of Way (CRoW) Act (2000)[16]	Principal instrument for the protection of Sites of Special Scientific Interest and endangered wildlife within the UK.	Biodiversity
UK Biodiversity Action Plan (1994)[17]	UK Response to the Convention on Biological Diversity. Sets out national and local biodiversity action plans.	Biodiversity
Biodiversity Strategy for England (2002)[18]	Ensure biodiversity considerations become embedded in all the main sectors of economic activity, public and private.	Biodiversity
Rural White Paper (2000)[19]	Deals with the importance of understanding, evaluating and protecting countryside	Landscape

[13] Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna accessible via: http://ec.europa.eu/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm
[14] Council Directive 79/409/EEC on the conservation of wild birds
[15] Directive 2000/60/EC of the European Parliament and the Council establishing a framework for the Community action in the field of water policy accessible via: http://ec.europa.eu/environment/water/water-framework/index_en.html
[16] Wildlife and Countryside Act (1981) accessible via: http://www.jncc.gov.uk/page-1377
[17] UK Biodiversity Action Plan accessible via: http://www.ukbap.org.uk/
[18] Working with the Grain of Nature: A Biodiversity Strategy for England (2002) accessible via: http://www.defra.gov.uk/wildlife-countryside/biodiversity/biostrat/index.htm

Plan	Key Message	Relevant SEA Directive Topic
	character and diversity.	
Heritage White Paper[20]	To put the historic environment at the heart of the planning system.	Cultural Heritage, Landscape
The Historic Environment: A Force for Our Future (2001)[21]	The full potential of the historic environment should be realised and it should be accessible to all.	Cultural heritage, Material Assets
Water Act 2003[22]	Encourage more efficient use of water resources.	Water
Draft Soil Strategy for England (2001)[23]	Improve the quality of England's soils.	Soil
Climate Change Act (2008)[24]	Two key aims: to improve carbon management and help the transition towards a low carbon economy in the UK; and to demonstrate strong UK leadership globally.	Climatic Factors
The UK Climate Change Programme (2006)[25]	A suite of new and established measures are predicted to reduce UK carbon emissions to 15 – 18% below 1990 levels by 2010. Also promotes anticipatory adaptation	Climatic Factors, Landscape, Biodiversity, Population
Making Space for Water (2005)[26]	Advocates a holistic approach to flooding, addressing all types of flooding together	Climatic Factors, Landscape, Biodiversity
The Energy White Paper (2003)[27]	10% of electricity to be generated from renewable sources by 2010, with a target of 20% by 2020	Climatic Factors
Soil Action Plan for England (2004)[28]	52 actions to ensure better soil protection and management	Soil, Landscape

[19] Rural White Paper (2000) Our Countryside: The Future – A Fair Deal for Rural England accessible via: http://www.defra.gov.uk/rural/ruralwp/whitepaper/default.htm
[20] The Government White Paper: Heritage Protection for the 21st Century (2007) accessible via: http://www.culture.gov.uk/Reference_library/Consultations/2007_current_consultations/hpr_whitepaper07.htm
[21] The Historic Environment: A Force for our Future (2001) accessible via: http://www.culture.gov.uk/Reference_library/Publications/archive_2001/his_force_future.htm
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[26] Making Space for Water: Taking forward a new Government strategy for flood & coastal erosion risk management accessible via: http://www.defra.gov.uk/environ/fcd/policy/strategy.htm
[27] Energy White Paper: Meeting the energy challenge accessible via: http://www.dti.gov.uk/energy/whitepaper/page39534.html
[28] First Soil Action Plan for England 2004-2006 accessible via: http://www.defra.gov.uk/environment/land/soil/sap/index.htm

Plan	Key Message	Relevant SEA Directive Topic
Waste Strategy for England (2007)[29]	Promotes best practicable environmental option (BPEO), the waste hierarchy and the proximity principle. Sets a major target of increasing recycling rates to 25% by 2005/06	Soil, Population
Landfill Regulations (2002) and Amendment (2005)[30]	Sets a series of substantial targets for the reduction of biodegradable municipal waste going to landfill	Soil, Population
Sustainable Communities Plan (2003)[31]	Key aims include reducing housing shortage, improving liveability and using land more effectively	Population
Planning Policy Statement (PPS) 1: Delivering Sustainable Development (2005)[32]	Sets out how planning should contribute to sustainable patterns of urban and rural development	All Topics
Draft PPS: Planning and Climate Change, Supplement to PPS1.	Sets out how planning should minimise impacts on climate change through increased resource and energy efficiency, sustainable transportation and maximises resilience to the effects of climate change. This document is currently in draft form.	Biodiversity, Landscape, Climatic Factors, Population
PPS9: Biodiversity and Geological Conservation (2005)	States the importance of biodiversity conservation and enhancement to the promotion of sustainable development	Biodiversity
PPS7 Sustainable Development in Rural Areas (2004)	Promotes support of a wide range of economic ensure that all necessary measures have been taken to ensure that waste is recovered or disposed of without causing harm to human health or the environment The full potential of the historic environment should be realised and it should be accessible to all. Promotes support of a wide range of economic activity in rural areas. Promotes the use of Landscape Character Assessment.	Landscape; Population;
PPS10: Waste management (2005)	Promotes driving waste management up the waste hierarchy	Population, Climatic Factors
PPG13: Transport (2001)	Aims to promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and to reduce the need to travel, especially by car.	Population, Climatic Factors
PPG15: Planning and the Historical Environment (1994)	Protect and enhance historic buildings, areas and landscapes, and their settings	Landscape, Cultural Heritage and Material

[29] Waste Strategy for England (2007) accessible via: http://www.defra.gov.uk/environment/waste/strategy/index.htm
[30] Council Directive 99/31/EC on the landfill of waste and The Landfill (England and Wales) Regulations 2002 and Amendment Regulations 2005 accessible via: http://www.opsi.gov.uk/SI/si2002/20021559.htm
[31] Sustainable Communities: Building For the Future (2003) accessible via: http://www.communities.gov.uk/index.asp?id=1163452
[32] The following Planning Policy Statements and Planning Policy Guidance Notes are accessible via: http://www.communities.gov.uk/index.asp?id=1143802

Plan	Key Message	Relevant SEA Directive Topic
		Assets
PPG16: Archeology and planning (1990)	Archaeology is an irreplaceable resource and the presumption should be that important remains will be preserved in situ. Archaeology is a material consideration in the planning process.	Cultural Heritage and Material Assets
PPG 17: Planning for Open Space, Sport and Recreation[33]	Open space, sport and recreation are fundamental to people's quality of life. Planning needs to provide open space and leisure and recreation facilities.	Landscape, Biodiversity, Population, Soil
PPS23: Planning and Pollution Control (2004)	The precautionary principle should be invoked with regard the harmful effects of pollution	Air; Water; Soil
PPS25: Development and Flood Risk (2006)	Direct development away from areas at highest risk from flooding	Population, Landscape, Water
PPG20: Coastal Planning (1992)	It is the role of the planning system to reconcile development requirements with the need to protect, conserve and, where appropriate, improve the landscape, environmental quality, wildlife habitats and recreational opportunities of the coast. As a general rule the limit of the coastal zone in the seaward direction is mean low water mark. Above mean low water mark, local planning authorities have powers to control the development and use of land under the Town and Country Planning Act 1990. The key policy issues for coastal planning are: • Conservation of the natural environment • Development, particularly that which requires a coastal location • Risks, including flooding, erosion and land instability • Improving the environment, particularly of urbanised or despoiled coastlines.	Landscape, Population, Material Assets, Heritage
Regional[34] - East Midlands		
The East Midlands Plan (RSS8) (draft)	Sets out the vision for the region, in particular the Eastern Sub-area policies seek to ensure that development will protect and enhance the natural and historic environment of the	All Topics

[33] PPG 17 accessible via: http://www.communities.gov.uk/index.asp?id=1144067#P25_1360
[34] http://www.emra.gov.uk/

Plan	Key Message	Relevant SEA Directive Topic
	coastal margin including the Wash and Humber Estuary Special Protection Areas, and the Saltfleetby-Theddlethorpe Dunes Special Area of Conservation; Any development along the Lincolnshire coast should require a coastal location, be located primarily in existing urban areas and in ways that protect and enhance natural and cultural heritage.	
The East Midlands Regional Housing Strategy 2004-2010[35]	The objective of the strategy is "to ensure that the existing and future housing stock is appropriate to meet the housing needs of all parts of the community."	Population
East Midlands Regional Environment Strategy	The Regional Environment Strategy provides a framework for environmental policy development in the East Midlands by highlighting the issues that need to be addressed and putting forward environmental objectives and policies.	Climatic Factors,
The East Midlands Regional Energy Strategy 2004	The East Midlands will take a lead in moving towards a low carbon future that benefits the economy, protects the environment and supports the communities.	Climatic Factors
The East Midlands Regional Energy Strategy A framework for Action 2007	An overall aim of the Framework is to achieve a low carbon future that will deliver • Economic opportunities through exploitation of new markets and technologies as well as the efficient use of resources • Low carbon design and construction through the planning and regeneration process that delivers affordable warmth and cooling. • A reduction in greenhouse gas emissions to ensure that changes we experience in our climate are within limits that we can adapt to.	Climatic Factors
Putting wildlife back on the map – A biodiversity strategy for the east Midlands 2004	The vision is for a region – its landscapes and water bodies, coasts and seas, towns and cities – where wild spaces and habitats are part of healthy functioning ecosystems; where we nurture, treasure and enhance biodiversity, and where biodiversity is a natural consideration of policies and decisions in society as a whole. The specific vision for the coast and sea is to ensure that the coast, much of which is protected by national and international wildlife site designations will be secure from unsustainable exploitation and inappropriate development.	Biodiversity

[35] http://www.emra.gov.uk/what-we-do/housing-planning-transport/rss-review/documents

Plan	Key Message	Relevant SEA Directive Topic
	The continued protection, management and enhancement of coastal wildlife sites is of paramount importance to the future of biodiversity in this area and in the region as a whole.	
Regional – Yorkshire and Humber		
Yorkshire and Humber Plan (RSS) 2008	Achieve a more sustainable pattern and form of development, investment and activity in the Yorkshire and Humber Region – putting a greater emphasis on matching needs across the Region with opportunities and managing the environment as a key. In particular, protect the unique character, heritage and biodiversity of the undeveloped coast and coastal waters; conserve the geomorphological importance and natural beauty of the North York Moors National Park coast, the Flamborough Head coast, and Spurn Head and investigate extending Heritage Coast designation between Scarborough and Flamborough Head; Protect the historic seaside character of coastal settlements and upgrade their town centres and the seaside settings; avoid the risk from flooding, erosion and landslip along the coast, including through roll-back approaches to relocate existing uses; improve marine water quality and maintain and extend 'blue flag' standards; investigate scope for more renewable energy initiatives.	All topics
Yorkshire and Humber Regional Sustainable Development Framework 2003 - 2005[36]	To ensure that sustainable development is an integral part of policy and decision-making at the regional, sub-regional and local levels throughout Yorkshire and Humber.	All topics
Yorkshire and Humber Regional Economic Strategy 2006-2015[37]	The region seeks high quality, sustainable growth that will maximise long term benefits to businesses, people and to the environment.	Population
Regional Energy and Infrastructure Study[38]	The vision is that Yorkshire and Humber will continue to be a primary energy provider for the UK while achieving low carbon energy targets.	Climatic Factors
Sub-regional		

36 http://www.yhassembly.gov.uk/The%20Library/Regional%20Strategies/
37 http://www.yorkshire-forward.com/www/view.asp?content_id=106&parent_id=17
38 http://www.yhassembly.gov.uk/The%20Library/Other%20Research/Energy%20and%20Microgeneration/

Plan	Key Message	Relevant SEA Directive Topic
Witham Catchment Abstraction Management Plan (CAM)[39]	The vision for the Witham Catchment Abstraction Management Strategy (CAMS) is to ensure that the water resources of the Witham catchment are managed sustainably for the future, with due regard for environmental and abstractor needs.	Water, Landscape, Biodiversity
Steeping, Great Eau and Long Eau CAMS[40]	This CAM is being used to manage water resources at a local level.	Water, Landscape, Biodiversity
The Grimsby, Ancholme and Louth CAM (April 2006)[41]	This CAM is being used to manage water resources at a local level to ensure that there is water available for abstraction while protecting the needs of the environment.	Water, Landscape, Biodiversity
Lincolnshire Biodiversity Action Plan 2nd Edition – Coastal and Marine Chapter[42]	The Coastal and Marine Vision is: • Existing habitats are protected from the pressure of harmful development. • Coastal habitats have been enhanced and extended, creating a sustainable network for wildlife. • Sustainable development on all parts of the coastline has created a coastal environment that benefits people and wildlife. • The importance of coastal and marine biodiversity for tourism and the local economy has been recognised. • The North Sea is managed sustainably with respect to global marine factors and in a manner complementary to the environment, economy and society of Lincolnshire.	Biodiversity
Coastal Sand Dunes Habitat Action Plan[43]	Targets identified: • Maintain the current area of sand dunes in Lincolnshire and (through appropriate management and protection) ensure their nature conservation interest is not lost.	Biodiversity

39 http://www.environment-agency.gov.uk/commondata/acrobat/final_strategy_p1_785336.pdf
40 http://publications.environment-agency.gov.uk/pdf/GEAN0107BLRY-e-e.pdf
41 http://publications.environment-agency.gov.uk/pdf/GEAN0406BKJU-e-e.pdf
42 http://www.lincsbap.org/publications/index.php
43 http://www.lincsbap.org/habitats/actionplan.php?hap=c1

Plan	Key Message	Relevant SEA Directive Topic
	• Seek opportunities to restore areas of sand dune habitat lost to forestry, agriculture or other human uses. • Limit human interference to ensure the natural processes responsible for the formation and evolution of existing dune systems continue.	
Saline Lagoons Habitat Action Plan[44]	Targets identified: • Maintain the current area of saline lagoon and saline/brackish ditch habitat. • Enhance the quality of existing lagoons and saline/brackish ditches. • Recreate 2 ha of saline lagoons by 2010, (suggested sites, arable land at Gibraltar Point, Howden's Pullover and North Cotes in North Lincolnshire)	Biodiversity
Saltmarsh Habitat Action Plan[45]	Targets identified from the BAP: • Maintain the area of saltmarsh in Lincolnshire. Ensure there is no further net loss in saltmarsh (although local losses and gains are to be expected in such a dynamic system). • Increase the area of saltmarsh in Lincolnshire by 140 ha by 2010. This will help to offset losses nationally in the recent past and to offset likely losses due to coastal squeeze. • Maintain the quality of the existing resource in terms of community and species diversity and, where necessary, restore the nature conservation interest through appropriate management	Biodiversity
Air Quality and Review for Lincolnshire[46]	Ensure air quality is monitored and where levels exceed national standards, the designation of Air Quality management Areas (AQMA) should be progressed.	Air
Lincolnshire Structure Plan 2006[47]	It is the overall challenge of promoting economic progress through growth and qualitative sectoral improvements, whilst protecting the environment and Lincolnshire's distinctive	All Topics

44 http://www.lincsbap.org/habitats/actionplan.php?hap=c2
45 http://www.lincsbap.org/habitats/actionplan.php?hap=c3
46 http://www.e-lindsey.gov.uk/environment/environmental-protection/upload/Air-Quality-Review-and-Assessment-for-Lincolnshire-pdf-document.pdf
47 http://www.lincolnshire.gov.uk/section.asp?sectiontype=weblink&catid=3698&docid=48762

Plan	Key Message	Relevant SEA Directive Topic
	quality of life, which this Structure Plan seeks to resolve. The overall aim of the Structure plan is: To improve the quality of life for those who live, work, visit and invest in Lincolnshire through the promotion of sustainable development. Specific coastal messages: • Tourism makes a vital contribution to the Lincolnshire economy. Tourism activity generates economic benefits, particularly important on Lincolnshire's coast, in the rural economy and where it can support regeneration initiatives. • Protect and enhance the coastal conservation and heritage areas. • Ensure protection of coastal and water environments and reduce the impact of new development. • To protect the important environmental resources and habitats of the coast	
Providing for Lincolnshire's Future – A Sustainability Framework incorporating environmental stewardship strategy 2005	The council's six ambitions which will drive it's objectives and policy over the next few years: • Create economic prosperity • Enrich the quality of life • Provide the opportunity for people to achieve their fulfilment • Improve community engagement • Improve the transport infrastructure • Provide community focused cost effective service	All Topics
Lincolnshire Coast and Marshes Natural Area (1997)	Key objectives from this document are: • To maintain the extent and quality of the characteristic semi-natural habitats in the Natural Area, particularly the grasslands, coastal, freshwater and woodland habitats. • To maintain and enhance important species and populations which are characteristic of the Natural Area.	Biodiversity, Landscape

Plan	Key Message	Relevant SEA Directive Topic
	• To increase awareness, and encourage appropriate use, of our natural heritage to ensure that the countryside can be enjoyed by all, including future generations without damaging the Natural Area. • To ensure that the geological and geomorphological features of the Natural Area are maintained for future research and enjoyment.	
Local- East Lindsey District Council[48]		
East Lindsey Sustainability Appraisal Scoping Report [49]	Key issues identified of relevance in the Scoping Report: • Increasing pressure to limit development within river floodplains and also along the coast in coastal inundation zones due to flood risk. • The district has a rich and diverse natural heritage including inland and coastal sites and habitats that have nature conservation and/or geological value (of international, national, regional and local importance). This includes statutory and non-statutory designated sites (e.g. The Wash, Gibraltar Point, Saltfleetby to Theddlethorpe dunes and the Humber Flats, Marshes and coastline and Woodlands such as Bardney Limewoods and Kenwick woods; and wetland habitats such as coastal and floodplain grazing marsh). • A key issue is how to deal with changes associated with the potential for coastal tourism to move to the countryside (and associated infrastructure – e.g. new caravan parks) and the pressure for development (e.g. residential and commercial) away from urban areas. • There are three main sources of flooding within the district; from the sea, from rivers and from surface water flooding from drainage infrastructure (although other sources such as artificial water bodies and groundwater should be noted). Adapting to flooding and climate change is, in the Environment Agency's opinion, the most significant challenge being faced by East Lindsey	All Topics

[48] http://www.e-lindsey.gov.uk/housing/

Plan	Key Message	Relevant SEA Directive Topic
	District.	
East Lindsey A Community Plan for a Sustainable Future[50]	The vision for the future of East Lindsey is: • "a distinct, dynamic and proud district where organisations and communities work together for a better quality of life." The Plan identifies the following priorities: Climate Change & the Environment; Community Safety; Economic Prosperity; Education & Skills; Families; Children & Young People; Health & Wellbeing; Older People; Rural Services & Accessibility; Lincolnshire Coastal Action Zone (CAZ).	Population
East Lindsey Local Plan Alteration 1999 – Saved Polices from September 2007[51]	The protection and improvement of the very landscape and features which attract visitors shall be achieved by strict development control measures and a joint programme for coastal management. East Lindsey, has designated Coastal Conservation Areas in the following locations:- • CCA1 - Tetney to Mablethorpe • CCA2 - Sutton on Sea to Chapel St. Leonards • CCA3 - Chapel St. Leonards to Ingoldmells • CCA4 - Skegness to Friskney	All Topics, in particular Biodiversity and Landscape
Lincolnshire Coastal Zone Action Plan[52]	The purpose of the Coastal Action Zone Partnership is to work together to identify ways of bringing together the experience and resources of the multitude of partners to provide a common, coherent and practicable solution to the issues affecting coastal areas and their regeneration. The purpose of the Coastal Action Zone Partnership is to work together to identify ways of bringing together the experience and resources of the multitude of partners to provide a common, coherent and practicable solution to the issues affecting coastal areas and their regeneration. The Action Plan illustrates the recommendations of the partnership.	Landscape, Water

49 http://www.e-lindsey.gov.uk/environment/planning/policy-local-plan/upload/FinalScopingReport.pdf
50 http://www.e-lindsey.gov.uk/community/community-strategy/upload/LSP%20Community%20Plan%20-%20Final.pdf
51 http://www.e-lindsey.gov.uk/environment/planning/policy-local-plan/upload/East%20Lindsey%20Local%20Plan%201999%20Saved%20Policies-2.pdf
52 http://www.coastalactionzone.co.uk/default.asp?id=33&mnu=33

Plan	Key Message	Relevant SEA Directive Topic
East Lindsey Strategic Flood Risk Assessment[53]	The Rapid Inundation Zone of the East Lindsey coast is very extensive due to the unique low lying nature of the ground along coastline. Key messages from the SFRA: There is potential for extensive coastal flooding from tidal inundation in many areas between North Somercotes and Skegness, fluvial flooding in the Bain Valley and also in the low lying area to the south of the line between Coningsby and Skegness. At particular risk are the larger settlements of Skegness and Mablethorpe from tidal flooding overtopping and breaching of coastal defences.	Water
East Lindsey Core Strategy Issues and Options Consultation 2007[54]	The East Lindsey consultation vision for the LDF is: We would like to see a District with:- • A network of thriving, safer and healthy communities, where people can enjoy a high quality of life; • A diverse and regenerated economy that is not just dependent on agriculture and tourism; • An inclusive, equal and diverse society that has tackled the problems of rural isolation and deprivation; • A high quality environment that makes the most of its special qualities, particularly the coast, the Wolds and the market towns; • New development that successfully balances the needs of the economy, communities and the environment.	All Topics
East Lindsey District Landscape Character Assessment (Draft) 2008	The key characteristics of the Lincolnshire Coast and Marshes Joint Character Area are described as: flat coastal plain to east, rising gradually in west to more undulating land at foot of the Lincolnshire Wolds; predominantly open, medium-scale agricultural landscape; concentration of larger settlements towards the coast; land drained to coast by combination of irregular ditches, streams and dykes; coastline experiencing both erosion and accretion; major coastal dune systems and salt marshes and artificial sea defences along the coastline; extensive shallow beach; coastal strip significantly altered by discordant 20th century development including seaside resorts, theme parks, bungalows, caravan parks	

53

54 http://www.e-lindsey.gov.uk//environment/planning/policy-local-plan/upload/issuesandOptions.pdf

Plan	Key Message	Relevant SEA Directive Topic
	and industry.	
Local – East Riding of Yorkshire Council[55]		
Landscape Character Assessment for East Riding 2005[56]	The East Riding has a varied landscape and quality of the landscape across the district also varies. Several high quality landscapes have been identified based on their condition and strength of character. High quality landscapes in the East Riding are; the Yorkshire Wolds, the Derwent River corridor, Thorn and Hatfield Moors in the Humberhead levels, Sunk Island Farmland in the Humber Estuary and the two heritage Coasts, namely Spurn Point and the Flamborough Coast.	Landscape
East Riding of Yorkshire Council Beverly Borough Local Plan June 1996	The protection and enhancement of the Borough's environment has been made a principal aim of the plan's strategy.	All Topics
East Riding of Yorkshire East Yorkshire Borough Wide Local Plan1997[57]	The following objectives will guide the implementation of planning policy to ensure that the landscape qualities of the coastline are recognised and the integrity of the coastal environment is safeguarded: • To recognize the long term nature and importance of physical progress affecting the coastline and their significance to the coastal cell; • To ensure that essential development is adequately sited to be protected from anticipated rates of coastal erosion • To safeguard the character of the landscape and protect nature conservation interests • To promote public enjoyment and appreciation of the public zone.	All Topics
Holderness District Wide Local Plan 1999[58]	The Council will only approve development proposals in the Holderness coastal zone which are not likely during the life expectancy of the development to:	All Topics

55 http://www.eastriding.gov.uk/
56 http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=0&p_app_ref=&p_spec_ref=
57 http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=2172&p_app_ref=&p_spec_ref=
58 http://www.eastriding.gov.uk/az/face_service_live_proc?p_aplaws_ref=118&p_category_ref=2172&p_app_ref=&p_spec_ref=

Plan	Key Message	Relevant SEA Directive Topic
	• Lead to a requirement to construct new or to extend or enhance existing coastal protection or flood defences • Interfere significantly with natural coastal or estuarine processes • Increase the risk of flooding and coastal erosion on site or elsewhere • Be affected by the risk of coastal erosion within the developments estimated lifespan • Conflict with nature conservation policies of this plan. • Preclude reasonably practical options to conserve or enhance important coastal habitats by managed retreat or soft engineering techniques.	
East Riding of Yorkshire LDF Scoping Report	Key issues identified in the report: • Economic dependence on the tourist industry in East Riding, particularly the coastal area, is increasing. Physical factors, such as remoteness of the area, coastal erosion and frequent storms, put limits on the development of the industry. Investments in tourist infrastructure rather than in services for local residents and the seasonal type of jobs associated with the tourism industry reduce the overall sustainability of the region. • The Yorkshire and Humber region has the second largest area at risk from flooding in the country as a result of the low-lying and flat landscape as well as changing climate. Effective management of existing and future developments in the flood plain area is critical.	All topics
'Our East Riding' Community Strategy 2006 -2016[59]	The vision for the borough is: Our aim is to sustain and create thriving, vibrant and sustainable communities within the unique East Riding environment in which everyone can enjoy a high quality of life.	Population
East Riding Coastal Zone Management Plan: Towards a	The plan lays out a framework for action to address the issues those that live on, work at or visit the East Riding coastal zone.	Water, Landscape

[59] http://www.lsp.eastriding.gov.uk/ccm/navigation/category.jsp?categoryID=21452

Plan	Key Message	Relevant SEA Directive Topic
Sustainable coast 2002		
The 'Roll Back' of residential and agricultural dwellings at risk of coastal erosion in the East Riding of Yorkshire (Dec 2005)	Key policy to be considered: Proposals for the replacement of residential dwellings considered to be at risk from coastal erosion within the next 50 years will be permitted where: i. the Council is satisfied that the dwelling is a permanent structure and is occupied on a permanent residential basis; ii. the application secures the demolition of the existing dwelling and restoration of the site within three months of occupation of the replacement; iii. the design of the replacement dwelling reflects the character and appearance of the new locality; iv. the gross volume of the replacement dwelling is no larger than the dwelling it replaces, taking into account permitted development rights associated with the existing property. In order to secure more sustainable patterns of development, this will be in the form of replacing the dwelling on a site that is judged to have a life expectancy of at least 100 years: v. within the development limit,* or adjoining it, of a settlement within the Coastal Zone**; vi. within or adjoining the built up area of a smaller settlement (that does not have a development limit) within the Coastal Zone. B. Proposals for the replacement of agricultural dwellings/farmsteads considered to be at risk from coastal erosion within the next 50 years will be permitted within the existing holding to a site that is judged to have a life expectancy of at least 100 years, provided: i. the dwelling/farmstead is expected to remain in agricultural use; ii. the application secures the demolition of the existing dwelling and restoration of the site within three months of occupation of the replacement; iii. the gross volume of the replacement dwelling is no larger than the dwelling it replaces, taking into account permitted development rights associated with the existing property; iv. the design of the replacement dwelling reflects the character and appearance of the new locality.	Landscape, Population, Material Assets
East Riding of Yorkshire Sustainable Energy Strategy (2003)	The following objectives are proposed: • Eradicate fuel poverty, giving the people of the East Riding, particularly those of the most vulnerable groups, access to affordable warmth	Climatic Factors, Population, Material Assets

Plan	Key Message	Relevant SEA Directive Topic
	• Reduce the emission of greenhouse gases resulting from the delivery of Council services by minimising emissions of carbon dioxide from all sectors – through energy efficiency. • Increase energy efficiency and use of renewable energy in existing buildings; • Ensure that new buildings incorporate sustainable design and construction techniques, wherever feasible, to minimise energy demand and maximise use of renewable energy; • Enable and encourage more sustainable patterns of travel, cleaner and zero-emissions fuels and vehicle technologies, and a shift towards public transport, walking and cycling. • Consider energy as an overarching issue in the development and review of relevant Council policies.	
East Riding Biodiversity Plan[60]	The vision of the plan is: 'Working together to safeguard the biodiversity of the East Riding for now and forever'	Biodiversity
Shoreline Management Plan – East Riding of Yorkshire Council Action Plan	The action plan identifies the following issues for Flamborough head: • Uncertainty of cliff erosion • Condition of defences	Water, Landscape
Local - North East Lincolnshire Council[61]		
North East Lincolnshire LDF Scoping Report (2005)	Issues identified for the borough • The population is currently declining whilst the average age is increasing. • On average, the population have a relatively low skill base with many young	All Topics

[60] http://search.eastriding.gov.uk/scripts/semaphoreserver.exe?SAVEDB=east_riding&ORGANISE_CODED=%3Af9&STYPE=simple&CMD=search.run&B=THTML&QUERY00=biodiversity+action+plan

[61] http://www.nelincs.gov.uk/

Plan	Key Message	Relevant SEA Directive Topic
	people not achieving average educational standards. • The economy appears strong statistically but masks the fact that wealth is not captured and fed into the local economy. • There is an assumption that to succeed people may need to move out. • The populations is general less healthy than regional and national indicators • Use of public transport is in continuous decline, with cars at the dominant mode of transport	
North East Lincolnshire Local Plan 2003[62]	The vision of the Local Plan is to help shape an environment that creates confidence in the area: • Creating confidence for investment • Creating confidence for regeneration • Creating confidence for communities that the environment and facilities they value will be protected.	All Topics
North East Lincolnshire Community Strategy[63]	The Community Strategy Visions is: North East Lincolnshire 2022 - By improving the physical appearance of the area and the quality of life for its residents, make North East Lincolnshire a place in which we are proud to live, work and welcome visitors.	Population
A regeneration strategy for North East Lincolnshire – New Horizons 2006 -2022[64]	The focus of the strategy is to deliver the Council's vision as set out in the Community Plan. The aspirations of this strategy are ambitious but realistic. This means that whilst the primary focus of our regeneration activities is on transforming and sustaining the competitiveness and performance of North East Lincolnshire to compete with the best performing areas at national, regional and local levels, in the medium and longer term, that our immediate focus must be on taking actions to stabilise and incrementally improve our performance.	All Topics

62 http://www.nelincs.gov.uk/localplan/
63 http://www.nelincs.gov.uk/NR/rdonlyres/FCE65B0E-FDFE-4FEC-A243-9583130350A0/0/communitystrat1.pdf
64 http://www.nelincs.gov.uk/NR/rdonlyres/9FADE14B-5A02-4FF2-BED7-928A2C8C7785/0/regenstrategyapp07171400.doc

Plan	Key Message	Relevant SEA Directive Topic
'Making the Connections' – NE Lincolnshire Cultural Strategy[65]	Objectives identified: • To raise the profile of northeast Lincolnshire as a centre of cultural activity. • To develop a sustainable infrastructure for cultural activity within the area. • To deliver actions to ensure that culture contributes to social and economic actions. • To ensure that culture contributes to and reflects diversity. • To promote a sense of place and promote community identity.	Population, Cultural Heritage, Material Assets

65 http://www.nelincs.gov.uk/NR/rdonlyres/3D28DCD9-EA7B-4F43-AF3F-C909FDCD7E48/0/Making_the_Connections_single.pdf