Humber Estuary Coastal Authorities Group

Flamborough Head to Gibraltar Point Shoreline Management Plan

Appendix E - Policy Development and Appraisal

Final

December 2010




Prepared for

Humber Estuary Coastal Authorities Group

Revision Schedule

Flamborough Head to Gibraltar Point Shoreline Management Plan
Appendix E – Policy Development and Appraisal
December 2010

Rev	Date	Details	Prepared by	Reviewed by	Approved by
CD1	9 November 2009	Consultation draft	**Jonathan Short** Assistant Coastal Engineer	**Dr John Pos** Associate	**David Dales** Director
F1	20 December 2010	Final	**Jonathan Short** Assistant Coastal Engineer	**Dr John Pos** Associate	**David Dales** Director

Scott Wilson
Scott House
Alençon Link
Basingstoke
Hampshire
RG21 7PP

Tel 01256 310200
Fax 01256 310201

www.scottwilson.com

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E1 Policy Development and the Appraisal Process

Introduction

E1.1 This Appendix details the steps and processes undertaken to appraise different Shoreline Management Plan policy options in order to develop the preferred policies. The following sections describe the general approach to carrying out the assessment of policies as part of Stage 3 of the Shoreline Management Plan. Subsequent chapters provide more detail on the specific steps undertaken.

General approach

E1.2 As part of Stage 2 a characterisation of the coast was undertaken and the SMP coastline was divided into areas of broadly similar character; these were termed Character Areas. Specific objectives were then set for each Character Area; these were based on the general Shoreline Management Plan principles also defined as part of Stage 2 and were developed in consultation with stakeholders and the Client Steering Group and Elected Members Forum. The objectives defined in Stage 2 were used as policy appraisal criteria to appraise the Shoreline Management Plan policy options identified for each Character Area

E1.3 The first step of policy appraisal involved identifying Shoreline Management Plan policies for appraisal in each Character Area. Where relevant, supporting flood risk management policies were also selected for appraisal (see main document, section 1.17). Policies were put forward for assessment if deemed sufficiently relevant and realistic to be worthy of full appraisal, but did not necessarily need to be viable. In some instances there were recognised benefits of appraising policies that were anticipated to be unviable; for example, in some cases it could be considered to be in the public interest to categorically rule a policy out, and by doing so, add weight to the preferred policy eventually chosen.

E1.4 Following the identification of discrete policy options for appraisal for individual Character Areas, coherent 'strings' of policies were developed representing a particular intent of management for an area. These were termed Policy Packages. Policy Packages were formed for stretches of the coastline covering multiple Character Areas where issues and processes are largely similar and/or strongly linked; these were termed Policy Development Zones (PDZs). Policy Packages 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 potential policy combinations over the whole frontage would have been an extremely lengthy and inefficient process.

E1.5 Policy Packages were assessed against appraisal criteria (based on the specific objectives previously identified) for each Character Area. This process was undertaken systematically using a CSG/EMF agreed 'traffic light' approach based on how well (or not) 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 carried out a number of guidelines were devised to aid the appraisal process.

E1.6 In parallel to this 'traffic light' appraisal approach another key part of the policy assessments leading to the selection of the preferred policy was the consideration of various legislative requirements and the wider sediment transport impacts of different policy combinations.

E1.7 Consultation formed an important and integral part of the policy development process. The public were consulted on the initial policy options and the proposed approach for assessment at an early stage of the process through a number of exhibitions along the frontage. In addition the Client Steering Group and Elected Members forum were closely involved in the entire process, agreeing the general approach, policy options for testing, appraisal methodology and developing the draft preferred policies. This was an inherently iterative process and one where the preferred policy was fine tuned. An overview of the policy development process is shown in Figure 1.1.

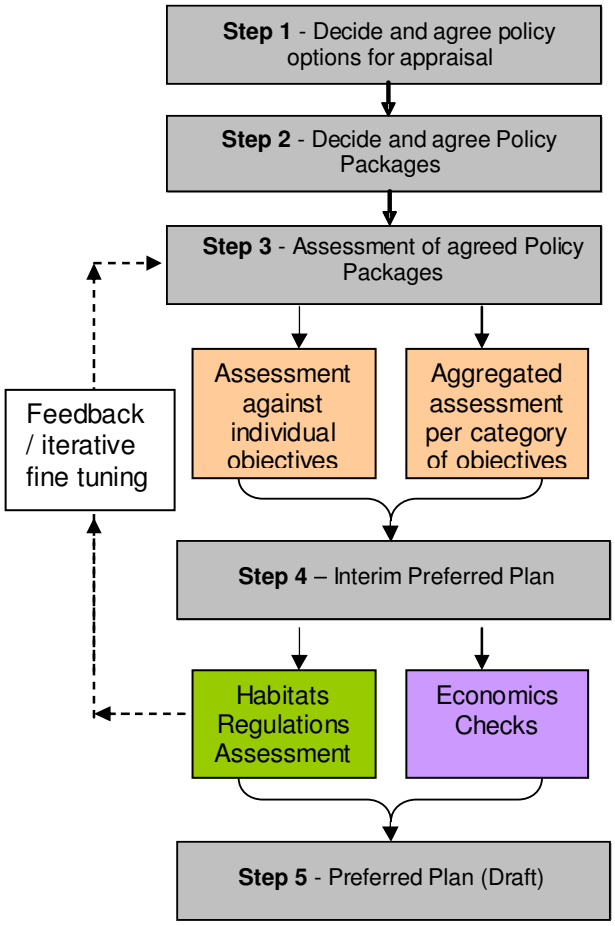


Figure 1.1: Steps undertaken to develop the draft preferred Plan.

E2 Overview of Policy Development and Objective Setting

Approach

E2.1 The approach to objective setting was agreed with the Client Steering Group and Elected Members Forum. Following the Thematic Review, characterisation of the coast and consultation, a set of principles was developed setting out a long term vision and ethos for management. From these principles a set of generic objectives were agreed as a basic starting menu to develop specific objectives. These objectives were then used to develop policy appraisal criteria to assess the impacts and effects of the different Policy Packages.

Characterisation

E2.2 The key features along the coast were used to develop a characterisation of the Shoreline Management Plan frontage. The entire frontage was split into nineteen Character Areas. The divisions between the areas were 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 2.1.

Table 2.1: 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	

Area	Basis for location of area boundaries
	Spurn is unique coastal feature – considered separately – rural land use.
Area 11: Easington Road to Stone Creek	
	Rural - Shoreline Management Plan 2 boundary
Area 12: East Immingham to Grimsby Docks	
	Industrial-urban land use change
Area 13: Grimsby to Humberston Fitties	
	Urban-rural land use change
Area 14: 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 18: Chapel Point to Skegness	
	Urban-rural land use change
Area 19: Seacroft to Gibraltar Point	

E2.3 The landward extent of the Character Areas was determined by the influence of the coastal zone and the extent of the potential flood and/or erosion risk. For example, where low-lying land stretches many kilometres inland in significant areas of Lincolnshire, the characterisation included 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 covered much shorter distances inland

E2.4 A detailed characterisation of the frontage is included in Appendix D.

Principles

E2.5 The following set of principles formed the basis for developing generic objectives. The generic objectives formed a 'menu' from which specific Character Area objectives, and policy appraisal criteria were chosen. 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
- To comply with legislative requirements and contribute to a safe and healthy environment.

Generic Objectives

E2.6 The following list of generic objectives was agreed by the Client Steering Group. This list was used as a 'menu' from which specific objectives for each area were selected.

Flood and erosion risk

- Minimise coastal flood and erosion risk to people, property and the environment
- Make effective use of existing man-made or natural defences

Communities

- Protect as many settlements as possible
- To maintain … as a … (viable town, seaside resort, regional commercial centre etc – pick from list) throughout the plan period.

Natural Environment

- Maintain natural processes relating to …(relevant biological or geological feature)
- Maintain and enhance if possible …(relevant biological or geological feature)
- Ensure that the impact on the UK's intertidal habitat is acceptable

Agriculture and Industry

- Protect as much grade 1 and grade 2 land as possible
- Ensure that the impact on the UK's area of agricultural land is acceptable
- Maintain and enhance the viability of the area's …(relevant industry inserted from menu to be provided) industrial capacity

Tourism

- Maintain and enhance the viability of a diverse tourism economy

Infrastructure

- Avoid interruption of the functioning of…(relevant infrastructure inserted from menu to be provided)

Historic Environment

- Protect and where possible, enhance designated and significant historic environment assets

Landscape

- To maintain and where possible, improve the quality of the coastal landscape

Coastal Processes

- To prevent interruption of coastal processes which supply sediment to other coastlines

Timing of Policy

Provide sufficient time if necessary, for:

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

Objectives

E2.7 A series of specific objectives were developed on the basis of the principles, generic objectives, and the characterisation. These were agreed with the Client Steering Group and Elected Members Forum. The specific objectives were used as criteria for appraising the different policy options. The full set of objectives for each Character Area are given in Appendix D.

E3 Policy Appraisal Methodology

Approach

E3.1 The policy appraisal process consisted of a number of stages. Following the agreement of objectives, and therefore appraisal criteria, the approach to carrying out the assessment of policies was agreed by the Client Steering Group and Elected Members Forum. The steps undertaken included:

- Step 1 – Decide and agree policy options for appraisal
- Step 2 – Decide and agree Policy Packages
- Step 3 – Assessment of agreed Policy Packages against objectives
- Step 4 – Development of the preferred policies (Draft)

E3.2 Details of the steps required to identify the preferred policy are given in the subsequent sections.

E4 Step 1 - Decide and agree policy options for appraisal

E4.1 The policies that were deemed sufficiently relevant and viable to justify further appraisal were identified through Client Steering Group and Elected Members Forum workshops. During these workshops, discussions lead to the identification of policy options that could definitely be ruled out for full appraisal, and those that were worthy of full appraisal. This was undertaken on a Character Area by Character Area basis. This process involved systematically addressing the viability of the 4 Shoreline Management Plan policy options for the specific sections of the coast (Table 4.1).

Table 4.1: Shoreline Management Plan policy options available for appraisal

Shoreline management policy	Description of policy
Hold the line (HTL)	Hold the existing defence line. This policy covers 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 building new defences on the landward side of the original defences).
No Active Intervention (NAI)	A decision not to invest in providing or maintaining defences.
* 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 Shoreline Management Plan.	

E4.2 Where flood risk is an issue, management policies which explicitly address flood risk were considered to support the headline SMP policy (see main document, Section 1.17). CFMP-defined policies (P2-P5) were assessed in terms of viability/applicability for the flood risk of specific sections of the coast and the realistic options recommended for appraisal. P2 – P5 are defined as:

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

Note that P1 is defined within CFMPs as 'No Active Intervention' and so there is the opportunity to appraise it as one of the four Shoreline Management Plan policy options.

E4.3 It should be noted that at this stage, the policies selected for appraisal during the workshops were not necessarily considered likely, desirable, feasible or economically viable; rather their evaluation and appraisal was considered to be necessary and in the public interest. A summary of the policy options chosen for full appraisal and those ruled out, along with explanatory text is provided for each Character Area in Table 4.2.

Table 4.2: Summary of policy options for appraisal

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.

Character Area	No Active Intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
CA3 – Wilsthorpe to Atwick	This is the current policy for the majority of this frontage and would be appraised for all epochs.	A potential location for Managed Realignment was identified at Barmston Outfall. Managed realignment would be appraised locally as part of an overarching policy of No Active Intervention along the frontage.	A Hold the Line 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).	The appraisal of a large-scale seaward movement of the 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.

Character Area	No Active Intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
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.
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 flood risk management policy to be appraised.	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)
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 naturally re-heal.	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 road would also be maintained by a process of rebuild and roll back as the barrier realigns	This policy would be appraised 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.
CA11 – Easington Road to Stone Creek	A No Active Intervention policy was considered not to be viable 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 flood risk management policy to be appraised.	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)
CA12 – East Immingham to Grimsby Docks	A No Active Intervention policy was considered not to be viable 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 not to be viable 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 significant drivers in this area that would make this a realistic policy for appraisal.
CA13b – Humberston Fitties	A No Active intervention policy was considered not to be viable 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.

Character Area	No Active Intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
CA14 – South of Humberston Fitties to Saltfleet	A No Active intervention policy was considered not to be viable 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 to be appraised.	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 due to potential technical feasibility and safety issues associated with increasing the height of the current defences. This would be appraised as part of an overarching Hold the Line policy for the area as a whole to increase defence sustainability.	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies to be appraised.	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.
CA16 – Viking Gas Terminal to Sandilands (Mablethorpe)	A No Active intervention policy was not considered to be a viable 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 due to potential technical feasibility and safety issues associated with increasing the height of the current defences. This would be appraised as part of an overarching Hold the Line policy for the area as a whole to increase defence sustainability	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies to be appraised.	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)
CA17 – Sandilands to Chapel Point	A No Active Intervention policy was not considered a viable 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 due to potential technical feasibility and safety issues associated with increasing the height of the current defences. This would be appraised as part of an overarching Hold the Line policy for the area as a whole to increase defence sustainability	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies to be appraised.	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 was not considered a viable 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 due to potential technical feasibility and safety issues associated with increasing the height of the current defences. This would be appraised as part of an overarching Hold the Line policy for the area as a whole to increase defence sustainability	This is the current policy and would be appraised in all epochs. P4 and P3 flood risk management policies to be appraised.	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.
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 to be appraised.	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.

Character Area	No Active Intervention (NAI)	Managed realignment (MR)	Hold the line (HTL)	Advance the line (ATL)
CA19 – Seacroft to Gibraltar Point	A No Active intervention policy was not considered a viable 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 to be appraised.	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.

E5 Step 2 – Decide and agree Policy Packages

Identification of Policy Packages

E5.1 Character Areas do not exist in isolation from their neighbours – they are linked by coastal processes and in some cases by a common flood risk cell. In order for policy appraisal to take account of these linkages and common features, Character Areas were assembled into Policy Development Zones. These constitute groups of adjacent Character Areas which could be appraised together. Policies were appraised across all the Character Areas in a Policy Development Zone, the appraisals for individual Character Areas being undertaken and reported but an aggregate appraisal is also reported. Figure 5.1 shows the four Policy Development Zones and the Character Areas covered by each of them.

E5.2 It was considered impractical to appraise every possible policy combination from those selected. Some combinations would also make no logical sense whatsoever – for example defending presently undefended rural areas while leaving currently defended urban areas to erode or flood. Therefore the policy options for the Character Areas in a Policy Development Zone were assembled into a number of Policy Packages; these comprise sensible assemblies of polices which could be implemented in a coherent manner over the Shoreline Management Plan time period. The Policy Packages reflect a so-called 'intent of management' for the Policy Development Zone.

E5.3 The Policy Packages appraised are detailed in subsequent sections by Policy Development Zone.

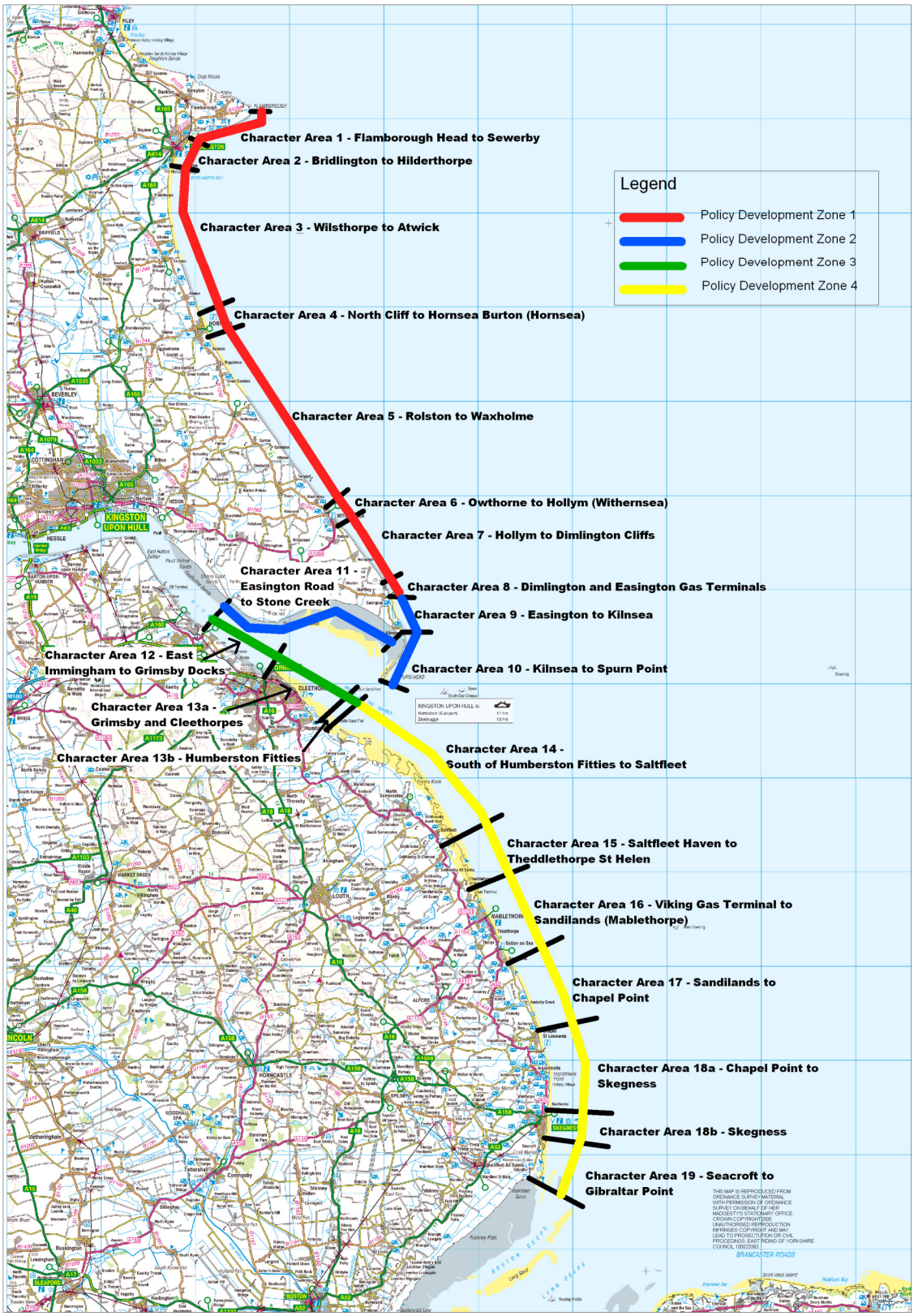


Figure 5.1: Map showing Policy Development Zones (PDZs)

Policy Development Zone 1 – Flamborough Head to Dimlington and Easington Gas terminals

Policy Package 1.1

E5.4 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.

E5.5 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.

E5.6 A summary of policies appraised for each character Area under policy package 1.1 is provided in Table 5.1.

Table 5.1: 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 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.

Policy Package 1.2

E5.7 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.

E5.8 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.

E5.9 A focused policy appraisal for Mappleton was also undertaken separately investigating different policy options in epoch 3.

E5.10 A summary of policies appraised for each character Area under policy package 1.2 is provided in Table 5.2.

Table 5.2: 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.

Policy Development Zone 2 - Easington to Stone Creek

E5.11 This Policy Development Zone was considered in two sub-sections for the purposes of policy appraisal. Policy Packages were developed for Character Areas 9 and 11 (Policy Development Zone 2a) as it is necessary to have a coherent intent of management for these two areas. This is because these Character Areas form the estuarine and coastal frontages of a continuous flood cell, thus making any difference in the intent to managing these areas nonsensical. In addition, due to the unique nature of the Spurn barrier, polices for Character Area 10 (Policy Development Zone 2b) were appraised separately.

Policy Development Zone 2a Easington to Kilnsea and Easington Road to Stone Creek

Policy Package 2.1a

E5.12 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).

E5.13 A summary of policies appraised for each character Area under policy package 2.1a is provided in Table 5.3.

Table 5.3 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.

Policy Package 2.2a

E5.14 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).

E5.15 A summary of policies appraised for each character Area under policy package 2.2a is provided in Table 5.4.

Table 5.4 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.

Policy Package 2.3a

E5.16 The defences would be held in their current position with limited Managed Realignment.

E5.17 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.

E5.18 A summary of policies appraised for each character Area under policy package 2.3a is provided in Table 5.5.

Table 5.5. 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.

Policy Development Zone 2b Kilnsea to Spurn Point

Policy Package 2.1b

E5.19 Hold the Line for the entire frontage for all epochs.

E5.20 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.

E5.21 A summary of policy appraised for each character Area under policy package 2.1b is provided in Table 5.6.

Table 5.6. 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.

Policy Package 2.2b

E5.22 No Active Intervention for the entire frontage for all epochs.

E5.23 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.

E5.24 A summary of policy appraised for each character Area under policy package 2.2b is provided in Table 5.7.

Table 5.7: 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.

Policy Package 2.3b

E5.25 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.

E5.26 A summary of policy appraised for each character Area under policy package 2.3b is provided in Table 5.8.

Table 5.8. Summary of policies appraised by Character Area for Policy Package 2.3b

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.

Policy Development Zone 3 – East Immingham to Humberston Fitties

E5.27 Due to the lack of drivers for alternative policies in this area a single policy package was developed for this area.

Policy Package 3.1

E5.28 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.

E5.29 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 would be appraised in epoch 2 with P4, with the defences held with P4 for epoch 3.

E5.30 A summary of policy appraised for each character Area under policy package 2.2b is provided in Table 5.9.

Table 5.9. 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.

Policy Development Zone 4 - South of Humberston Fitties to Gibraltar Point

Policy Package 4.1

E5.31 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.

E5.32 In principle, it was assumed that for areas defended by seawalls and the Lincshore scheme, the approach would be to raise hard defences and to increase the volumes of beach nourishment.

E5.33 Where areas are defended by earth embankments, it was assumed that the embankments would be raised to counter sea level rise.

E5.34 It was assumed that areas currently protected by natural defences (e.g. dunes) would continue to be protected against flooding by the natural features.

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

Policy Package 4.2

E5.35 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.

E5.36 In principle, it was assumed that for areas defended by seawalls and the Lincshore scheme, the approach will be to raise hard defences and to increase the volumes of beach nourishment.

E5.37 Where areas are defended by earth embankments, it was assumed that the embankments will be raised to counter sea level rise.

E5.38 It was assumed that areas currently protected by natural defences (e.g. dunes) would continue to be protected against flooding by the natural features.

E5.39 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.

E5.40 In practice, it is envisaged that a new defence line would not be fully continuous, and would take account of local constraints. Any landwards construction of defences would be of as minimal scale as possible but allowing for a sustainable defence line. In some locations where urban areas are immediately behind the current defence line, a policy of constructing a new defence line landwards of the current position would be entirely inappropriate; in these places it is assumed that the current defence line would be held and upgraded rather than being supplemented with a secondary defence line.

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

Policy Package 4.3

E5.41 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.

E5.42 In principle, it was assumed that for areas defended by seawalls and the Lincshore nourishment scheme, the approach would be to maintain hard defences with the same crest level as the present day and to continue nourishing with the same volumes of sediment. Consequently the standard of protection against flooding would fall over time as sea levels rise.

E5.43 Where areas are defended by earth embankments, it was assumed that the embankments would be maintained at the same crest levels; so the standard of protection would fall as sea levels rise.

E5.44 For areas protected by natural defences without structures, it was assumed that current management input would continue, and the standard of protection against flooding provided by the dunes would fall over time as sea levels rise.

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	Hold the line for all epochs along the entire frontage,

Character Area	Policy Appraised
St Helen	P3 evaluated
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

Policy Package Alignments for appraisal

E5.45 In order to undertake an assessment of the impacts the Policy Packages produce over the epochs, approximate defence alignments and shoreline positions and responses had to be estimated.

E5.46 For Character Areas where the policy is Hold the Line for all epochs the current shoreline position was assumed for all epochs.

E5.47 Where there are no defences and the policy tested was No Active Intervention for all epochs, the future shoreline evolution was predicted on the basis of erosion calculations made in the development of Appendix C (Coastal Process Understanding and Baseline Scenarios).

E5.48 Where limited Managed Realignment featured as part of a Policy Package appraised, a number of concepts and assumptions were followed in order to undertake an appraisal of potential impacts of this policy. This was deemed appropriate because if a policy of limited Managed Realignment was adopted in reality, specific defence alignments would need to be decided at the time by more detailed studies or strategies. The high level nature of Shoreline Management Plans means that defining exact defence alignments, in some instances a number of decades into the future is not realistic or appropriate, given the very local specific issues that would need to be considered in determining defence alignments. The Shoreline Management Plan only requires the principles and concepts of such a policy option in order to undertake the appraisal to assess the potential impacts and viability. Therefore certain concepts and assumptions were followed when appraising Managed Realignment options for the different areas.

E5.49 For Character Areas in the outer Humber estuary where Managed Realignment featured as part of a policy option for appraisal (CA 9, 11 and 14), the concepts and assumptions were based on the concepts assumed in the Humber Flood Risk Management Strategy when considering this type of policy. The key concepts and assumptions followed for appraisal of Managed Realignment options in this area were:

- Any Managed Realignment would not adversely affect residential property, key infrastructure and designated or significant historic environment assets.
- Managed Realignment would significantly adversely impact on agricultural land.

- Sustainable protection to all assets behind a realigned defence would be achieved.
- Environmental benefits would result as habitats would be created by reducing effects of coastal squeeze. Managed Realignment could also potentially increase the chances of beaches widening / reforming which would benefit the important tourist industry and the landscape.
- Sufficient time and adaptation measures (if required) would be in place for the change in policy.

E5.50 For all other Character Areas where Managed Realignment was appraised in some form in epoch 3 (CA 15, 16, 17, 18a, 18b, 19) the following concepts and assumptions were followed for appraisal:

- Any Managed Realignment could potentially adversely affect residential property, key infrastructure and designated or significant historic environment assets.
- Managed Realignment would significantly adversely impact on agricultural land.
- Sustainable protection to all assets behind a realigned defence would be achieved.
- Environmental benefits could result as habitats would be created by reducing effects of coastal squeeze, but these would not be experienced in the SMP timeframe as any retreat to a second defence line would not occur until the end of epoch 3 at the earliest.

E6 Step 3 – Assessment of agreed Policy Packages against objectives

E6.1 Following the development of Policy Packages, an appraisal of their impacts was undertaken using assessment criteria derived from the Character Area objectives. To maintain consistency between the Plans, it was agreed by the Client Steering Group and Elected Members Forum that the appraisal methodology would be largely similar to that adopted by the Wash Shoreline Management Plan.

E6.2 The appraisal was carried out according to an agreed approach which used a 'traffic light' scoring system supported by a narrative. The individual objectives agreed in Stage 2 were used as criteria against which the policy impacts and predicted shoreline evolution could be assessed.

E6.3 Using this methodology the results of the appraisal are indicated by a colour (green, amber, or red) used to represent the extent to which the objective is fulfilled (or not). A score from 1 - 9 was used to guide the appraisal process to select the appropriate colour. An overview of the policy development process is Figure **6.1**.

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

Figure 6.1: Scoring system used in the appraisal of Policy Packages.

E6.4 The assessment of policy impacts was made using expert judgements informed by the coastal processes understanding and baseline scenarios (Appendix C) developed in Stage 2. An initial trial appraisal was carried out to refine the process. As a result a number of guidelines were developed and agreed by the Client Steering Group and Elected Members Forum. By using these guidelines, the degree of subjectivity in the assessments could be minimised and this ensured a consistent and systematic approach was used for the assessments.

E6.5 Guidelines fall into two categories; those objectives for which it is possible to quantify a predicted impact (e.g. property loss), and; those for which impacts are not able to be quantified (e.g. landscape impacts). A summary of the appraisal guidelines used is provided in Table 6.1. For some objectives it was also necessary to define a consistent baseline to which predicted future impacts can be compared.

Table 6.1: Summary of guideline used for policy appraisal.

Shoreline Management Plan 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 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.	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 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

Shoreline Management Plan 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'
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.

E6.6 For each Policy Development Zone, a first round of assessments was undertaken for each Policy Package for all three Epochs (present day to 2025, 2025 to 2055, and 2055 to 2105). A narrative was also included explaining of the impact of the Policy Package on each specific objective. The format of the appraisal table used is given in Table 6.2.

Table 6.2: Example of policy appraisal table

	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
Objective	Score	Explanation	Score	Explanation	Score	Explanation
1 xxxx		Text		Text		Text
2 xxxx		Text		Text		Text

E6.7 The initial results of the appraisal were then reviewed by the Client Steering Group at dedicated workshops, and a subsequent revision and fine tuning of the assessments made on the basis of the comments received from the different Client Steering Group organisations.

E6.8 Following appraisal, results were represented graphically by category to visualise the balance of outcomes that each policy package achieves (see example of graphical representation). This representation of the results allowed an efficient evaluation of the relative impacts and effects of the policies, demonstrating those policies which provided greater overall benefits compared to others. In some cases, the balance of outcomes between different policy options was fairly equivocal; meaning further consideration of the two options was required. In some instances there was relative parity between the balance of outcomes which demonstrated that a viable alternative policy could be considered. In some cases this has lead to a future conditional policy, where the viable alternative could be adopted instead of the currently chosen policy if monitoring and further studies demonstrate that it becomes a more preferable option due to changing circumstances. The full policy appraisal tables and the graphical representations of the results are provided in Section E8.

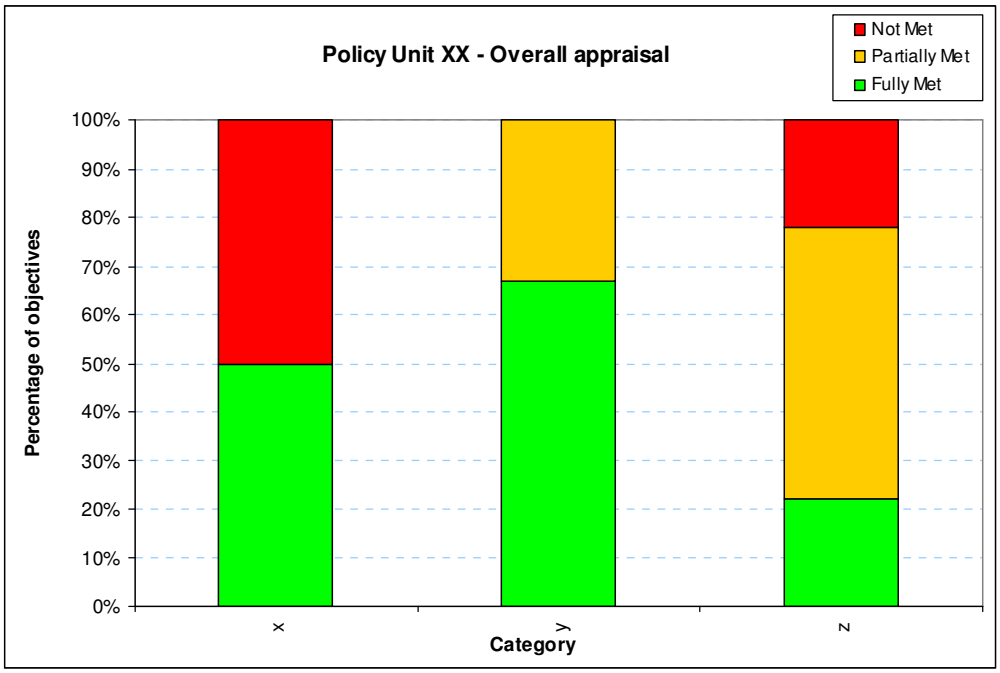


Figure 6.2: Example of graphical representation of policy appraisal results

E7 From policy appraisal to preferred policies

E7.1 Following policy appraisal of policy packages, the preferred management intent for the frontage was identified as follows:

PDZ1 – Flamborough Head to Easington

E7.2 Policy package 1.2

- 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 would be applied to 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 would not be maintained indefinitely.

PDZ2 –Easington to Stone Creek

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

- 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 would be considered.

Policy Package 2.2b (Kilnsea to Spurn Point)

- 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 Spurn barrier, only intervening where necessary to assist the healing of breaches, if they occur to maintain access.

PDZ3 – Immingham to Humberston Fitties

Policy Package 3.1

- The defences would be held in their current position and their flood defence function would be maintained. Defences would prevent erosion and would be maintained and upgraded to continue the present standard of protection against flooding despite sea level rise (P4).
- 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 would be appraised in epoch 2 with P4, with the defences held with P4 for epoch 3.

PDZ4 – South of Humberston Fitties to Gibraltar Point

Policy Package 4.1

- The existing alignments of defences would be held, with increasing 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.

Fine tuning of preferred policies

E7.3 The initial preferred Policy Packages identified above show the preferred management intent for each area of the frontage on the basis of the appraisal against specific objectives. 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 polices.

E7.4 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, 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. These steps are summarised below:

Economic viability check

E7.5 The preferable policies from the analysis were subject to a qualitative check of economic viability (Appendix H) to reflect the overall aim of the Shoreline Management Plan to develop a Plan that facilitates balanced sustainability. This economic check was made on a broad scale to address whether or not policies were:

- Clearly economically viable;
- Clearly not economically viable; or
- Of marginal viability.

E7.6 It should be noted that despite economic assessments, there could be cases where a marginally viable or even unviable policies is selected as the preferred policy, as the economic assessment is not the primary driver in selecting the preferred policy.

Environmental compliance

E7.7 The preferable policies were assessed in terms of the Habitats Directive.

Wider sediment transport impacts

E7.8 An additional process in the confirmation of the draft policies was the evaluation of their sediment transport effects and impacts down drift (especially on internationally designated habitats and adjacent Shoreline Management Plan areas). The scoring approach supplemented with a narrative (Step 3) was used as a mechanism to undertake a high level check of the preferred policy scenario (Annex 1).

Identification of Policy Units

E7.9 Through the policy development processes, it became apparent that there were some stretches of the coast where the same policy would apply, sometimes comprising several adjacent Character Areas. The definition of these areas was deemed useful to deliver the Shoreline Management Plan so the frontage can be classified by areas where the same management approach is to be adopted; these sections were defined as Policy Units. Figure 7.1 shows the Policy Unit boundaries based on the draft preferred policies for the frontage.

Confirmation of the draft preferred policies

E7.10 Following the procedures discussed above, the draft Plan was confirmed. In some cases flexibility was built into the preferred policies to account for the recognised uncertainties in some areas, especially in epoch 3. Conditional policies were agreed for some Units as a mechanism to deliver this flexibility. Following these iterations, the details of the preferred policies were also agreed. The final draft policy descriptions were agreed via Client Steering Group and Elected Members Forum workshops and policy statements for each Policy Unit are included in the main SMP document.

Consultation

E7.11 Having undertaken all of the policy development steps described, draft preferred policies were put forward for public consultation.

Figure 7.1: Map showing Policy Unit boundaries.

E8 Policy Appraisal tables

E8.1 This section contains the detailed appraisal tables for all of the Policy Packages.

Appraisal of draft preferred policy scenario

This section contains the following:

- Graphical representation of appraisal of draft Plan
- Graphical comparison of all of the policy packages appraised
- Appraisal tables for the preferred Policy Packages:
    - Policy Package 1.2 (Flamborough Head to Easington)
    - Policy Package 2.3b (Kilnsea to Spurn Point)
    - Policy Package 2.3a (Easington to Kilnsea, Easington Road to Stone Creek)
    - Policy Package 3.1 (East Immingham to Humberston Fitties)
    - Policy Package 4.1 (South of Humberston Fitties to Gibraltar Point)

Appraisal of other policy packages

E8.2 This section contains the appraisal tables for the policy packages assessed:

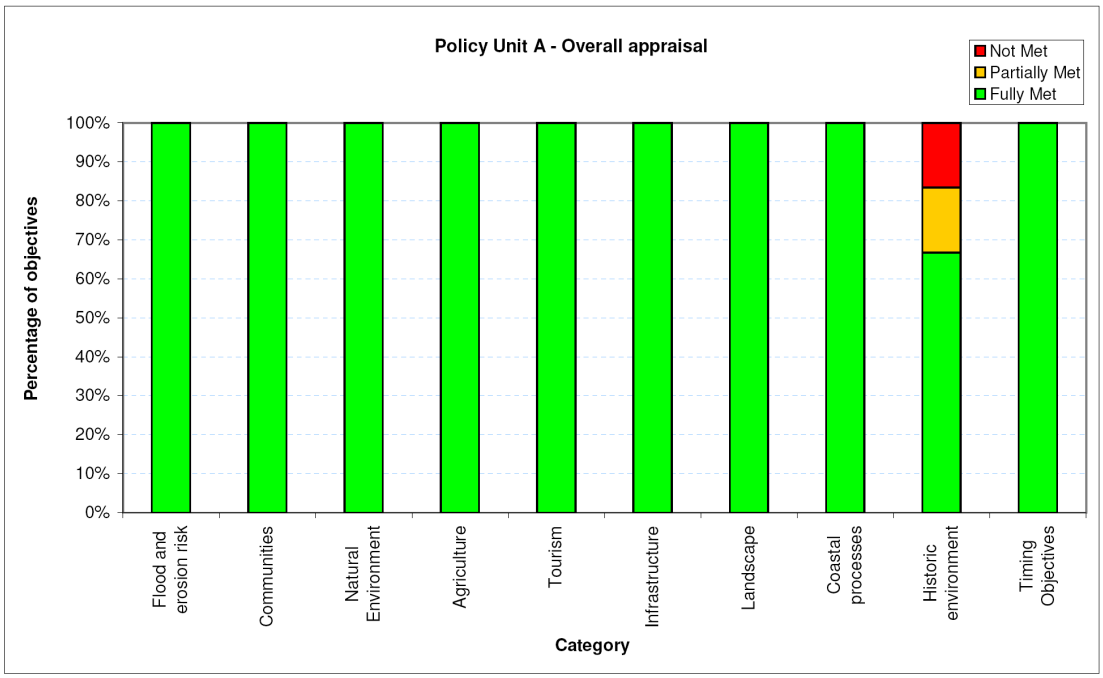
- Policy Package 1.1 (Flamborough Head to Easington)
- Policy Package 2.1a (Easington to Kilnsea, Easington Road to Stone Creek)
- Policy Package 2.2a (Easington to Kilnsea, Easington Road to Stone Creek)
- Policy Package 2.1b (Kilnsea to Spurn Point)
- Policy Package 2.2b (Kilnsea to Spurn Point)
- Policy Package 4.2 (South of Humberston Fitties to Gibraltar Point)
- Policy Package 4.3 (South of Humberston Fitties to Gibraltar Point)

High level sediment transport check of draft preferred policy scenario

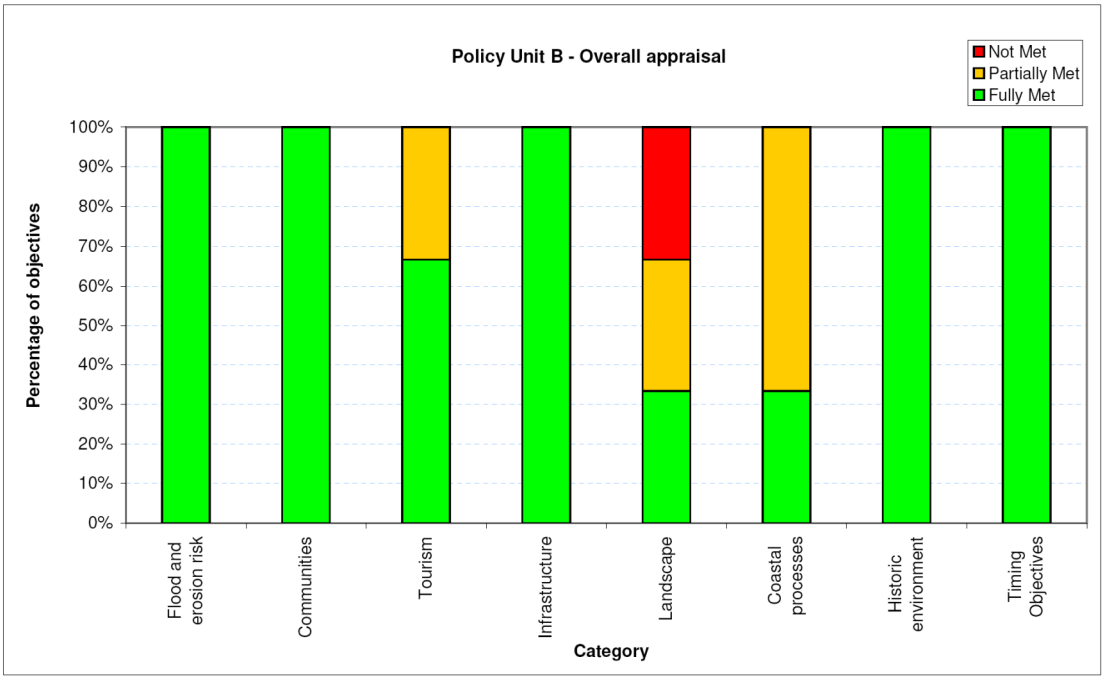
E8.3 This section contains the high level check of the impacts of the draft Plan on sediment transport for the SMP area.

Graphical Representation of draft preferred policy scenario

Policy Unit A – Flamborough Head to Sewerby

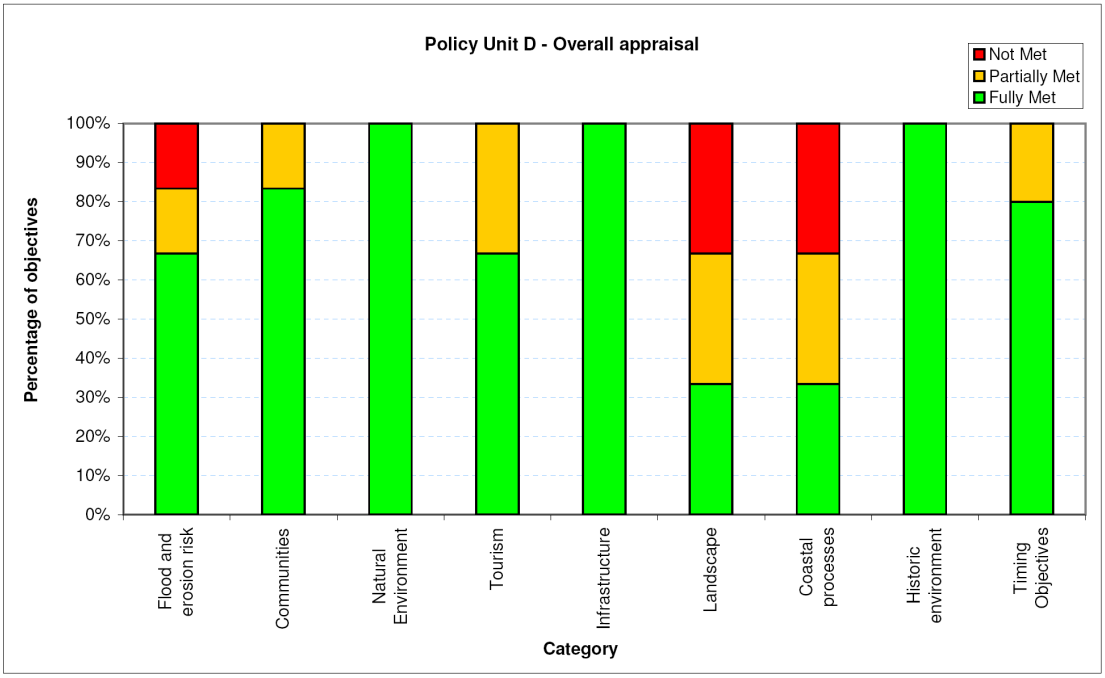


Policy Unit B – Bridlington to Hilderthorpe

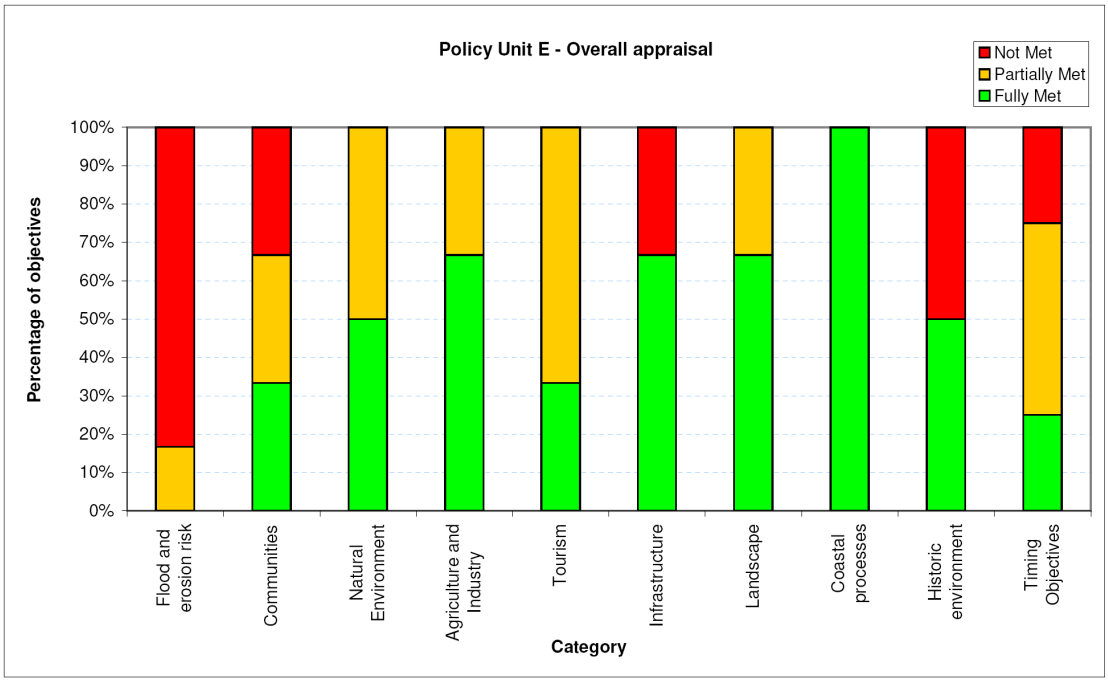


Policy Unit C – Wilsthorpe to Atwick

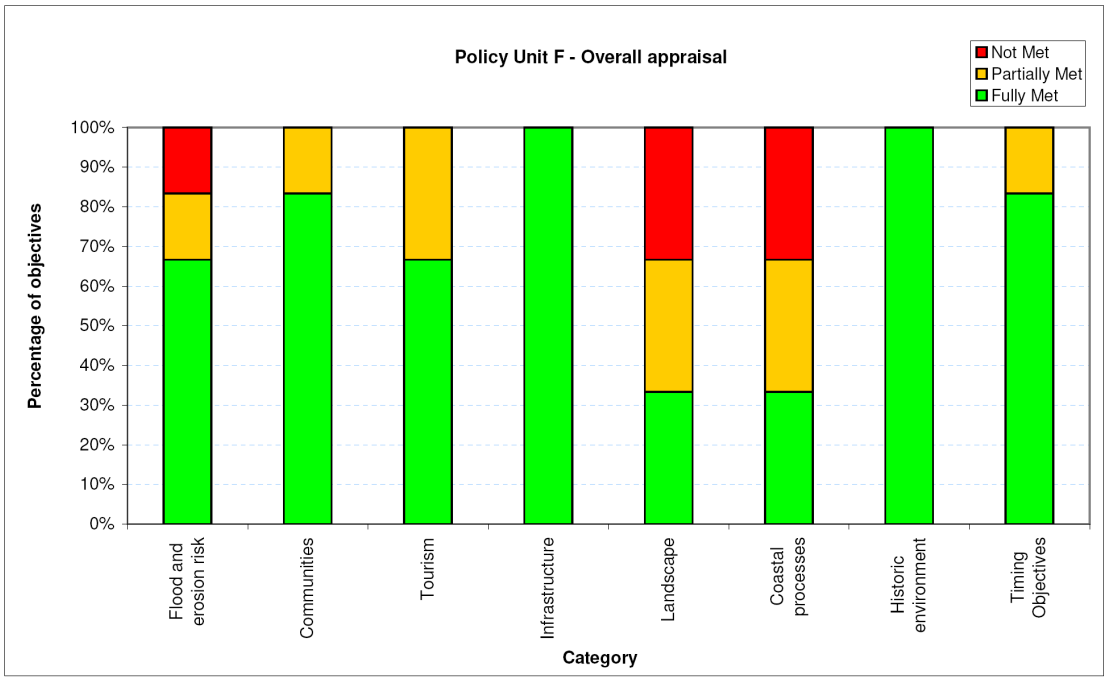
Policy Unit D – North Cliff to Hornsea Burton (Hornsea)



Policy Unit E – Rolston to Waxholme

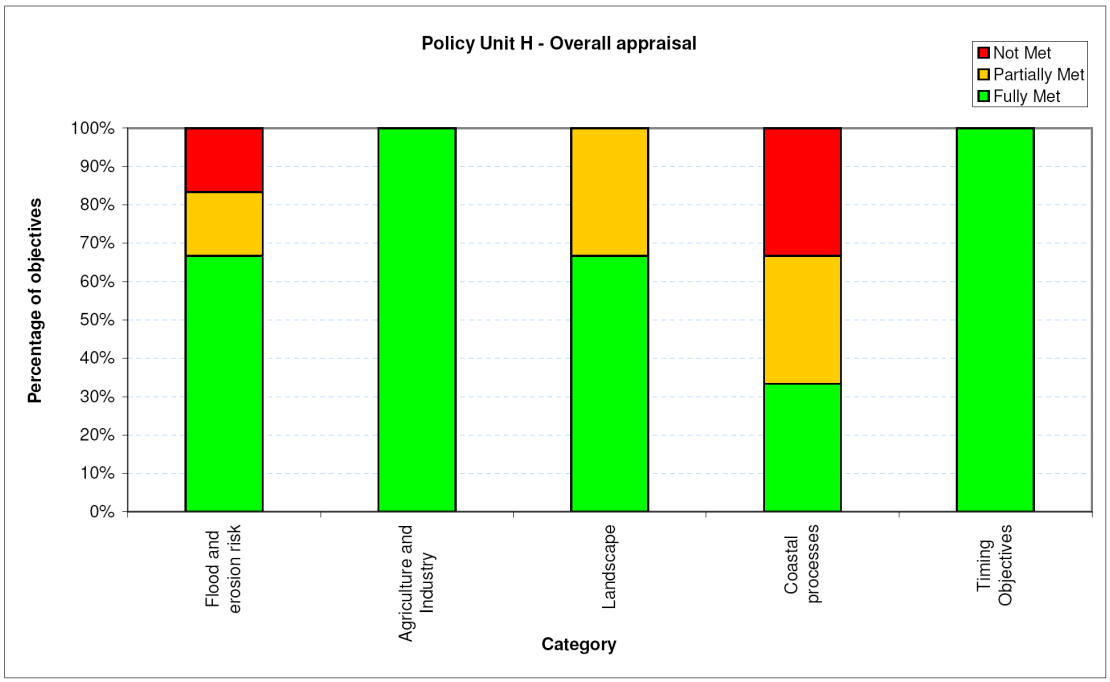


Policy Unit F – Owthorne to Hollym (Withernsea)

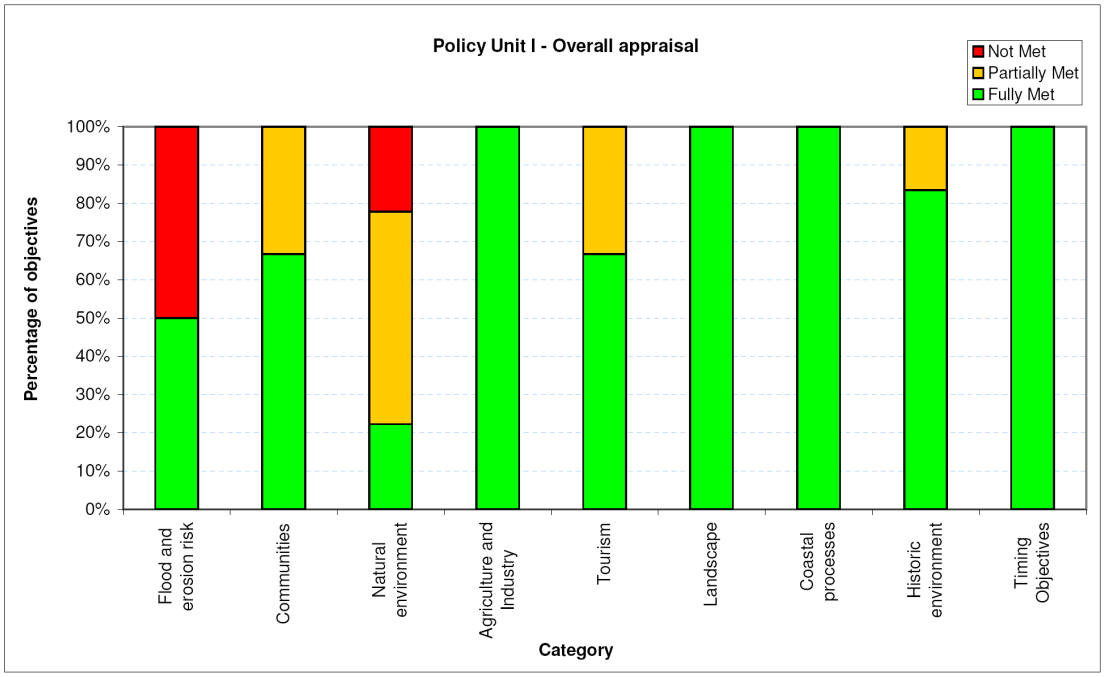


Policy Unit G – Hollym to Dimlington Cliffs

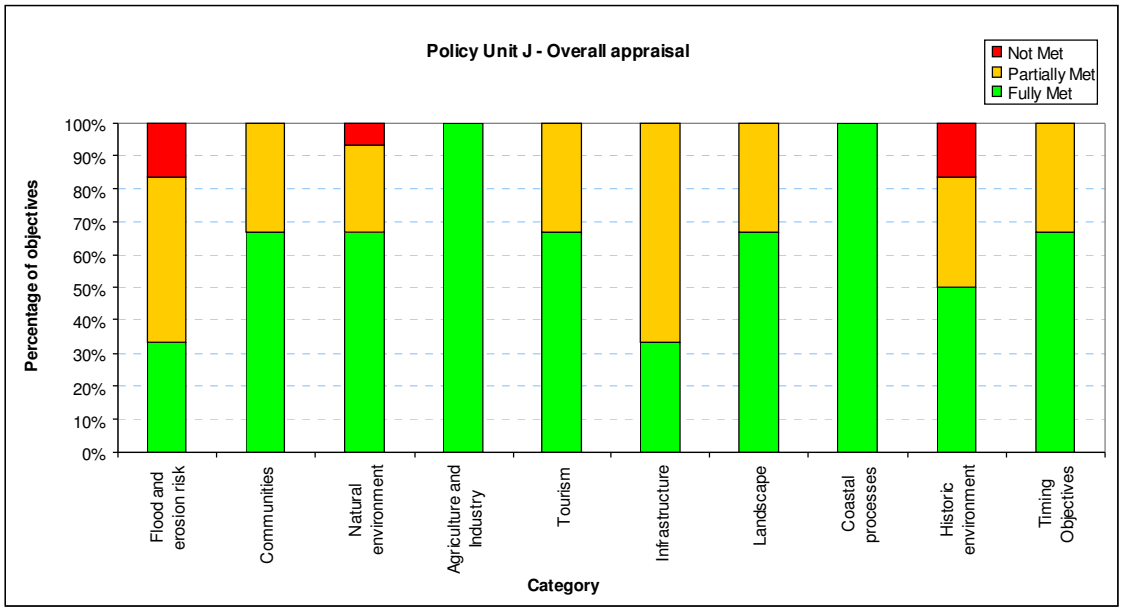
Policy Unit H – Dimlington to Easington Gas Terminals



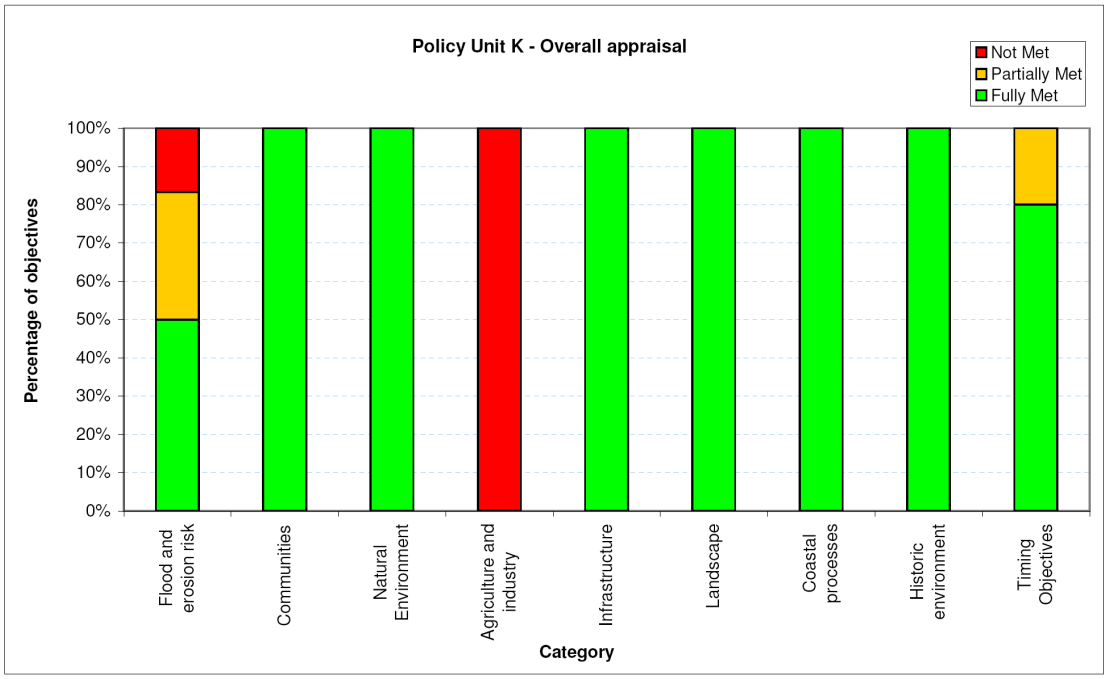
Policy unit I – Easington to Kilnsea



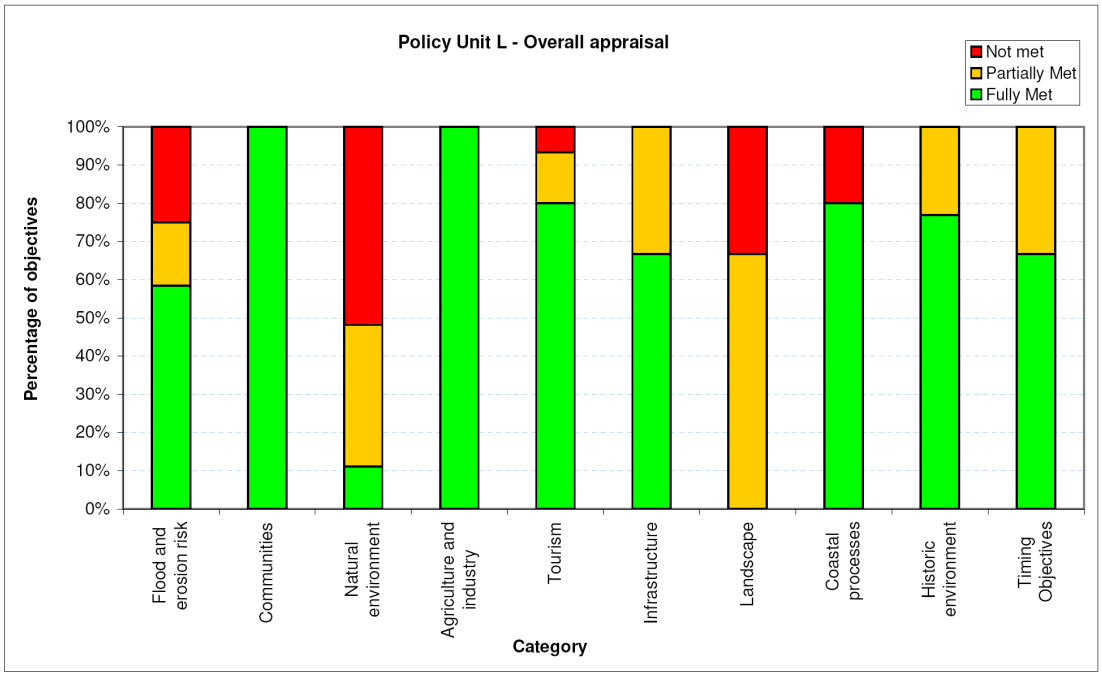
Policy Unit J – Kilnsea to Spurn Point



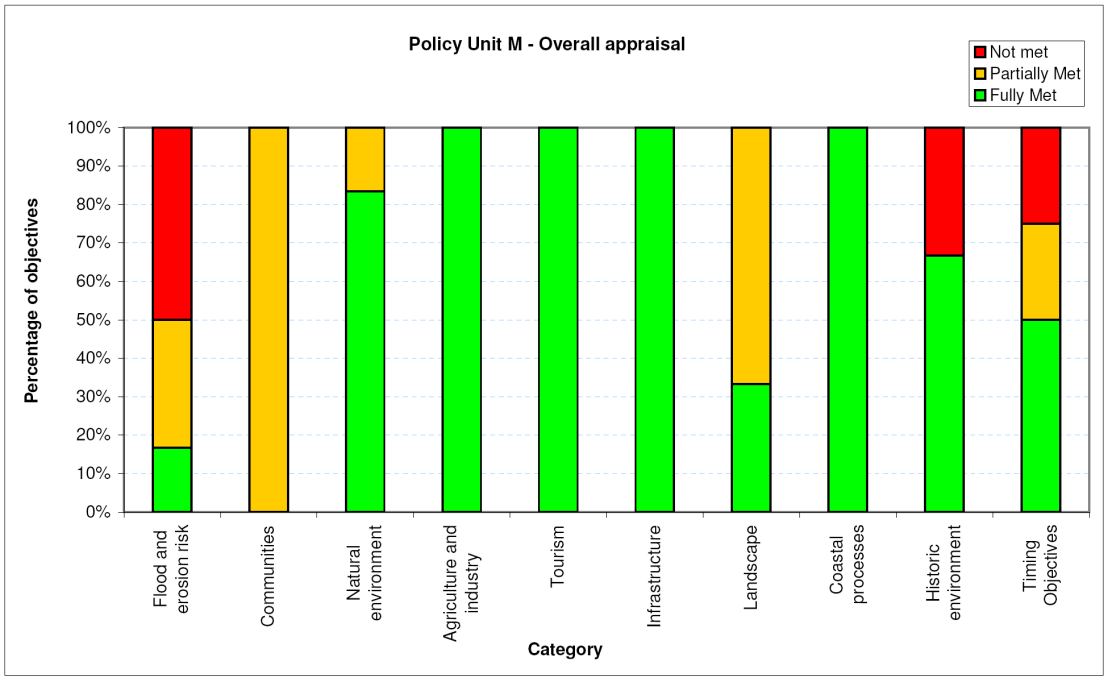
Policy unit K – Easington Road to Stone Creek



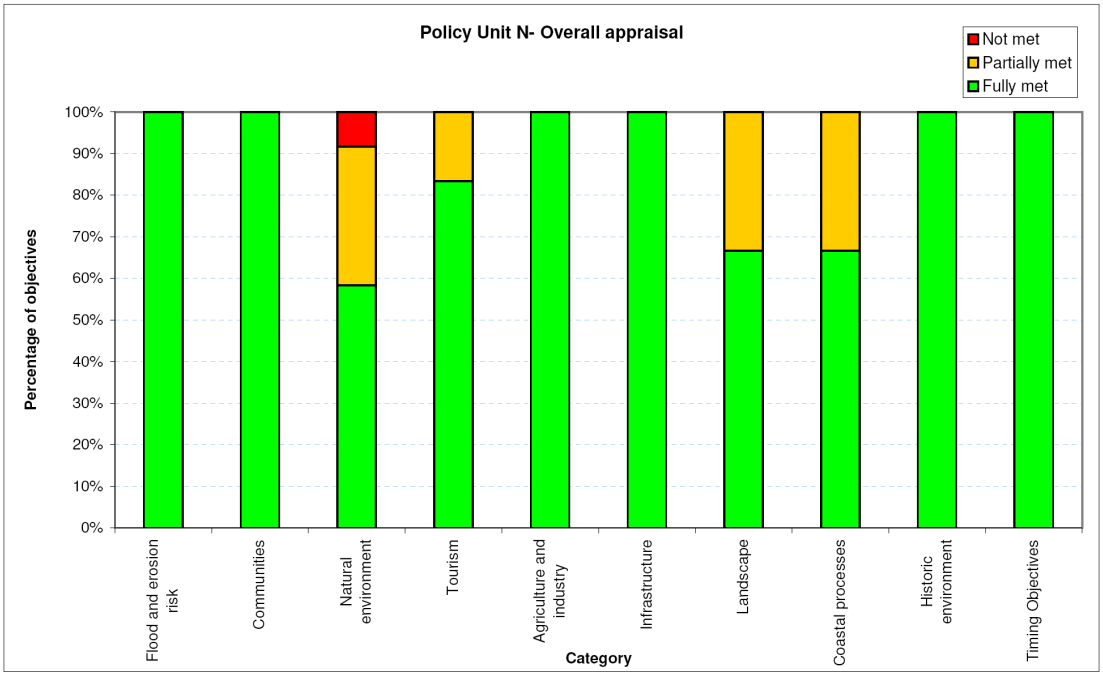
Policy Unit L – East Immingham to Cleethorpes



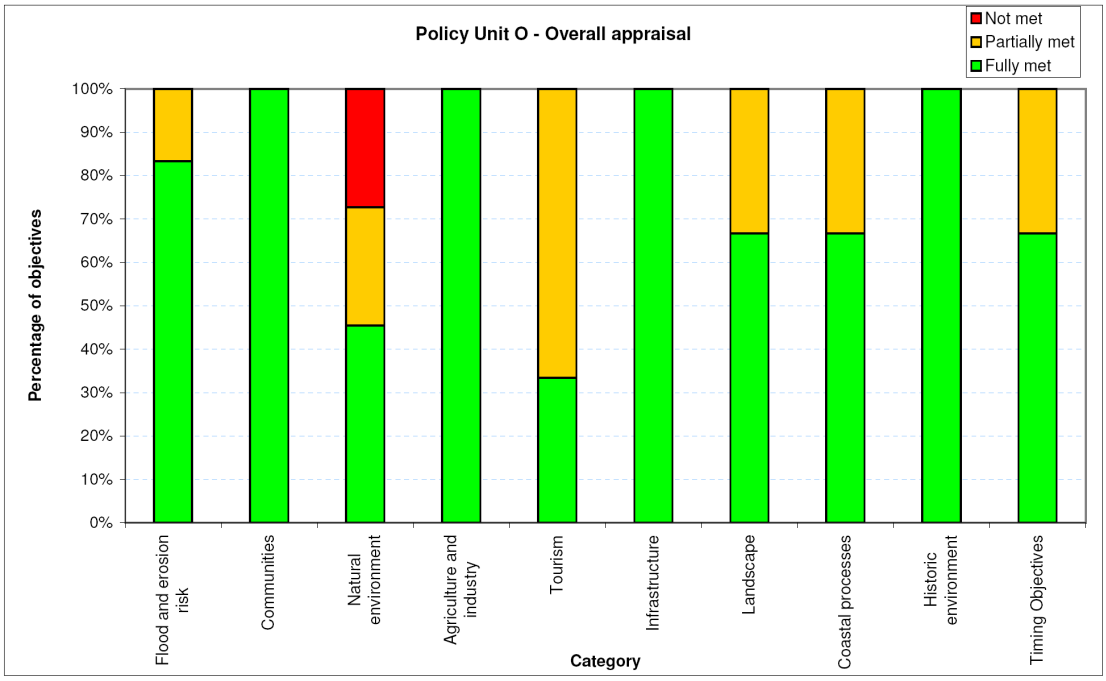
Policy Unit M – Humberston Fitties



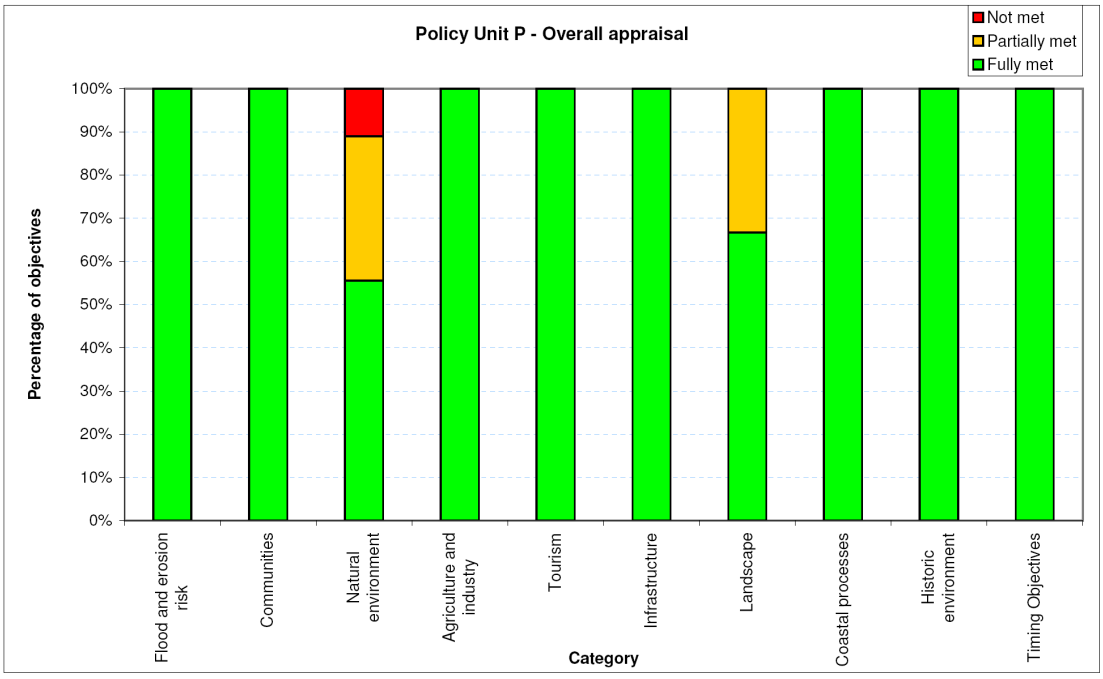
Policy Unit N – South of Humberston Fitties to Theddlethorpe St Helen



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

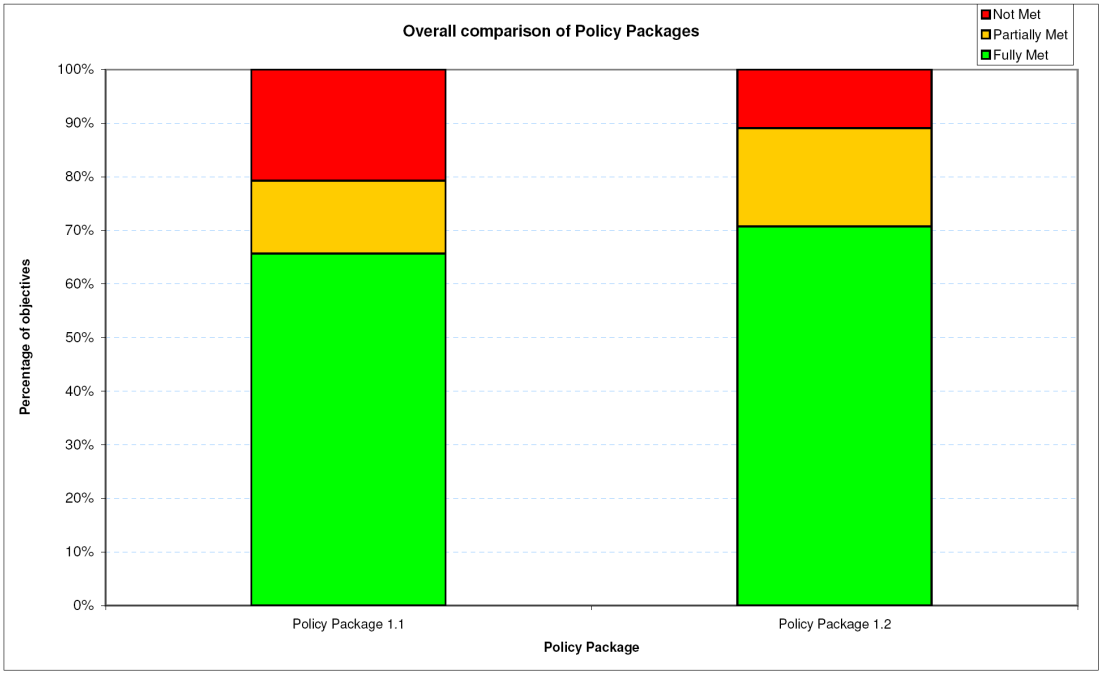


Policy Unit P – Seacroft to Gibraltar Point



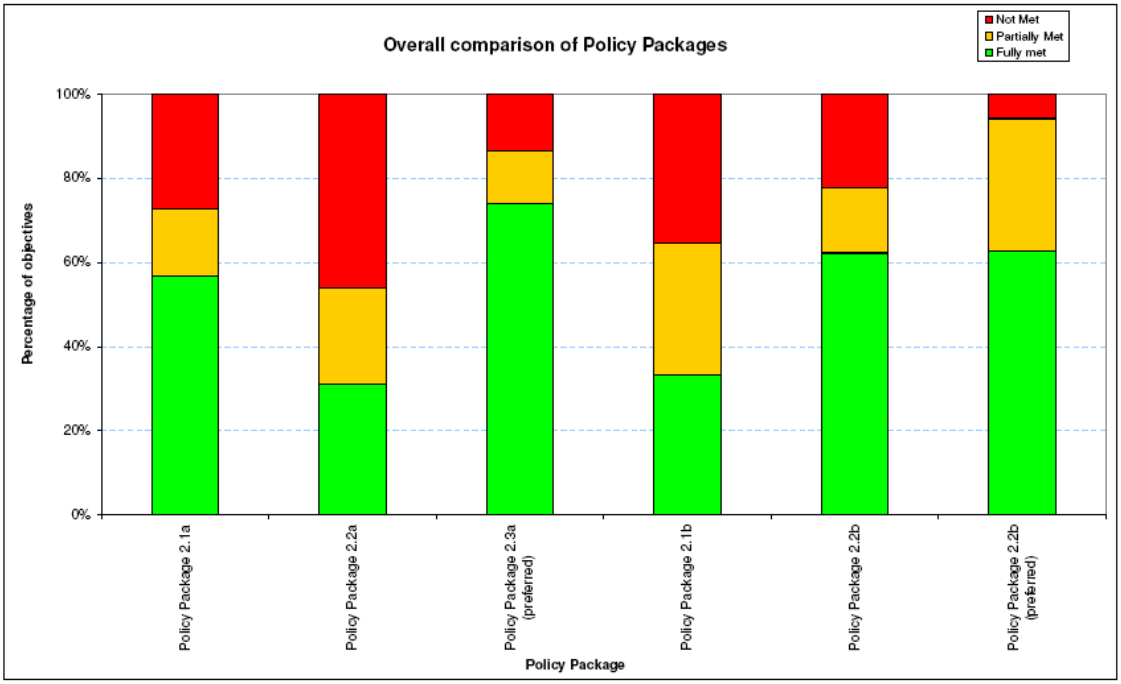
Graphical comparison of Policy Packages appraised

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.

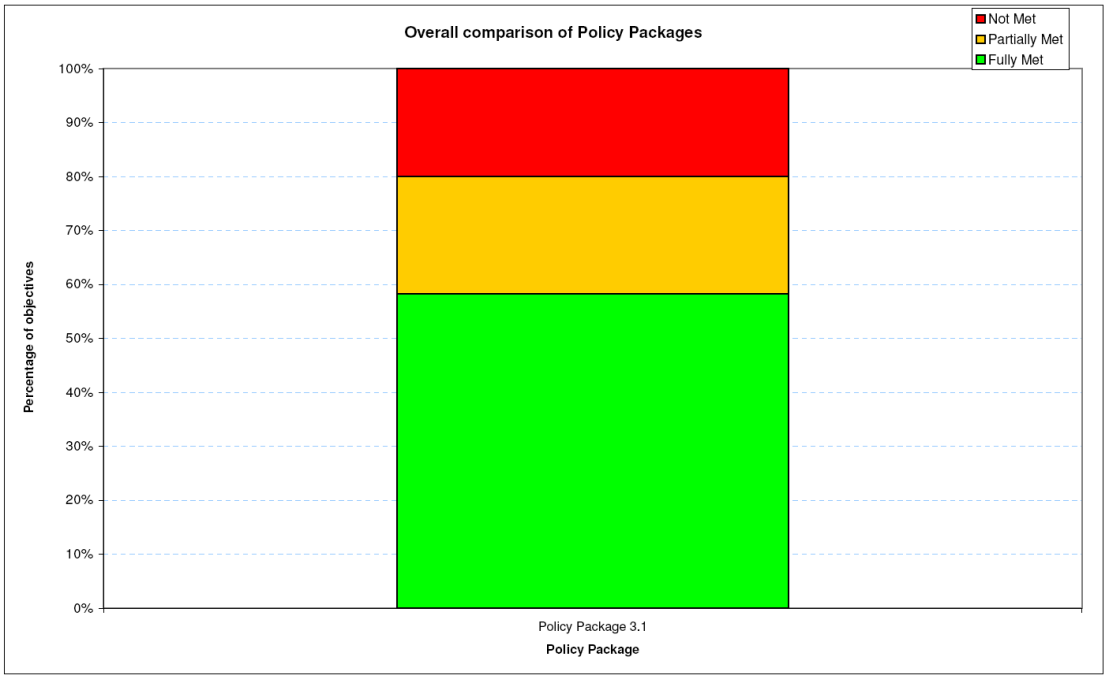
PDZ2 –Easington to Stone Creek



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.

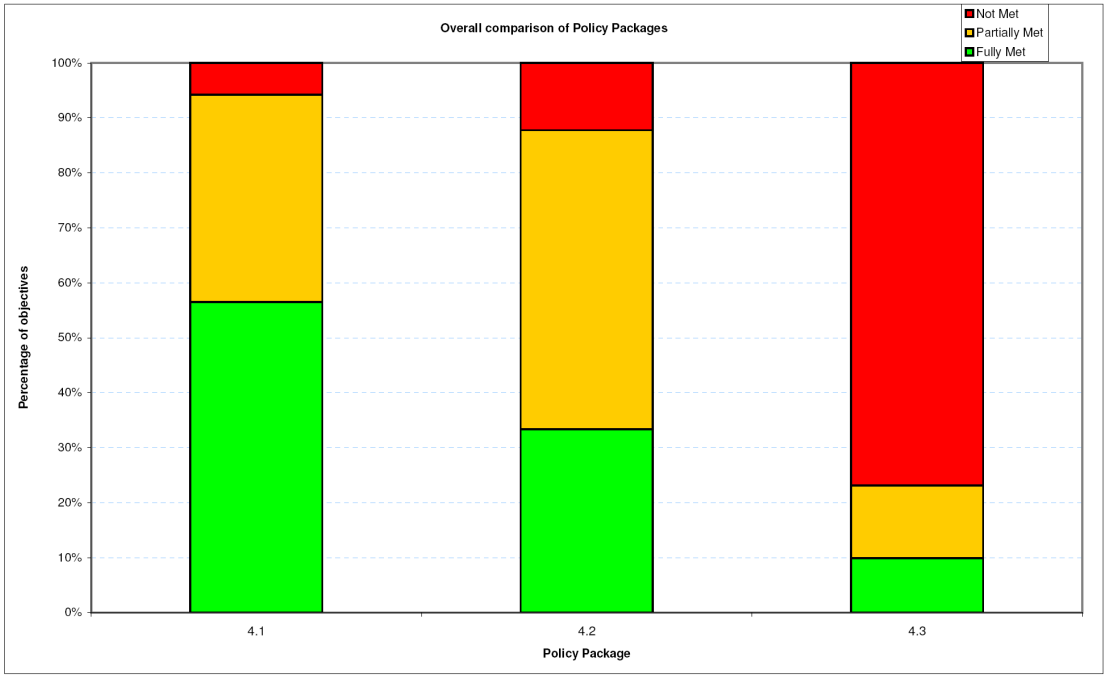
Policy Package 2.1b	Policy Package 2.2b	Policy Package 2.3b
Hold the Line for the entire frontage for all epochs. It is assumed that the barrier would be maintained in its current position. This would require the use of defences and coastal management to prevent erosion and barrier migration.	No Active 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.

Appraisal of draft preferred policy scenario

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.		It is likely that approximately 108 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, approximately 13 hectares of grade 2 agricultural land would be at risk of being lost due to erosion under this policy.

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
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. Approximately 250 hectares of agricultural land potentially at risk of erosion by 2105.
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;	**Score (all Epochs)**	**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.		It is likely that approximately 60 properties would be at risk of erosion by 2105. Also all of the 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. Approximately 440 hectares of agricultural land potentially at risk of erosion 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;	**Score (all Epochs)**	**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. Approximately 16 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, approximately 40 hectares of 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. Approximately 140 hectares of agricultural land potentially at risk of erosion 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;	**Score (all Epochs)**	**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 2.3b (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 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 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.				

Appraisal of other Policy Packages

Policy Package 1.1 (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	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 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.

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 that the impact on the UK's internationally designated habitats is acceptable.		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 theta access and functionality of the RNLI station at South Landing would be maintained. Other key community services and utilities infrastructure would be unaffected 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						
Ensure coastal defence works do not threaten designated and significant historic environment assets		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 18 records noted by RCZAs due to slow erosion of the cliffs.		This policy would result in the loss of or damage to approximately 20 records noted by RCZAs due to slow erosion of the cliffs.
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.

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
Historic environment						
Minimise damage to designated and significant historic environment assets (such as Wilsthorpe DMV) from cliff erosion, where possible.		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		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.				
Ensure coastal defence works do not threaten designated and significant historic environment assets		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: Hold the Line 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		A Hold the Line Policy would ensure that the flood and erosion risk to people and property is minimised despite rising sea levels.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The defences currently at Barmston and Ulrome would be used as part of the defences that would be required for the entire frontage under this policy.		As epoch 1, but as sea level rise and erosion accelerates, there will be increasing need for significant defence improvements and upgrades .		Existing defences would have been entirely superseded with new defences required to Hold the Line at Barmston and Ulrome.
Communities						
Protect all settlements		A Hold the Line Policy would ensure all settlements are protected.		As epoch 1.		As epochs 1 and 2.
Natural Environment						
Maintain natural processes relating to the exposure of glacial and post-glacial deposits at Skipsea.		A Hold the Line policy would alter natural processes and prevent erosion which maintains the exposure of glacial deposits.		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.		The viability of the gas storage and industrial processing facility would be maintained.		As epoch 1.		As epochs 1 and 2.
Protect as much grade 1 and 2 agricultural land as possible.		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable.		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Although caravan parks would be protected, important tourist assets such as the beaches would narrow and reduce in extent and foreshore access would be lost.		As epoch 1, but loss of tourist assets such as beaches and foreshore access due to sea level rise and coastal squeeze. The natural aesthetics which attract tourists would be affected as increasingly significant defences would be required,		As epochs 1 and 2, but increasing reduction in areas tourist appeal due to loss of beaches and habitats and a reduction in the natural aesthetics.
Infrastructure						
Avoid interruption to the A165.		The A165 would remain uninterrupted.		As epoch 1.		As epochs 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.		The gas storage and industrial processing facility and other key community services and utilities infrastructure would be uninterrupted by a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.

Character Area 3: Wilsthorpe to Atwick objectives for policy appraisal

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

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 Hold the Line policy would require significant new defences structures which would have a negative impacts on the qulaity of the coastal landscape. Beaches would also narrow due to coastal squeeze due to sea level rise.		As epoch 1, but increasingly significant defences structures would be required, further affecting the quality of the coastal landscape. Beaches would also be lost due to coastal squeeze.		As epochs 1 and 2, but with increasingly significant structures required to Hold the Line, thus further adversely affecting the quality of the coastal landscape.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes would be fundamentally altered by a Hold the Line policy as no cliff erosion would occur and sediment supplied to other frontages would be minimal		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, where possible.		Cliff erosion would be prevented under a Hold the Line scenario and very limited damage to historic environment assets would occur.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		New defences would be required along the frontage and would threaten approximately 30 records noted by RCZAS that are currently near the cliff line.		As epoch 1, but increasing size and maintenance of structures would be required as sea levels rise, and may threaten further significant historic environment assets.		As epoch 2, with further threat to assets as defences need increasing levels of maintenance and improvements.

Timing objective - Provide sufficient time, if necessary for;	Score (all Epochs)	Explanation
Community adaptation		Communities would have to adapt to the change in the coastal zone brought about by a Hold the Line policy as beaches would disappear in front of the new defences and the coastal zone would become increasingly modified by man.
Relocation of regional infrastructure, ensuring continued A-road transport links between Barmston and Bridlington.		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.		A Hold the Line policy would ensure community services and infrastructure are protected and maintained.
Research of archaeological features and ecological surveys		Hold the Line policy from epoch 1, would mean there may be limited time to research archaeological features that would be damaged / removed by the new defences.
Provision of recreational access to the foreshore.		Foreshore access generally would become increasingly difficult as beaches disappear in front of the defence line.

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.		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 Hornsea as a viable town, seaside resort and regional commercial centre throughout the plan period.		Hold the line P4 would ensure Hornsea is maintained as a viable town, seaside town and regional commercial centre.		As epoch 1, however beaches would be lost under this policy, reducing the appeal of Withernsea as a seaside resort.		As epochs 1 and 2, but high defences would be required and would begin to impact upon the coastal views from the town. The complete loss of beaches in front of the defences would occur as sea level rise increases coastal squeeze.
Natural Environment						
Manage the functioning of Stream Dyke which drains Hornsea Mere and maintains the freshwater habitats.		The functioning of Stream Dyke and the freshwater Habitats of Hornsea Mere 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.		This policy package 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 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 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 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.		This policy package would lead to the reduction in beaches and landscape quality.		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.

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.		The natural process of erosion would be prevented by a Hold the Line policy and the sediment supplied to other coastlines from this area would reduce over time as beach material is eroded.		As epoch 1		As epochs 1 and 2.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion, where possible.		A Hold the Line policy would ensure that historic environment assets are protected against erosion, except any in front of the defence line.		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 significant historic environment assets.		Increasing size and maintenance of structures would be required as sea levels rise under P4 and Around 5 - 10 records noted by RCZAS would potentially be at threat.		Increasing size and maintenance of structures would be required as sea levels rise under P4 and Around 5 - 10 records noted by RCZAS would potentially be at threat.

Timing Objective- Provide sufficient time, if necessary, for;	**Score (all Epochs)**	**Explanation**
Community adaptation		There would be some time available for community adaptation. Assets such as the beaches would disappear and communities would need to adapt to a coastal zone increasingly modified by man.
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 some time to adapt to changes.
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 some time available for research.
Provision of recreational access to the foreshore		Insufficient time as the beaches would narrow and disappear under this policy package due to updrift reduction in sediment supplied.

Character Area 5: Rolston to Waxholme objectives for appraisal

Policy tested: Hold the Line 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		A Hold the Line Policy would ensure that the flood and erosion risk to people and property is minimised despite rising sea levels.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		Although existing defences would be incorporated, significant new defences would be required along the whole frontage as it is largely undefended at present.		Increasing levels of maintenance and intervention required to Hold The Line due to sea level rise, and existing defences would have been superseded.		As epoch 2.
Communities						
Protect all settlements		A Hold the Line Policy would ensure all settlements are protected		As epoch 1.		As epochs 1 and 2.
Natural Environment						
Maintain natural processes relating to the submarine forest at Tunstall		A Hold the Line policy would fundamentally alter natural processes and prevent erosion which maintains the submarine forest.		As epoch 1.		As epochs 1 and 2.
Maximise opportunities for habitat creation around coastal realignment at Tunstall Drain.		A Hold the Line policy would not allow habitat creation opportunities to be exploited.		As epoch 1.		As epochs 1 and 2.
Agriculture and Industry						
Protect as much grade 1 and grade 2 land as possible		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Although caravan parks would be protected, tourist assets such as beaches would narrow and reduce in extent.		As epoch 1, but loss of tourist assets such as beaches due to sea level rise and coastal squeeze. Aesthetic appeal would also reduce due to increasingly significant defence structures.		As epochs 1 and 2, but increasing reduction in areas tourist appeal due to loss of beaches and reduced aesthetics.
Infrastructure						
Avoid interruption to the functioning of the drainage network including; Tunstall, Cowden, and East Newton drains.		The drainage network would be uninterrupted by a Hold the Line policy.		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; and other key community services and utilities infrastructure.		The gas storage and industrial processing facility and other key community services and utilities infrastructure would be uninterrupted by a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.

Character Area 5: Rolston to Waxholme objectives for appraisal

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

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 Hold the Line policy would require significant new defences structures which would have a negative impacts on the qulaity of the coastal landscape. Beaches would also narrow due to coastal squeeze due to sea level rise.		As epoch 1, but increasingly significant defences structures would be required, further affecting the quality of the coastal landscape. Beaches would also be lost due to coastal squeeze.		As epochs 1 and 2, but with increasingly significant structures required to Hold the Line, thus further adversely affecting the quality of the coastal landscape.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes would be fundamentally altered by a Hold the Line policy as no cliff erosion would occur and thus the sediment supply to other frontages would be minimal.		As epoch 1.		As epochs 1 and 2.
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, where possible.		Cliff erosion prevented under a Hold the Line scenario and very limited damage to historic environment assets would occur.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		New defences would be required along the frontage and would threaten approximately 35 records noted by RCZAs currently near the cliff line.		As epoch 1, but increasing size and maintenance of structures would be required as sea levels rise, and may threaten further records noted by RCZAs currently near the cliff line.		As epoch 2, with further threat to records noted by RCZAs as defences need increasing levels of maintenance and improvements.

Timing Objective - Provide sufficient time, if necessary for;	**Score (all Epochs)**	**Explanation**
Community adaptation		Communities would have to adapt to the change in the coastal zone brought about by a Hold the Line policy as beaches would disappear in front of the new defences and the coastal zone would become increasingly modified by man.
Relocation / adaptation of the sewage works, MOD use of the foreshore, and other key community services and utilities infrastructure.		A Hold the Line policy would ensure community services and infrastructure are protected and maintained.
Research of archaeological features and ecological surveys		Hold the Line policy from epoch 1, would mean there may be limited time to research archaeological features that would be damaged / removed by the new defences.
Provision of recreational access to the foreshore		Foreshore access generally would become increasingly difficult as beaches disappear in front of the defence line.

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 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 maintained as a viable town, seaside town and regional commercial centre.		As epoch 1, however beaches would be lost under this policy, reducing the appeal of Withernsea as a seaside resort.		As epochs 1 and 2, but high defences would be required and would begin to impact upon the coastal views from the town. The complete loss of beaches in front of the defences would occur as sea level rise increases coastal squeeze.
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 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 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.		This policy package would lead to the reduction in beaches and landscape quality.		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.		The natural process of erosion would be prevented by a Hold the Line policy and the sediment supplied to other coastlines from this area would be reduce over time as the beach material in eroded.		As epoch 1		As epochs 1 and 2.

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, where possible.		A Hold the Line policy would ensure that historic environment assets are protected against erosion, except any in front of the defence line.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		Some improvements and additions to defence structures would be required along the frontage and therefore approximately 5 records noted by RCZAs would be at threat.		Increasing size and maintenance of structures would be required as sea levels rise under P4 and would increase threat to significant historic environment assets. Approximately 5-10 records noted by RCZAs would 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 5-10 records noted by RCZAs would potentially be at risk.

Timing Objective - Provide sufficient time, if necessary for;	Score (all Epochs)	Explanation
Community adaptation,		There would be some time available for community adaptation. Assets such as the beaches would disappear and communities would need to adapt to a coastal zone increasingly modified by man.
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 some time to adapt to changes.
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.
Ensure coastal defence works do not threaten designated and significant historic environment assets		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 some time available for research.
Provision of recreational access to the foreshore.		Insufficient time as the beaches would narrow and disappear under this policy package due to updrift reduction in sediment supplied.

Character area 7: Hollym to Dimlington cliffs objectives for appraisal

Policy tested: Hold the Line 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		A Hold the Line Policy would ensure that the flood and erosion risk to people and property is minimised despite rising sea levels.		As epoch 1.		As epochs 1 and 2.
Communities						
Protect all settlements		A Hold the Line Policy would ensure all settlements are protected.		As epoch 1.		As epochs 1 and 2.
Natural Environment						
Maintain natural processes leading to the exposure of the geological features at Dimlington cliffs.		A Hold the Line policy would prevent erosion which maintains the exposure of the geological features.		As epoch 1.		As epochs 1 and 2.
Agriculture and Industry						
Protect as much grade 1 and grade 2 land as possible		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Ensure that the impact on the UK's area of agricultural land is acceptable		A Hold the Line policy would protect all agricultural land against erosion.		As epoch 1.		As epochs 1 and 2.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		Although caravan parks would be protected, tourist assets such as beaches would narrow and reduce in extent.		As epoch 1, but loss of tourist assets such as beaches due to sea level rise and coastal squeeze. Aesthetic appeal would also reduce due to increasingly significant defence structures.		As epochs 1 and 2, but increasing reduction in areas tourist appeal due to loss of beaches and reduced aesthetics.
Infrastructure						
Avoid interruption to the functioning of the A1033.		A 1033 would be uninterrupted under a Hold the Line policy.		As epoch 1.		As epochs 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.		The sewage treatment works, wind farm and other key community services and utilities infrastructure would be uninterrupted by a Hold the Line policy.		As epoch 1.		As epochs 1 and 2.

Character area 7: Hollym to Dimlington cliffs objectives for appraisal

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

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 Hold the Line policy would require significant new defences structures which would have a negative impacts on the qulaity of the coastal landscape. Beaches would also narrow due to coastal squeeze due to sea level rise.		As epoch 1, but increasingly significant defences structures would be required, further affecting the quality of the coastal landscape. Beaches would also be lost due to coastal squeeze.		As epochs 1 and 2, but with increasingly significant structures required to Hold the Line, thus further adversely affecting the quality of the coastal landscape.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes would be fundamentally altered by a Hold the Line policy as no cliff erosion would occur and thus the sediment supplied to other frontages would be minimal.		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, where possible.		Cliff erosion prevented under a Hold the Line scenario and very limited damage to historic environment assets would occur.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets		New defences would be required along the frontage and would threaten approximately 15 records noted by RCZAs currently near the cliff line.		As epoch 1, but increasing size and maintenance of structures would be required as sea levels rise, and may threaten further records noted by RCZAs currently near the cliff line.		As epoch 2, with further threat to records as defence would need increasing levels of maintenance and improvements.

Timing Objective - Provide sufficient time, if necessary for;	Score (all Epochs)	Explanation
Community adaptation		Communities would have to adapt to the change in the coastal zone brought about by a Hold the Line policy as beaches would disappear in front of the new defences and the coastal zone would become increasingly modified by man.
Relocation of regional infrastructure, ensuring continued A road transport links between Hollym and Withernsea.		Relocation of regional infrastructure would not be required under a Hold the Line policy.
Research of archaeological features and ecological surveys		Hold the Line policy from epoch 1, would mean there would be limited time to research archaeological features that would be damaged / removed by the new defences.
Provision of recreational access to the foreshore.		Foreshore access generally would become increasingly difficult as beaches would disappear in front of the defence line.

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

Policy tested: Hold the Line 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		A Hold the Line policy would ensure that the area is protected against flooding and erosion.		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.		New defences would supersede the current defences by this time.
Agriculture and Industry						
Protect all settlements		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.		This policy package would lead to the reduction in beaches and landscape quality.		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.		This policy would not cause significant interrupt to the longshore transport of sediment through the area. However, the natural process of erosion would be prevented by a Hold the Line policy and the sediment supplied to other coastlines from this area would be minimal,		As epoch 1, with increasing lack of sediment supplied from this area to downdrift frontages		As epoch 2.

Timing Objective - 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 2.1a (Easington to Kilnsea, Easington Road to Stone Creek)

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.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line for areas with flood defences with P4. No Active Intervention on currently undefended areas.

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.		As epoch 1.		There could be approximately 4 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 an increasing requirement for significant upgrades to existing defences to remain effective.		Existing defences would have little use and new defences would be required.
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.		As epoch 1.		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 to coastal squeeze as sea levels rise and the defence line is held.		The lagoons are not likely to exist by 2105 due to coastal squeeze from over 1 metre of sea level rise and a Hold the Line 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 quality and extent of the lagoons would be significantly affected as a sea level rise accelerates and the rear of the lagoons is constrained by a Hold the Line policy.		The lagoons are not likely to exist by 2105 due to coastal squeeze from over 1 metre of sea level rise coupled with a Hold the Line policy.
Ensure that there are no adverse impacts to the UK's internationally designated sites		It is likely that there would be detrimental effects on internationally designated habitats due to coastal squeeze.		Internationally designated sites would be detrimentally affected as the quality and extent of mudflats and saltmarshes would occur.		Internationally designated sites would be significantly affected as the quality and extent of mudflats and saltmarshes would reduce substantially.
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. Some small losses of upto a few hectares of grade 3 land is likely to occur due to erosion.		As epoch 1.		As epoch 2, with some losses of upto approximately 30 hectares of grade 3 agricultural land due to 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 sea level rise would lead to a reduction in quality and/or loss of tourist assets such as the lagoons and wildlife under Hold the Line P4. The caravan site would be increasingly affected by erosion.		As epoch 2, but further reduction in tourist appeal due to loss of beaches and habitats. Increasing impacts due to erosion for the caravan sites.
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 beaches and lagoons would have narrowed and significantly reduced in quality and extent due to coastal squeeze as sea levels rise and the defence line is held. Additional defences, including hard structures are likely to be required to carry out this policy. These would also affect the aesthetics of the coastal landscape.		As epoch 2 but with increasingly significant structures required to Hold the Line, thus further adversely affecting the quality of the coastal landscape.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line for areas with flood defences with P4. No Active Intervention on currently undefended areas.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score		Score	Explanation	Score	Explanation
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 reduce.		Coastal processes would be largely uninterrupted, however there may begin to be some adverse effects by 2055 in areas where erosion is prevented as the defence line is held.		There would be some interruption to coastal processes as the defences are held on some parts of the frontage.
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 a few records 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.		As epoch 1, but with a few more records noted by the RCZAs potentially at threat from erosion.		Significant and historic environment assets would be unaffected however there could be a threat to 10 or more 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.		As epoch 1.		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 maybe 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.		Although recreational access to the foreshore would be maintained, foreshore access generally may become increasingly difficult as beaches narrow / disappear infront of the defence line.

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

Policy tested: Hold the Line with P4 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		Hold the line P4 would maintain current 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 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.		New additional defences would largely supersede 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.
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 although there would be some loss due to coastal squeeze as sea levels rise.		The natural evolution of habitats would be prevented as a Hold the Line policy would lead to coastal squeeze as sea levels rise.		A Hold the line policy would have significant impacts on the natural processes relating to the saltmarshes and mudflats by constraining them as sea levels rise.
Maintain and enhance the extent and condition of saltmarshes and mudflats if possible		The extent and condition of habitats could be affected as sea levels rise and the defences prevent landwards migration of habitats.		Saltmarshes and mudflats would reduce in quality and extent under this policy as coastal squeeze would occur due to rising sea levels and the continued presence of defences.		Saltmarshes and mudflats would reduce significantly in quality and extent under this policy as coastal squeeze would occur due to rising sea levels and the continued presence of defences.
Maintain and enhance populations of waders and wildfowl		Populations of waders and wildfowl would be largely unaffected under this policy as habitats which support these species would remain.		Populations of waders and wildfowl may begin to be affected due to the diminishing quality and extent of habitats which support these species.		Populations of waders and wildfowl would be affected due to the diminishing quality and extent of habitats which support these species.
Ensure that there are no adverse impacts to the UK's internationally designated sites		It is likely there would be some detrimental effects on internationally designated habitats due to coastal squeeze.		Internationally designated sites would be detrimentally affected as the quality and extent of mudflats and saltmarshes would occur.		Internationally designated sites would be significantly affected as the quality and extent of mudflats and saltmarshes would reduce substantially.
Agriculture and industry						
Protect grade 1 and 2 agricultural land		Under a Hold the Line policy, grade 1 and 2 agricultural land would be protected to the same standard as the present day.		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 detrimental effects on agricultural land under this policy.		As epoch 1.		As epochs 1 and 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.

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

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

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		The landscape would remain largely similar to the present day under this policy.		There is the potential for some impacts on the landscape as defences would be upgraded to carry out this policy. Intertidal habitats would also reduce in quality and extent as sea levels rise.		There would be some adverse affects due to increasingly significant high defences, and reducing intertidal habitats.
Coastal processes						
To prevent interruption of coastal processes which create intertidal and subtidal habitats within the Humber Estuary		The coastal processes creating intertidal and subtidal habitats within the estuary would be largely uninterrupted by this policy.		Coastal processes creating intertidal habitats in the estuary would begin to be affected by a Hold the Line policy. Coastal processes creating subtidal habitats would remain uninterrupted.		Coastal processes creating intertidal habitats would be interrupted by a Hold the Line policy. Coastal processes creating subtidal habitats would be largely uninterrupted.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding, where possible		Designated and significant historic environment assets behind the defences would be protected to the same standard as the present day against flooding. Erosion of assets would also be prevented.		As epoch 1.		As epochs 1 and 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.		As epoch 1, however increasing defence works and upgrades would be required to account for sea level rise which could affect a small number of records noted by the RCZAs which are in close proximity to the current defences.		As epoch 2, however further increasing defence works and upgrades would be required to account for sea level rise which could affect a small number of records noted by the RCZAs which are in close proximity to the current defences.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		There would be sufficient time for community adaptation under this policy if required.				
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.				
Research of archaeological features and ecological surveys, and		Sufficient time available.				
Provision of recreational access to the foreshore.		Sufficient time available, however foreshore access may become restricted over time under this policy as sea levels rise.				

Policy Package 2.1b (Kilnsea to Spurn Point)

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.

Character Area 10: Kilnsea to Spurn Point 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						
Minimise coastal flood and erosion risk to people and property.		A Hold the Line policy would minimise the flood and erosion risk, but there are few people and property in this area.		As epoch 1.		As epochs 1 and 2.
Make effective use of existing man-made or natural defences.		The natural barrier feature of spurn would be used, however its position and integrity would be maintained with the aid of new defences as existing hard defences are largely derelict.		Although the natural barrier would be used, significant defences would be required to carry out this polciy as sea levels rise.		As epoch 2, but with further reliance on defences to carryout this policy.
Communities						
Protect as many settlements as possible.		There are very few settlements within this area, but a Hold the Line policy would protect them.		As epoch 1.		As epochs 1 and 2.
Natural environment						
Maintain natural processes relating to the saltmarshes, mudflats and sand dunes.		Natural processes relating to the dunes and mudflats on the open coast would be modified under this policy. Natural processes relating to the saltmarshes on the estaurine side would continue largely unhindered.		As epoch 1, however increasing impact on coastal processes relating to these habitats due to a Hold the Line policy.		As epoch 2, but with further impacts as sea levels rise.
Maintain and if possible enhance the extent and condition of the saltmarshes, mudflats and sand dunes.		Natural processes relating to the dunes and mudflats on the open coast would be modified under this policy. This could affect the quality and extent of these habitats. Estuarine saltmarshes would reduce in extent as a result of sea level rise.		As epoch 1.		As epochs 1 and 2.
Maintain and where possible enhance the natural processes relating to the geomorphological functioning of Spurn.		This policy would affect the natural processes which could affect the geomorphological functioning of Spurn.		As epoch 1.		As epochs 1 and 2.
Maintain and enhance populations of waterfowl.		Habitats which support waterfowl could reduce under this policy and therefore populations of waterfowl could be affected.		As epoch 1, but with further risk of reduction in the populations of waterfowl.		As epoch 2, but with further impacts as sea levels rise and the habitats reduce.
Ensure that the impact on the UK's area of internationally designated habitat is acceptable.		The environmentally designated habitats could reduce in quality and extent.		As epoch 1, but with risk of further impacts due to sea level rise and a Hold the Line Policy interrupting natural processes.		As epoch 2, but with potential for significant detrimental effects to internationally designated habitats.
Agriculture and Industry						
Ensure that the impact on the UK's area of agricultural land is acceptable		No agricultural land would be lost under a Hold the Line 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. Although the feature is likely to be maintained in situ, under a Hold the Line policy the barrier and associated tourism assets would not evolve naturally		As epoch 1, but as sea level rise accelerates, habitats that support birdlife - a key tourism asset, would reduce in quality and extent due to coastal squeeze. The natural aesthetics that attract tourism would be affected as the natural feature would become heavily modified.		As epoch 2, with further loss of tourism assets such as habitats that support birdlife, and diminishing aesthetics as defences would need to be increasingly significant to Hold the Line.

Character Area 10: Kilnsea to Spurn Point 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
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 Hold the Line policy, the key community services and utilities infrastructure 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 would be interrupted and modified under a Hold the Line policy and the landscape would not evolve naturally. Defence structures would be required under this policy which would impact on the natural coastal landscape.		As epoch 1, but with increasing human modification of the natural landscape and increasingly significant defence structures would be required.		As epoch 2 but with further negative impacts as sea level rise accelerates.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes supplying sediment to other coastlines would be affected by a Hold the Line policy. Erosion of the barrier would be prevented by a Hold the Line policy and sediment output would reduce. Depending on the mechanisms used to carry out this policy, there could be interruption to the longshore transport of sediment through this area from updrift areas to the Humber mouth.		As epoch 1, but with increasing interruption of coastal processes as the line is held and sea levels rise.		As epochs 1 and 2, but with further interruption.
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 damage to designated and significant historic environment assets under this policy.		As epoch 1.		As epochs 1 and 2.
Ensure coastal defence works do not threaten designated and significant historic environment assets, where possible.		Depending on the mechanisms used to implement this policy, there would be a risk of damage to approximately 12 records noted by the RCZAs due to defences.		As epoch 1.		As epochs 1 and 2.

Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**
Community adaptation,		There would be sufficient time for community adaptation under a Hold the Line policy.
Changes of flood risk management practices		There would be some time available for changes in flood risk management under this policy..
Relocation / adaptation of RNLI station, Humber pilots station, sewage treatment works and other key community services and utilities infrastructure.		A Hold the Line policy would allow sufficient time for adaptation and relocation.
Relocation/adaptation of visitor centre, caravan site, and other key community services and infrastructure		A Hold the Line policy would allow sufficient time for adaptation and relocation.
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.
Provision of recreational access to the foreshore.		Sufficient time available, although foreshore would reduce in extent as sea levels rise and the defence line is held.

Policy Package 2.2a (Easington to Kilnsea, Easington Road to Stone Creek)

Character Area	Policy Appraised
Character Area 9: Easington to Kilnsea	Hold the line for all epochs along the entire frontage, P3 evaluated. No Active Intervention on currently undefended areas.
Character Area 11: Easington Road to Stone Creek	Hold the line for all epochs along the entire frontage, P3 evaluated.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line for areas with flood defences with P3. No Active Intervention on currently undefended areas.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score		Score	Explanation	Score	Explanation
Flood and erosion risk						
Protect people and property		Under a Hold the line P3 policy, properties would continue to be protected with a largely similar standard of protection against flooding to the present day. There would be no threat to properties due to erosion in this epoch.		This standard of protection would fall significantly over time as sea levels rise and people and property would be at threat from increasingly frequent flooding.		There would be significant threat to people and properties due to flooding. A few properties could also be at risk of erosion on the undefended frontages.
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.		The existing defences would still be used to carry out this policy, however there would be an increasing requirement for significant maintenance to remain effective.		Existing defences would need considerable intervention and maintenance to carry out this policy
Communities						
Protect all settlements		Hold the line P3 would continue to provide protection to settlements. Erosion would continue on undefended frontages but would not threaten settlements.		Risk to settlements would increase as the standard of protection against flooding would fall significantly under this policy.		Settlements would be at risk of frequent and significant flooding as sea levels rise and the standard of protection would become very low. Erosion may also threaten some settlements.
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 to coastal squeeze as sea levels rise and the defence line is held.		The lagoons are not likely to exist by 2105 due to coastal squeeze from over 1 metre of sea level rise and a Hold the Line 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 quality and extent of the lagoons would be significantly affected as a sea level rise accelerates and the rear of the lagoons is constrained by a Hold the Line policy.		The lagoons are not likely to exist by 2105 due to coastal squeeze from over 1 metre of sea level rise coupled with a Hold the Line policy.
Ensure that there are no adverse impacts to the UK's internationally designated sites		It is likely that there would be detrimental effects on internationally designated habitats due to coastal squeeze.		Internationally designated sites would be detrimentally affected as the quality and extent of mudflats and saltmarshes would occur.		Internationally designated sites would be significantly affected as the quality and extent of mudflats and saltmarshes would reduce substantially.
Agriculture and Industry						
Ensure that the impact on the UK's area of agricultural land is acceptable		A Hold the Line P3 policy would protect agricultural land against flooding as the standard of protection would not fall significantly compared to the present day. Some small losses upto a few hectares of grade 3 agricultural land is likely to occur due to erosion.		Agricultural land would be at significant threat from coastal flooding under this policy and would cause farming to become unviable as the frequency of flooding would increase as sea level rise accelerates.		Agricultural land would be unusable due to the frequency of coastal flooding under this policy.
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 become increasingly unsustainable under this policy as sea levels rise. Flooding would threaten tourism assets and the quality and extent of features such as the lagoons and wildlife would diminish. The caravan site would be increasingly affected by erosion.		As epoch 2, but further reduction in tourist appeal due to loss of beaches and habitats.
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 beaches and lagoons would have narrowed and significantly reduced in quality and extent due to coastal squeeze as sea levels rise and the defence line is held.		As epoch 2 with further adverse impacts on the coastal landscape.

Character Area 9: Easington to Kilnsea objectives for appraisal

Policy tested: Hold the Line for areas with flood defences with P3. No Active Intervention on currently undefended areas.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score		Score	Explanation	Score	Explanation
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 reduce.		Coastal processes would be largely uninterrupted, however there may begin to be some adverse effects by 2055 in areas where erosion is prevented as the defence line is held.		There would be some interruption to coastal processes as the defences are held on some parts of the frontage.
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 a few records 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.		A scheduled Monument and listed building would be at threat under this policy as the standard of protection falls. A number of records noted by the RCZAs would also be at threat from flooding and erosion.		As epoch 2, but with further increase in threat as erosion accelerates and the flood risk increases significantly.
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. Approximately 5 records noted by the RCZAs could potentially be threatened as defence maintenance is undertaken.		As epoch 1.		As epochs 1 and 2.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		Communities would have limited time to adapt. The flooding risk would increase significantly, especially in epoch 2. 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 some 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 some time for relocation / adaptation of key community services and infrastructure if required.				
Provision of recreational access to the foreshore.		Although recreational access to the foreshore would be maintained, foreshore access generally may become increasingly difficult as beaches narrow / disappear infront of the defence line.				

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

Policy tested: Hold the Line with P3 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		Under this policy the standard of protection against flooding would not fall significantly compared to the present day. Erosion would be prevented.		There would be increasing risk of flooding to people and property on the floodplain as the standard of protection would fall significantly over time as sea levels rise.		The standard of protection would fall to significantly less than 1 in 20 years and people and property would be at frequent threat of flooding.
Make effective use of existing man-made or natural defences.		Existing defences would continue to be used effectively and crests would be maintained at their current levels under a this policy.		The current defences would still provide defence benefits as maintenance would be carried out under this policy. As sea levels rise the defences would become less effective at preventing flooding as crest heights would not be raised to counter rising sea levels.		The existing defences would be maintained and would provide some flood protection benefits, however the effect would have reduces significantly due to accelerating sea level rise.
Communities						
Protect all settlements		The standard of protection would fall over time, however settlement would remain protected at a standard not significantly lower than the present day.		The standard of protection against flooding for settlements would reduce significantly with sea level rise.		All settlements on the floodplain would be at threat of significant and frequent flooding.
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 although there would be some loss due to coastal squeeze as sea levels rise.		The natural evolution of habitats would be prevented as a Hold the Line policy would lead to coastal squeeze as sea levels rise.		A Hold the line policy would have significant impacts on the natural processes relating to the saltmarshes and mudflats by constraining them as sea levels rise.
Maintain and enhance the extent and condition of saltmarshes and mudflats		The extent and condition of habitats could be affected as sea levels rise and the defences prevent landwards migration of habitats.		Saltmarshes and mudflats would reduce in quality and extent under this policy as coastal squeeze would occur due to rising sea levels and the continued presence of defences.		Saltmarshes and mudflats would reduce significantly in quality and extent under this policy as coastal squeeze would occur due to rising sea levels and the continued presence of defences.
Maintain and enhance populations of waders and wildfowl		Populations of waders and wildfowl would be largely unaffected under this policy as habitats which support these species would remain.		Populations of waders and wildfowl may begin to be affected due to the diminishing quality and extent of habitats which support these species.		Populations of waders and wildfowl would be affected due to the diminishing quality and extent of habitats which support these species.
Ensure that there are no adverse impacts to the UK's internationally designated sites		It is likely there would be some detrimental effects on internationally designated habitats due to coastal squeeze.		Internationally designated sites would be detrimentally affected as the quality and extent of mudflats and saltmarshes would occur.		Internationally designated sites would be significantly affected as the quality and extent of mudflats and saltmarshes would reduce substantially.
Agriculture and industry						
Protect grade 1 and 2 agricultural land		Under a Hold the Line policy, grade 1 and 2 agricultural land would be protected to a similar standard as the present day.		Grade 1 and 2 land would be at increasing threat of coastal flooding as the standard of protection would fall as sea levels rise. This may impact on the viability of using the land for agricultural purposes.		Grade 1 and 2 land would be at significant threat of substantial and frequent coastal flooding and this would mean that using the land for agricultural purposes would be unviable.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no detrimental effects on agricultural land under this policy.		Agricultural land would be at increasing threat of coastal flooding as the standard of protection would fall as sea levels rise. This may impact on the viability of using the land for agricultural purposes.		Agricultural land would be at significant threat of substantial and frequent coastal flooding and this would mean that using the land for agricultural purposes would be unviable.
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.		The functioning of key community services infrastructure would become at risk of interruption due to the significant threat of coastal flooding.		The functioning of key community services infrastructure would be threatened by the significant threat of coastal flooding.

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

Policy tested: Hold the Line with P3 along the entire frontage for all epochs.

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.		The landscape would remain similar to the present day under this policy.		There is the potential for some impacts on the landscape as defences would be upgraded to carry out this policy. Intertidal habitats would also reduce in quality and extent as sea levels rise.		There would be some adverse affects due to some reduction in intertidal habitats.
Coastal processes						
To prevent interruption of coastal processes which create intertidal and subtidal habitats within the Humber Estuary.		The coastal processes creating intertidal and subtidal habitats within the estuary would be largely uninterrupted by this policy.		Coastal processes creating intertidal habitats in the estuary would begin to be affected by a Hold the Line policy. Coastal processes creating subtidal habitats would remain uninterrupted.		Coastal processes creating intertidal habitats would be interrupted by a Hold the Line policy. Coastal processes creating subtidal habitats would be largely uninterrupted.
Historic environment						
Minimise damage to designated and significant historic environment assets from erosion and flooding, where possible.		Designated and significant historic environment assets behind the defences would be protected to the same standard as the present day against flooding. Erosion of assets would also be prevented.		Some listed buildings, scheduled monuments a conservation area and many records noted by the RCZAs could become at risk of loss / damage due to flooding.		Many listed buildings, scheduled monuments a conservation area and many records noted by the RCZAs would be at significant threat of loss / damage due to flooding.
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.		No designated or significant historic environment assets would be affected by coastal defence works.		No designated or significant historic environment assets would be affected by coastal defence works.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		There would be limited time for community adaptation under this policy, as the standard of protection against flooding would fall and threat of flooding to communities would increase significantly especially in epochs 2 and 3.				
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 some time available for relocation / adaptation to key community services infrastructure under this policy, however the threat of flooding would increase significantly in epoch 2 and 3 as the standard of protection would fall as sea levels rise.				
Research of archaeological features and ecological surveys, and		There would be some time available.				
Provision of recreational access to the foreshore.		Sufficient time available, however foreshore access may become restricted over time under this policy as sea levels rise.				

Policy Package 2.2b (Kilnsea to Spurn Point)

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.

Character Area 10: Kilnsea to Spurn Point objectives for appraisal

Policy tested: No Active Intervention 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 at risk, however No Active intervention could mean these become susceptible to erosion or flooding, There is a risk that the barrier could breach and if this occured flood risk to other areas in the Humber could increase due to greater wave energy entering the estuary mouth.		As epoch 1, but with further increase in flood and erosion risk and the probabability of breaching as sea levels rise.		As epoch 2 but with futher increase in risk.
Make effective use of existing man-made or natural defences.		The existing hard defences are largley derelict and would not be maintained or replaced under this policy. The barrier is likely to continue providing protection to the estuary by reducing wave energy entering the mouth.		The existing hard defences would no longer be used effectively. The barrier would become increasingly susceptible to breaching and it would not be used effectively under this policy.		As epoch 2.
Communities						
Protect as many settlements as possible.		Although there are few settlements in this area which would be unprotected against erosion and flooding, they are likely to be largely unaffected over this epoch, but risk would increase over time.		As epoch 1, but with increasing risk as sea levels rise.		As epoch 2, with further increase in risk.
Natural environment						
Maintain natural processes relating to the saltmarshes, mudflats and sand dunes.		Natural processes relating to the dunes, mudflats and saltmarshes would continue under this policy.		As epoch 1.		As epochs 1 and 2.
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 continue so this polciy would not detrimentally affect the quality and extent of these habitats.		As epoch 1.		As epochs 1 and 2.
Maintain and where possible enhance the natural processes relating to the geomorphological functioning of Spurn.		This policy would allow the natural processes relating to the geomorphological functioning of Spurn to continue.		As epoch 1.		As epochs 1 and 2.
Maintain and enhance populations of waterfowl.		This policy would allow habitats supporting waterfowl to evolve naturally and so this policy would not detrimentally affect wildfowl populations.		As epoch 1.		As epochs 1 and 2.
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 No Active Intervention.		As epoch 1.		As epochs 1 and 2.
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 No Active Intervention.		There is the potential for approxiamately 8 hectares of grade 4 agricultural land to be lost due to flooding / erosion under this policy as sea levels rise.		As epoch 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 naturally, however if an unhealing breach occurred, tourism access to Spurn point could be lost.		As epoch 1, but there is increasing potential for an unhealing breach to occur as sea levels rise.		As epochs 1 and 2 with a significant risk that the integrity of the barrier could lost due to breaching. This would reduce the tourism appeal and access.

Character Area 10: Kilnsea to Spurn Point objectives for appraisal

Policy tested: No Active Intervention 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 policy of No Active Intervention there is a risk that key community services and utilities infrastructure could be interrupted as the barrier evolves, and breaching could occur which would prevent access to Humber pilots station, lighthouse, and RNLI station.		As epoch 1 but risk of interruption would increase due to greater risk of flooding, erosion and breaching as sea levels rise.		As epochs 1 and 2, but risk of significant disruption to key community services and utilities infrastructure.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		Natural processes shaping the coastal landscape would continue under No Active Intervention.		As epoch 1.		As epochs 1 and 2.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Coastal processes supplying sediment to other coastlines would be uniterrupted under No Active Intervention.		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 is unlikely to be damage to designated and significant historic environment assets. Slight risk of impacts to a few 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 risk may increases under this policy. Approximately 30 records noted by RCZAs could also be affected.		Significant risk that the Lighthouse and Tower of the former lighthouse, as well as over 30 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.		No defences would be used under No Active Intervention.		As epoch 1.		As epochs 1 and 2.

Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**
Community adaptation,		There would be limited time for community adaptation under a No Active Intervention policy.
Changes of flood risk management practices		There would be no time provided for changes to flood risk management under No Active Intervention.
Relocation / adaptation of RNLI station, Humber pilots station, sewage treatment works and other key community services and utilities infrastructure.		A No Active Intervention policy would only allow limited time for adaptation and relocation of key community services and utilities infrastructure.
Relocation/adaptation of visitor centre, caravan site, and other key community services and infrastructure		There would be limited time for relocation / adaptation under a No Active Intervention policy.
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.
Provision of recreational access to the foreshore.		Some time available, although foreshore will reduce in extent, and acces may become restricted as sea levels rise.

Policy Package 4.2 (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 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

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 epochs 1 and 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 upon 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

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
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.
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.

Objective - Provide sufficient time, if necessary for;	**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 1.		As epochs 1 and 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.

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
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.
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.

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
Objective - Provide sufficient time, if necessary for;	**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 epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, 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.		The Managed Realignment of defences could mean some properties would no longer be protected and may have to be abandoned. Leisure and Amusement parks could also be affected. Caravans and Mobile Homes in close proximity to the coast could be at risk and would require relocation. Protection against erosion and the standard of protection against flooding to people and property behind the new defence line would be maintained.
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 .		Entirely new defences would be required to construct a new defence line. The existing defences would still provide some protection benefits, but their effect would rapidly reduce over time as only maintenance of the new defences would be undertaken.
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.		The Managed Realignment of defences would mean that the coastal fringes of Mablethorpe, Sutton on Sea and Trusthorpe located between the current defence line and proposed new defence line would be lost. All other settlements would be protected against erosion and against flooding to the same standard as the present day.
To maintain Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe as viable towns and seaside resorts, and also Mablethorpe as 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.		Despite loss of some property and assets, Mablethorpe would be maintained as a regional commercial centre. Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe would also be maintained as viable towns and seaside resorts due to the new defence line.
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.		Managed Realignment would cause some interruption to the natural processes relating to the sandflats and sand dunes due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and 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.		Under this policy it is likely that the condition and extent of the sandflats and dunes would reduce due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and 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 the natural processes relating to them would be affected due to accelerating sea level rise and the presence of defences. 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 epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, 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.		The Main Viking Gas storage and processing facility would be unaffected by the Managed Realignment policy as it is located sufficiently far from the shoreline. However there is potential for disruption to pipelines and associated assets of the Viking storage and processing facility due to the Managed Realignment. Other key community services and facilities infrastructure between the current and new defence line would no longer be protected and may need to be relocated to maintain their viability.
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.		There would be no agricultural land lost under a Managed Realignment policy.
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.		Managed Realignment could allow a tourism econom to continue, however the nature of tourism may change. Tourism assets such as holiday parks, beach huts, amusements and recreational/leisure facilities may need to be relocated. Beaches may still be present under the Managed Realignment policy.
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.		Despite the Managed Realignment of defences the A roads would remain largely uninterrupted. The A1111 would be close to the potential alignment of the new defence line and may require relocation depending on the specific location / requirements of the defence structures.
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.		The Managed Realignment of defences would allow the functioning of the drainage network to remain largely uninterrupted. However new outfalls and sluices would need to be constructed to ensure the uninterrupted functioning of the Cut and Woldgrift drains.There would be potential for impacts to pumping stations.
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.		The Managed Realignment of defences would cause some interruption to key community services and utilities infrastructure and those assets between the current and the proposed new defence line would need relocating.
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.		Some uncertainty of effects on coastal landscape depending on the exact mechanisms of implementation of the Managed Realignment policy. Managed Realignment is likely to relieve some impacts of coastal squeeze on the landscape in some areas. Beaches may remain. The construction of new significant defences would have detrimental effects on the landscape.

Character Area 16: Viking Gas Terminal to Sandilands (Mablethorpe) objectives for policy appraisal

Policy tested: 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.

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 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 continue, 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.		Managed Realignment of the defences would put approximately 5 Records noted by the RCZAS at threat of damage / loss due to erosion.
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.		Defence works involved in creating the new defence line under a policy of Managed Realignment could potentially lead to the loss or damage of 10 Records noted by the RCZAs.

Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**
Community adaptation,		As Managed Realignment would not occur until epoch 3, there would be sufficient time for communities to adapt to the changes.
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 this Policy Package.
Relocation / adaptation of gas terminal, sewage treatment works, and other key community services and utilities infrastructure.		As Managed Realignment would not occur until epoch 3, there would be sufficient time for relocation / adaptation of key community services and utilities infrastructure. The Viking Gas terminals and the sewage treatment works would not require relocation.
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 epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, 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.		The Managed Realignment of defences could mean some properties would no longer be protected and may have to be abandoned. Carparks, Caravans and mobile homes in close proximity to the coast could also be at risk. Protection against erosion and the standard of protection against flooding to people and property behind the new defence line would be maintained.
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 .		The Sea Bank would be incorporated into the new defence line proposed under Managed Realignment. New additional defence works would also be required as well as a cross bank. The existing defences would still provide some protection benefits but these would reduce rapidly over time as only maintenance of the new defence line is undertaken.
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.		This policy would ensure the settlements would be protected. A few isolated properties could become unprotected under Managed Realignment.
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.		The Managed Realignment would allow the natural processes relating to the Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh to largely continue as these habitats would be protected from erosion and coastal flooding by the policy. However upto 3 hectares of SSSI habitat near the Wolla bank car park would be adversely affected by the construction of a new defence line at the site.
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.		The Managed Realignment would cause some adverse impacts on the condition and extent of the Wolla Bank to Chapel Point and to Sea Bank Clay Pits reedbeds and marsh. Although much of this area would be protected from erosion and coastal flooding by the policy, upto 3 hectares of SSSI habitat near the Wolla bank car park would be adversely affected by the construction of a new defence line.
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.		Managed Realignment would cause some interruption to the natural processes relating to the sandflats and sand dunes due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and 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.		Under Managed Realignment there is the likelihood that the condition and extent of the sandflats and dunes could reduce due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes.

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

Policy tested: 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.

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.		The Managed Realignment site would lead to the loss of approximately 100 hectares of Grade 3 agricultural land.
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.		Managed Realignment would allow a diverse tourism economy. Potential increases in wildfowl and wildlife from the habitat creation due to the Managed Realignment. This could attract tourists. Overall a tourism economy could remain viable as the Holiday Park at Anderby Creek and associated infrastructure and facilities would be unaffected. This policy would however affect a Golf Course and a four coastal carparks.
Infrastructure						
Avoid interruption to the functioning of A111 and A52		The A111 and A52 would be uninterrupted by this policy.		As epoch 1.		This policy would not cause interruption to the A111 or A52.
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.		The drainage network would remain largely uninterrupted under this policy, however there would be potential for impacts to pumping stations.
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.		Some uncertainty of effects on coastal landscape depending on the exact method of implementation of the Managed Realignment policy. Managed Realignment would make use existing sea banks and is likely to relieve some impacts of coastal squeeze on the landscape as beaches would be maintained. There is also potential for new intertidal habitat to be created. However the construction of new defences would have some detrimental effects of the landscape.
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 continue, 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.		Managed Realignment of the defences would lead to damage and loss of approximately 16 records noted by the RCZAs that are present between the current and the proposed new defence line.
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 a few records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		Defence works involved in creating the new defence line under a policy of Managed Realignment could potentially lead to the loss or damage of 8 records noted by the RCZAs.

Character Area 17: Sandilands to Chapel Point objectives for policy appraisal						
Policy tested: 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.						
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		Most communities would not be required to adapt as a Hold the Line policy continues to protect most communities and associated assets. There would be some adaptation required regarding the change of land use at the site of the Managed Realignment, but this does not occur until epoch 3 and there are only 2 properties affected.				
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 epochs 1 and 2 followed by Managed Realignment of defences where appropriate in epoch 3 to increase defence sustainability, 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.		The Managed Realignment of defences could mean that some properties would no longer be protected and may have to be abandoned. Car parks, caravans and mobile homes in close proximity to the coast could be at risk. Protection against erosion and the standard of protection against flooding to people and property behind the new defence line would be maintained.
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 .		Entirely new defences would be required to construct a new defence line. The existing defences would still provide some protection benefits, but their effect would rapidly reduce over time as only maintenance of the new defences would be undertaken.
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.		Settlements at the coastal fringes of Chapel St Leonards, Ingoldmells, Seathorne and Winthorpe could be affected by Managed Realignment in this epoch. All other settlements behind the new defence line would be protected against erosion and against flooding to the same standard as the present day.
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.		Managed Realignment would cause some interruption to the natural processes relating to the sandflats and sand dunes due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be unaffected as they are located behind the defence line.
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.		Under Managed Realignment there is the likelihood that the condition and extent of the sandflats and dunes could reduce due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be maintained.

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal Policy tested: 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.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
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.		Under a Managed Realignment Policy, no grade 1 and 2 agricultural land would be lost.
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.		Under a Managed Realignment Policy, less than 1 hectare of grade 3 agricultural land would be lost.
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.		Managed Realignment may allow a tourism economy to continue. However, tourism assets such as holiday parks, beach huts, amusements and recreational/leisure facilities would need to be relocated.
Infrastructure						
Avoid interruption to functioning of the A52		The A52 would be uninterrupted by this policy.		As epoch 1.		The A52 would be uninterrupted by a Managed Realignment Policy as it is located behind the proposed new defence line.
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.		The Managed Realignment of defences would allow the functioning of the drainage network to remain uninterrupted. However new outfalls and sluices would need to be incorporated into the new defence line to maintain the functioning of the drainage network, especially the Main drain at Ingoldmells. There would be potential for impacts to pumping stations.
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.		Key community services and utilities infrastructure between the current and proposed new defence line would be affected. Ingoldmells Point and Seathorne Coastguard Lookout Stations would no longer be protected under a Managed Realignment policy. The sewage works would remain unaffected. Other key community services and utilities infrastructure behind the new defence line would be protected against erosion and against flooding to the same standard as the present day.
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.		Some uncertainty of effects on coastal landscape depending on the exact mechanisms of implementation of the Managed Realignment policy. Managed Realignment is likely to relieve some impacts of coastal squeeze on the landscape in some areas. Beaches may remain. The construction of new significant defences would have detrimental effects on the landscape.

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal						
Policy tested: 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.						
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 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 continue under this policy, 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.		Managed Realignment of the defences would lead to the potential damage and loss of approximately 10 Records noted by the RCZAS that are located between the current and the proposed new defence line.
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.		The construction of a new defence line under a Managed Realignment policy would potentially threaten approximately 10 records noted by the RCZAs.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation		As Managed Realignment would not occur until epoch 3, there would be sufficient time for communities to adapt to the changes.				
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 this policy..				
Relocation / adaptation of sewage treatment works and other key community services and utilities infrastructure.		Relocation of the sewage treatment works would not be required. Due to Managed Realignment occurring in epoch 3, there would be sufficient time for relocation / adaptation of other key community services and utilities infrastructure such as the Coastguard lookout station if required.				
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 18b: Skegness objectives for policy appraisal

Policy tested: 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.

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.		The Managed Realignment of defences could mean that some properties would no longer be protected and may have to be abandoned. Carparks, caravans and mobile homes in close proximity to the coast could be at risk. Two Lesiure / amusment complexes would also be affected. Protection against erosion and the standard of protection against flooding to people and property behind the new defence line would be maintained.
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.		Entirely new defences would be required to construct a new defence line. The existing defences would still provide some protection benefits, but their effect would rapidly reduce over time as only maintenance of the new defences would be undertaken.
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.		Settlement at the coastal fringes of Skegness could be affected under a Managed Realignment policy in this epoch. All other settlements behind the new defence line would be protected against erosion and against flooding to the same standard as the present day.
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.		Despite some impacts and interruption to property, infrastructure and assets in close proximity to the coast, Skegness would be maintained as a regional commercial centre and a viable town and seaside resort due to the new defence line maintaining protection to the town as a whole.
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.		There may be some interruption to the natural processes relating to the sandflats and sand dunes due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be unaffected as they are located behind the defence line.
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.		Under this policy there is the likelihood that the condition and extent of the sandflats and dunes could reduce due to accelerating sea level rise and the continued presence of defences. Artificial beach sediment replenishments may not be adequate to maintain the sandflats and dunes. Grazing marshes would be maintained.

Character Area 18b: Skegness objectives for policy appraisal						
Policy tested: 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.						
Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
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.		Under a Managed Realignment policy, no grade 1 and 2 agricultural land would be affected.
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.		Under a Managed Realignment policy, no agricultural land would be affected.
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 beaches would start to narrow as artificial replenishments may not be adequate to replace beach material lost.		Managed Realignment could allow a tourism economy to continue. However, tourism assets including amusements and recreational/leisure facilities, car parks and the pier complex would need to be relocated.
Infrastructure						
Avoid interruption to functioning of the A158 and the A52		The A158 and A52 would be uninterrupted by this policy.		As epoch 1.		The A158 and A52 would be uninterrupted by a Managed Realignment Policy as it is located behind the proposed new defence line.
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.		The Main, Winthorpe and Catchwater drains would be unaffected by a Managed Realignment policy.
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.		Key community services and utilities infrastructure between the current and proposed new defence line would be affected. Other key community services and utilities infrastructure behind the new defence line would be protected against erosion and against flooding to the same standard as the present day.There would be potential for impacts to pumping stations.
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.		Some uncertainty of effects on coastal landscape depending on the exact mechanisms of implementation of the Managed Realignment policy. Managed Realignment is likely to relieve some impacts of coastal squeeze on the landscape in some areas. Beaches may remain. The construction of new significant defences would have detrimental effects on the landscape.

Character Area 18b: Skegness objectives for policy appraisal						
Policy tested: 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.						
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 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 continue under this policy, 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.		Managed Realignment of the defences would lead to damage and loss of 1 listed building (Pier). Also approximately 4 records noted by the RCZAs would be at risk.
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 a few records noted by RCZAs could be affected, depending on the mechanisms used to carry out the policy.		As epoch 1.		Despite construction of a new defence line under a Managed Realignment policy, there would be no threat to significant historic environment assets from the defence works.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		As Managed Realignment would not occur until epoch 3, there would be sufficient time for communities to adapt to the changes.				
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 this policy.				
Relocation / adaptation of key community services and utilities infrastructure		Due to Managed Realignment occurring in epoch 3, there would be sufficient time for relocation / adaptation of key community services and utilities infrastructure if required.				
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 epochs 1 and 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 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, 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
Objective - Provide sufficient time, if necessary for;	**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.				

Policy Package 4.3 (South of Humberston Fitties to Gibraltar Point)

Character Area 14: South of Humberston Fitties to Saltfleet						
Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
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 P3 policy.		Maintenance of dunes and embankments would continue to present day crest heights, however their effectiveness would fall as sea levels rise.		Embankments and dunes would be maintained at present levels but would be largely ineffective due to a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a standard of approximately 1 in 120 years.		Increasing risk to settlements as the standard of protection would fall to less than 1 in 50 years under this policy.		The standard of protection would fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
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.		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 would be maintained over this epoch under this policy due to continued accretion.		As epoch 1.		As epochs 1 and 2, but sea level rise could begin to outpace accretion leading to reduction of condition and extent of bird supporting habitats such as mudflats and saltmarshes.
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 up on 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 begin to outpace accretion potentially leading to reduction in condition and internationally designated habitats.
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, with some increase in risk of flooding.		Settlements and tourism assets are likely to be at significant risk of flooding. The nature of the tourism economy would change fundamentally as the current drivers such as the beaches would narrow significantly. Habitat losses would begin to occur and this would alter the coastal landscape and affect aesthetics.

Character Area 14: South of Humberston Fitties to Saltfleet

Policy tested: Hold the Line for all epochs along the entire frontage, P3 evaluated

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
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.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect grade 1 and 2 agricultural land.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.
Infrastructure						
Avoid interruption to the functioning of the A1031.		The A1031 would be unaffected under this policy.		Risk of interruption to the functioning of the A1031 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A103 as the standard of protection is likely to reduce to less than 1 in 20 years.
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.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
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.		Risk of interruption to the functioning of key community facilities and utilities infrastructure would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
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, however the foreshore would begin to steepen and habitats could begin to be impacted.		Defences would be maintained at present day levels. As sea level rise accelerates there would be more frequent and significant flooding and water would become a more prominent feature of the coastal landscape. Potential for detrimental impacts as property may become abandoned due to flooding. Marshes could become more significant as sea levels rise and agricultural land is more frequently flooded. Beaches would reduce in extent and become narrow.
Coastal processes						
To prevent interruption of coastal processes which develop subtidal and intertidal habitats and supply sediment to other coastlines.		Accretion is expected to continue in this area and consequently 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 embankment 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, P3 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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		As the standard of protection is likely to fall to less than 1 in 20 years, there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 100 records noted by the RCZAs would be at risk, as well as at least 2 Scheduled Monuments and 7 listed buildings.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		As epoch 1.		As epochs 1 and 2.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices,		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links to Grimsby, Cleethorpes and Mablethorpe.		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of MOD use of the foreshore, sewage treatment works, oil terminal and other key community services and utilities infrastructure.		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become difficult to maintain as flooding becomes increasingly frequent 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 P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The dunes are likely continue to provide some protection against flooding, however the standard of protection would fall and by inspection, a significant number of people and property would by affected by flooding.
Make effective use of existing man-made or natural defences.		Accretion would continue to maintain the natural dunes and wide beach which form an effective defence line.		Some uncertainty, however accretion is expected to continue and would help maintain the dunes which would form effective defences against flooding.		Dunes would continue to provide some protection against flooding but if accretion starts to be outpaced by sea level rise, the dunes would become less effective and the standard of protection would fall because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a 1 in 120 year standard.		Increasing risk to settlements as the standard of protection is likely to fall to less than 1 in 50 years under this policy.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
Natural environment						
Maintain natural processes relating to the saltmarshes and mudflats.		The natural process of accretion would continue, especially in the north of this area. This would help maintain the saltmarsh and mudflats despite rising sea levels.		Continued feed of sediment to this area would lead to further accretion, with the fastest rate towards Saltfleet and least towards Mablethorpe. This would help maintain the saltmarshes despite sea level rise.		As sea level rise accelerates, the rate of accretion could begin to be outpaced by sea level rise. Coastal squeeze could occur as the natural landward migration of saltmarsh and mudflats would be prevented by this policy, potentially leading to some 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 despite rising sea levels.		Continued feed of sediment to this area would lead to further accretion, with the fastest rate towards Saltfleet and least towards Mablethorpe. This would help maintain the condition and extent of the sand dunes, saltmarshes and mudflats despite sea level rise.		As sea level rise accelerates, the rate of accretion could begin to be outpaced by sea level rise. Coastal squeeze could occur as the natural landward migration of sand dunes saltmarsh and mudflats would be prevented by this policy, potentially leading to a reduction of habitat condition 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 1.		As epochs 1 and 2, but sea level rise could begin to outpace accretion leading to reduction of condition and extent of bird supporting habitats such as mudflats and saltmarshes.
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, especially in the north of this area. This would help maintain the habitats.		As epoch 1.		Sea level rise could begin to outpace accretion leading to reduction of 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 significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding, however the land would still be useable for agricultural purposes.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.

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 P3 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, with some increase in risk of flooding.		Settlements and tourism assets are likely to be at significant risk of flooding. The nature of the tourism economy would change fundamentally as the current drivers such as the beaches would narrow significantly. Habitat losses would begin to occur and this would alter the coastal landscape and affect aesthetics.
Infrastructure						
Avoid interruption to the functioning of the A1031.		The A1031 would be unaffected under this policy.		Risk of interruption to the functioning of the A1031 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A1031 as the standard of protection is likely to reduce to less than 1 in 20 years.
Avoid interruption to the drainage network including land drainage pumping stations.		The drainage network and land pumping stations would be unaffected under this policy.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to the functioning of sewage works and other key community services and utilities infrastructure.		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
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.		Defences would be maintained at present day levels. As sea level rise accelerates there would be more frequent and significant flooding and water would become a more prominent feature of the coastal landscape. Potential for detrimental impacts as property may become abandoned due to flooding. Marshes could become more significant as sea levels rise and agricultural land is more frequently flooded. Beaches would reduce in extent and become narrower.
Coastal processes						
To prevent interruption of coastal processes which develop intertidal and subtidal habitats and supply sediment to other coastlines.		Accretion is expected to continue in this area and consequently 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 in front of the defences. However in some locations where the embankment 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.
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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 50 records noted by the RCZAs would be at risk, as well as at least 2 listed buildings.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		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 P3 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.		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road transport links to Mablethorpe.		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of sewage treatment works, pumping stations and other key community services and utilities infrastructure.		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become difficult to maintain as flooding becomes increasingly frequent 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 P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
Make effective use of existing man-made or natural defences.		The current defences would continue to form an effective defence line under a Hold the Line P3 policy.		Defences would continue to be maintained at present day crest heights, however their effectiveness would fall as sea levels rise.		Existing defences would be largely ineffective and would provide a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a 1 in 120 year standard.		Increasing risk to settlements as the standard of protection is likely to fall to less than 1 in 50 years under this policy.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
To maintain Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe as viable towns and seaside resorts, and also Mablethorpe as a regional commercial centre throughout the plan period.		Mablethorpe, Sutton on Sea, Sandilands and Trusthorpe would all be maintained as viable towns and seaside resorts. Mablethorpe would also be maintained as a regional commercial centre.		As epoch 1, however increasing risk of flooding would occur as the standard of protection is likely to fall to approximately 1 in 50 years by 2055.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. This would cause Mablethorpe to become unviable as a regional commercial centre and as a town and seaside resort. Sutton on Sea, Sandilands and Trusthorpe would also become unviable as towns and seaside resorts.
Natural environment						
Maintain natural processes relating to the sandflats and sand dunes.		The natural processes relating to the sandflats, marshes and sand dunes would largely continue, as in addition to natural sediment feed from updrift areas, maintenance of these features would also be assisted through artificially replenishing sediment losses at the same volumes as the present day.		It is likely that processes relating to the sandflats and dunes would be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments at present day volumes are not likely to 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 would not be adequate to maintain the sandflats and 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 largely maintained through natural processes and assisted through artificially replenishing sediment losses at present day volumes.		It is likely that the condition and extent of the sandflats and dunes is likely to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments are not likely to be adequate to maintain the sandflats and dunes.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and sand dunes would reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		The internationally designated habitats would be largely be maintained by natural processes and the continued artificial replenishment of sediment at present day volumes, however there is the possibility of some detrimental effects as sea levels rise.		Some uncertainty, however it is likely that internationally designated sites would be impacted as sea levels rise and the defence line is held. Artificial beach sediment replenishments at present day volumes would not be adequate to maintain the internationally designated habitats.		Internationally designated sites are likely to be significantly impacted as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments at present day volumes would 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 P3 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.		All key community facilities and utilities infrastructure would be unaffected under this policy.		The risk of interruption to the functioning of key community facilities and utilities infrastructure, including the Viking Gas storage and processing facilities would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.
Tourism						
Maintain and enhance the viability of a diverse tourism economy.		The viability of a diverse tourism economy would be largely maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches are likely to narrow as beach sediment is replenished at present day volumes, and sea levels rise.		A diverse tourism economy would be affected as the risk of flooding to settlements and tourism assets would increase, and beaches would narrow significantly as present day replenishment volumes would be insufficient to maintain a viable beach as sea levels rise.		A diverse tourism economy is likely to be heavily affected due to a low standard of protection which is likely to be less than 1 in 20 years as sea levels rise by over 1m. Towns and resorts would be significantly disrupted or abandoned. Tourism assets such as beaches would also be lost.
Infrastructure						
Avoid interruption to: the A157, A1104, A1031, A111 and A52;		The A157, A1104, A1031, A111 and A52 would be unaffected by this policy.		Risk of interruption to the functioning of the A157, A1104, A1031, A111 and A52 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A157, A1104, A1031, A111 and A52 as the standard of protection is likely to reduce to less than 1 in 20 years.
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.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to sewage works and other key community services and utilities infrastructure.		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would begin to be impacted by 2025, as beaches would narrow as beach replenishments at present day volumes would be insufficient to maintain the beaches as sea levels rise.		As epoch 1, but with further beach narrowing, and reduction in extent of sand flats and sand dunes.		As epoch 2 with further impacts on the landscape as sea level rise accelerates. Increasingly significant and frequent flooding would alter the landscape and agricultural land would not be maintained and property may become abandoned.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines.		Although longshore transport of sediment would continue, natural coastal processes supplying sediment to other coastlines would begin to be affected as the defence line is held and beach sediment replenishments at present day volumes would be insufficient to fulfil the down drift sediment demands as sea levels rise.		As epoch 1, with effects exacerbated as sea level rise accelerate.		As epoch 2, with further impacts on coastal processes as sea levels rise.

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 P3 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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 90 records noted by the RCZAs would be at risk, as well as at least 3 Scheduled Monuments and 1 listed building.
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 designated and significant historic environment assets.		As epoch 1.		As epochs 1 and 2.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road transport which link Mablethorpe, Sutton on Sea and Trusthorpe with Louth and Alford to the west.		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of gas terminal, sewage treatment works, and other key community services and utilities infrastructure.		Large scale relocation / adaptation of key community services and utilities infrastructure, including the gas terminal, would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys.		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become more difficult to maintain as flooding becomes increasingly frequent under this policy.				

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

Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
Make effective use of existing man-made or natural defences.		The current defences would continue to form an effective defence line under a Hold the Line P3 policy.		Defences would continue to be maintained at present day crest heights, however their effectiveness would fall as sea levels rise.		Existing defences would be largely ineffective and would provide a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a 1 in 120 year standard.		Increasing risk to settlements as the standard of protection is likely to fall to less than 1 in 50 years under this policy.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
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.		The natural processes relating to the reedbeds and marsh would be at risk of disruption from coastal flooding as the standard of protection is likely to fall to approximately 1 in 50 years.		As the likelihood of flooding would increase significantly, the natural processes relating to the reedbeds and marshes are likely to be adversely affected.
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 condition and extent of 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.		The condition and extent of the reedbeds and marshes is likely to be affected due to coastal flooding as the standard of protection is likely to fall to approximately 1 in 50 years.		As the likelihood of flooding would increase significantly, the condition and extent of reedbeds and marshes is likely to be adversely affected.
Maintain natural processes relating to the sandflats and sand dunes.		The natural processes relating to the sandflats, marshes and sand dunes would largely continue, as in addition to natural sediment feed from updrift areas, maintenance of these features would also be assisted through artificially replenishing sediment losses at the same volumes as the present day.		It is likely that processes relating to the sandflats and dunes would be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments at present day volumes are not likely to 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 would not be adequate to maintain the sandflats and 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 largely maintained through natural processes and assisted through artificially replenishing sediment losses at present day volumes.		It is likely that the condition and extent of the sandflats and dunes is likely to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments are not likely to be adequate to maintain the sandflats and dunes.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats and sand dunes would reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
Agriculture and industry						
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.

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

Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 largely maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches are likely to narrow as beach sediment is replenished at present day volumes, and sea		A diverse tourism economy would be affected as the risk of flooding to settlements and tourism assets would increase, and beaches would narrow significantly as present day replenishment volumes would be insufficient to maintain a viable beach as sea levels rise.		A diverse tourism economy is likely to be heavily affected due to a low standard of protection which is likely to be less than 1 in 20 years as sea levels rise by over 1m. Towns and resorts would be significantly disrupted or abandoned. Tourism assets such as beaches would also be lost.
Infrastructure						
Avoid interruption to the functioning of A111 and A52.		The A111 and A52 would be unaffected by this policy.		Risk of interruption to the functioning of the A111 and A52 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A111 and A52 as the standard of protection is likely to reduce to less than 1 in 20 years.
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, and land drainage pumping stations would remain unaffected by this policy.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to the functioning of pumping stations and other key community services and utilities infrastructure.		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would begin to be impacted by 2025, as beaches would narrow as beach replenishments at present day volumes would be insufficient to maintain the beaches as sea levels rise.		As epoch 1, but with further beach narrowing, and reduction in extent of sand flats and sand dunes.		As epoch 2 with further impacts on the landscape as sea level rise accelerates. Increasingly significant and frequent flooding would alter the landscape and agricultural land would not be maintained and property may become abandoned.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Although longshore transport of sediment would continue, natural coastal processes supplying sediment to other coastlines would begin to be affected as the defence line is held and beach sediment replenishments at present day volumes would be insufficient to fulfil the down drift sediment demands as sea levels rise.		As epoch 1, with effects exacerbated as sea level rise accelerate.		As epoch 2, with further impacts on coastal processes as sea levels rise.
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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 120 records noted by the RCZAs would be at risk, as well as at least 3 Scheduled Monuments and 2 listed buildings.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		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, P3 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		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road transport links to Sutton on Sea and Chapel St Leonards		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of pumping stations and other key community services and utilities infrastructure		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys, and		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become more difficult to maintain as flooding becomes increasingly frequent under this policy.				

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
Make effective use of existing man-made or natural defences.		The current defences would continue to form an effective defence line under a Hold the Line P3 policy.		Defences would continue to be maintained at present day crest heights, however their effectiveness would fall as sea levels rise.		Existing defences would be largely ineffective and would provide a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a 1 in 120 year standard.		Increasing risk to settlements as the standard of protection is likely to fall to less than 1 in 50 years under this policy.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
Natural environment						
Maintain natural processes relating to the sandflats, grazing marshes and sand dunes		The natural processes relating to the sandflats, grazing marshes and sand dunes would largely continue, as in addition to natural sediment feed from updrift areas, maintenance of these features would also be assisted through artificially replenishing sediment losses at the same volumes as the present day.		It is likely that processes relating to the sandflats and dunes would be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments at present day volumes are not likely to be adequate to maintain the sandflats and dunes. Grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but with further interruption to the natural processes relating to the sandflats, sand dunes and grazing marshes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
Maintain and enhance the extent and condition of sandflats, grazing marshes and sand dunes if possible		The extent and condition of the sandflats, sand dunes and grazing marshes would be largely maintained through natural processes and assisted through artificially replenishing sediment losses at present day volumes.		It is likely that the condition and extent of the sandflats and dunes is likely to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments are not likely to be adequate to maintain the sandflats and dunes. Condition and extent of grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats, dunes and grazing marshes would reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
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.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect grade 1 and 2 agricultural land.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.

Character Area 18a: Chapel Point to Skegness objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 largely maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches are likely to narrow as beach sediment is replenished at present day volumes, and sea levels rise.		A diverse tourism economy would be affected as the risk of flooding to settlements and tourism assets would increase, and beaches would narrow significantly as present day replenishment volumes would be insufficient to maintain a viable beach as sea levels rise.		A diverse tourism economy is likely to be heavily affected due to a low standard of protection which is likely to be less than 1 in 20 years as sea levels rise by over 1m. Towns and resorts would be significantly disrupted or abandoned. Tourism assets such as beaches would also be lost.
Infrastructure						
Avoid interruption to functioning of the A52		The A52 would be unaffected by this policy.		Risk of interruption to the functioning of the A52 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A52 as the standard of protection is likely to reduce to less than 1 in 20 years.
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, and land drainage pumping stations would remain unaffected by this policy.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to the functioning of: the sewage works; the Orby windfarm; coastguard lookout stations; and other key community services and utilities infrastructure		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure, would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would begin to be impacted by 2025, as beaches would narrow as beach replenishments at present day volumes would be insufficient to maintain the beaches as sea levels rise.		As epoch 1, but with further beach narrowing, and reduction in extent of sand flats and sand dunes.		As epoch 2 with further impacts on the landscape as sea level rise accelerates. Increasingly significant and frequent flooding would alter the landscape and agricultural land would not be maintained and property may become abandoned.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Although longshore transport of sediment would continue, natural coastal processes supplying sediment to other coastlines would begin to be affected as the defence line is held and beach sediment replenishments at present day volumes would be insufficient to fulfil the down drift sediment demands as sea levels rise.		As epoch 1, with effects exacerbated as sea level rise accelerate.		As epoch 2, with further impacts on coastal processes as sea levels rise.
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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 110 records noted by the RCZAs would be at risk, as well as at least 3 Scheduled Monuments and 4 listed buildings.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		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, P3 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		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting Chapel St Leonards and Ingoldmells with Skegness, Horncastle and Grantham.		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of sewage treatment works, Orby wind farm and other key community services and utilities infrastructure.		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys, and		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become more difficult to maintain as flooding becomes increasingly frequent under this policy.				

Character Area 18b: Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
Make effective use of existing man-made or natural defences.		The current defences would continue to form an effective defence line under a Hold the Line P3 policy.		Defences would continue to be maintained at present day crest heights, however their effectiveness would fall as sea levels rise.		Existing defences would be largely ineffective and would provide a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a 1 in 120 year standard.		Increasing risk to settlements as the standard of protection is likely to fall to less than 1 in 50 years under this policy.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
To maintain Skegness as a viable town and seaside resorts, and also a regional commercial centre throughout the plan period		Skegness would be maintained as a viable town and seaside resort and as a regional commercial centre under Hold the Line P3.		As epoch 1, however increasing risk of flooding would occur as the standard of protection is likely to fall to approximately 1 in 50 years by 2055.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. This would cause Skegness to be unviable as a regional commercial centre and as a town and seaside resort.
Natural environment						
Maintain natural processes relating to the sandflats, grazing marshes and sand dunes		The natural processes relating to the sandflats, grazing marshes and sand dunes would largely continue, as in addition to natural sediment feed from updrift areas, maintenance of these features would also be assisted through artificially replenishing sediment losses at the same volumes as the present day.		It is likely that processes relating to the sandflats and dunes would be affected under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments at present day volumes are not likely to be adequate to maintain the sandflats and dunes. Grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but with further interruption to the natural processes relating to the sandflats, sand dunes and grazing marshes as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
Maintain and enhance the extent and condition of sandflats, grazing marshes and sand dunes if possible		The extent and condition of the sandflats, sand dunes and grazing marshes would be largely maintained through natural processes and assisted through artificially replenishing sediment losses at present day volumes.		It is likely that the condition and extent of the sandflats and dunes is likely to reduce under this policy as sea levels rise and the defence line is held. Artificial beach sediment replenishments are not likely to be adequate to maintain the sandflats and dunes. Condition and extent of grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats, dunes and grazing marshes would reduce under this policy as sea level rise accelerates and the defence line is held. Artificial beach sediment replenishments would not be adequate to maintain the sandflats and dunes.
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.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect grade 1 and 2 agricultural land.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.

Character Area 18b: Skegness objectives for policy appraisal

Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 largely maintained under this policy as the tourist resorts and facilities would be protected against flooding and erosion. Tourism assets such as the beaches are likely to narrow as beach sediment is replenished at present day volumes, and sea levels rise.		A diverse tourism economy would be affected as the risk of flooding to settlements and tourism assets would increase, and beaches would narrow significantly as present day replenishment volumes would be insufficient to maintain a viable beach as sea levels rise.		A diverse tourism economy is likely to be heavily affected due to a low standard of protection which is likely to be less than 1 in 20 years as sea levels rise by over 1m. Towns and resorts would be significantly disrupted or abandoned. Tourism assets such as beaches would also be lost.
Infrastructure						
Avoid interruption to functioning of the A158 and the A52		The A52 would be unaffected by this policy.		Risk of interruption to the functioning of the A158 and A52 would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A158 and A52 as the standard of protection is likely to reduce to less than 1 in 20 years.
Avoid interruption to: the drainage network including: Main, Winthorpe and Catchwater drains		The drainage network, and land drainage pumping stations would remain unaffected by this policy.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to the functioning of key community services and utilities infrastructure		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure, would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The landscape would begin to be impacted by 2025, as beaches would narrow as beach replenishments at present day volumes would be insufficient to maintain the beaches as sea levels rise.		As epoch 1, but with further beach narrowing, and reduction in extent of sand flats and sand dunes.		As epoch 2 with further impacts on the landscape as sea level rise accelerates. Increasingly significant and frequent flooding would alter the landscape and agricultural land would not be maintained and property may become abandoned.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Although longshore transport of sediment would continue, natural coastal processes supplying sediment to other coastlines would begin to be affected as the defence line is held and beach sediment replenishments at present day volumes would be insufficient to fulfil the down drift sediment demands as sea levels rise.		As epoch 1, with effects exacerbated as sea level rise accelerate.		As epoch 2, with further impacts on coastal processes as sea levels rise.
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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 30 records noted by the RCZAs would be at risk.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		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, P3 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,		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting Skegness to Horncastle, Mablethorpe, Grantham and Boston		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of key community services and utilities infrastructure		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys, and		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become more difficult to maintain as flooding becomes increasingly frequent under this policy.				

Character Area 19: Seacroft to Gibraltar Point objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P3 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 P3 would prevent erosion and would protect people and property against flooding through dune and embankment maintenance. However standard of protection against flooding would fall slightly due to sea level rise.		The standard of protection against flooding is likely to fall to less than 1 in 50 years by 2055 due to sea level rise. The risk to people and property and the likelihood of flooding would increase.		The standard of protection is likely to fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number of people and property would by affected by flooding.
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 P3 policy.		Maintenance of dunes and embankments would continue to present day crest heights, however their effectiveness would fall as sea levels rise.		Embankments and dunes would be maintained at present levels but would be largely ineffective due to a low standard of protection because of sea level rise of over 1 metre.
Communities						
Protect all settlements		Hold the line P3 would ensure all settlements were protected to a standard of approximately 1 in 120 years.		Increasing risk to settlements as the standard of protection would fall to less than 1 in 50 years under this policy.		The standard of protection would fall to less than 1 in 20 years due to accelerating sea level rise. By inspection a significant number settlements would by affected by flooding.
Natural environment						
Maintain natural processes relating to the mudflats, grazing marshes, saltmarshes and sand dunes		The natural processes relating to the sandflats, grazing marshes and sand dunes would largely continue, as in addition to natural sediment feed from updrift areas, maintenance of these features would also be assisted through artificial replenishment of sediment updrift at the same volumes as the present day.		It is likely that processes relating to the sandflats and dunes would be affected under this policy as sea levels rise and the defence line is held. Artificial updrift beach sediment replenishments at present day volumes are not likely to be adequate to maintain the sandflats and dunes. Grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but with further interruption to the natural processes relating to the sandflats, sand dunes and grazing marshes as sea level rise accelerates and the defence line is held. Artificial updrift beach sediment replenishments at present day volumes would not be adequate to maintain the sandflats and dunes.
Maintain and enhance the mudflats, grazing marshes, saltmarshes and sand dunes if possible		The extent and condition of the sandflats, sand dunes and grazing marshes would be largely maintained through natural processes and assisted through artificial replenishment of sediment updrift, at present day volumes.		It is likely that the condition and extent of the sandflats and dunes is likely to reduce under this policy as sea levels rise and the defence line is held. Artificial updrift beach sediment replenishments are not likely to be adequate to maintain the sandflats and dunes. Condition and extent of grazing marshes may begin to be affected as the likelihood of coastal flooding would increase.		As epoch 2, but increasingly likelihood that the condition and extent of the sandflats, dunes and grazing marshes would reduce under this policy as sea level rise accelerates and the defence line is held. Artificial updrift beach sediment replenishments at present day volumes would not be adequate to maintain the sandflats and dunes.
Ensure that there are no adverse impacts to the UK's internationally designated sites.		The internationally designated habitats would be largely be maintained by natural processes and the continued artificial replenishment of sediment updrift at present day volumes, however there is the possibility of some detrimental effects as sea levels rise.		Some uncertainty, however it is likely that internationally designated sites would be impacted as sea levels rise and the defence line is held. Artificial updrift beach sediment replenishments at present day volumes would not be adequate to maintain the internationally designated habitats.		Internationally designated sites are likely to be significantly impacted as sea level rise accelerates and the defence line is held. Artificial updrift beach sediment replenishments at present day volumes would not be adequate to maintain the internationally designated habitats.

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

Policy tested: Hold the Line for all epochs along the entire frontage, P3 evaluated.

Objective	Epoch 1 (2025)		Epoch 2 (2055)		Epoch 3 (2105)	
	Score	Explanation	Score	Explanation	Score	Explanation
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.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect grade 1 and 2 agricultural land.
Ensure that the impact on the UK's area of agricultural land is acceptable.		There would be no significant adverse impacts to agricultural land under this policy.		As epoch 1, with some increase in risk of flooding.		By epoch 3 the standard of protection of defences is likely to have fallen to less than 1 in 20 years. This would significantly adversely affect agricultural land.
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 largely maintained thus supporting a diverse tourism economy.		As epoch 1, but an increasing risk of disruption due to an increase in risk of flooding coastal flooding.		Settlements and tourism assets are likely to be at significant risk of flooding. The nature of the tourism economy would change fundamentally as the current drivers such as the beaches would narrow significantly. Habitat losses would begin to occur and this would alter the coastal landscape and affect aesthetics.
Infrastructure						
Avoid interruption to functioning of the A52 and rail network		The A52 and rail network would be unaffected by this policy.		Risk of interruption to the functioning of the A52 and rail network would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of the A52 and rail network as the standard of protection is likely to reduce to less than 1 in 20 years.
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 drainage network, and land drainage pumping stations would remain unaffected by this policy.		Risk of interruption to the functioning of the drainage network and land pumping stations would increase as the standard of protection against flooding would reduce considerably.		There would be significant interruption to the functioning the drainage network and land pumping stations as the standard of protection against flooding is likely to reduce to less than 1 in 20 years.
Avoid interruption to the functioning of pumping stations and other key community services and utilities infrastructure		All key community facilities and utilities infrastructure would be unaffected under this policy.		Risk of interruption to the functioning of key community facilities and utilities infrastructure, would increase as the standard of protection would reduce considerably.		There would be significant interruption to the functioning of key community facilities and utilities infrastructure as the standard of protection is likely to reduce to less than 1 in 20 years.
Landscape						
To maintain and where possible improve the quality of the coastal landscape.		The natural processes would largely continue to shape the landscape. The continued artificial replenishment of sediment updrift at present day volumes would also help maintain the landscape.		A sediment deficit would occur as sea levels rise and updrift artificial beach replenishments would be undertaken at present day volumes. The beaches would narrow and sand dunes and habitats would begin to be interrupted and adversely affected.		Defences would be maintained at present day levels. As sea level rise accelerates there would be more frequent and significant flooding and water would become a more prominent feature of the coastal landscape. Potential for detrimental impacts as property may become abandoned due to flooding. Agricultural land is likely to be unusable due to increasingly frequent coastal flooding. Beaches would reduce in extent and become narrow.
Coastal processes						
To prevent interruption of coastal processes which supply sediment to other coastlines		Longshore transport of sediment would continue. Natural coastal processes supplying sediment to other coastlines would also continue as the open coast defence line consists mainly of natural dunes that act as a sediment store to supply to other coastlines.		A sediment deficit would occur as sea levels rise and updrift artificial beach replenishments would be undertaken at present day volumes. Coastal processes would begin to be interrupted and the volume of sediment supplied to other areas may begin to reduce.		As epoch 2, with further impacts on coastal processes as sea levels rise.

Character Area 19: Seacroft to Gibraltar Point objectives for policy appraisal						
Policy tested: Hold the Line for all epochs along the entire frontage, P3 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.		Possibility of some flood damage to designated or significant historic environment assets as the standard of protection against flooding falls due to sea level rise under Hold the Line P3.		The standard of protection is likely to fall to less than 1 in 20 years, so there would be a significant risk of damage to designated and significant historic environment assets due to flooding. Over 20 records noted by the RCZAs would be at risk, as well as at least 2 Scheduled Monuments and 2 listed buildings.
Ensure coastal defence works do not threaten designated and significant historic environment assets.		Coastal defence works would not threaten designated and significant historic environment assets.		As epoch 1.		As epochs 1 and 2.
Objective - Provide sufficient time, if necessary for;	**Overall Score (all Epochs)**	**Explanation**				
Community adaptation,		The risk to communities would increase rapidly, especially in epochs 2 and 3. There may be insufficient time for some communities to adapt.				
Change of flood risk management practices.		Flood risk management practices would need to change to adapt to increasing flood risk, particularly in epochs 2 and 3.				
Relocation of regional infrastructure, ensuring continued A road and rail transport links connecting the area to Skegness		Large scale relocation of regional infrastructure would be required in epoch 3 and this would require significant time and resources.				
Relocation / adaptation of pumping stations and other key community services and utilities infrastructure		Large scale relocation / adaptation of key community services and utilities infrastructure would be required under this policy, and would need significant time and resources to undertake these works.				
Research of archaeological features and ecological surveys, and		Time available to undertake surveys and research.				
Provision of recreational access to the foreshore.		Recreational access to the foreshore would become more difficult to maintain as flooding becomes increasingly frequent under this policy.				

Annex 1

High level sediment transport check of preferred policy scenario.

Summary of preferred policy packages tested

Following appraisal of policy packages, a high level sediment transport check on the preferred management intent for the frontage was undertaken. The preffered policies tested are as follows:

PDZ1 – Flamborough Head to Easington

Policy package 1.2

- 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 would be applied to 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 would not be maintained indefinitely.

PDZ2 –Easington to Stone Creek

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

- 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 would be considered.

Policy Package 2.2b (Kilnsea to Spurn Point)

- 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 Spurn barrier, only intervening where necessary to assist the healing of breaches, if they occur to maintain access.

PDZ3 – Immingham to Humberston Fitties

Policy Package 3.1

- The defences would be held in their current position and their flood defence function would be maintained. Defences would prevent erosion and would be maintained and upgraded to continue the present standard of protection against flooding despite sea level rise (P4).
- 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 would be appraised in epoch 2 with P4, with the defences held with P4 for epoch 3.

PDZ4 – South of Humberston Fitties to Gibraltar Point

Policy Package 4.1

- The existing alignments of defences would be held, with increasing 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.

	Draft Preferred Policy Scenario		
	Epoch 1 - 2025	**Epoch 2 - 2055**	**Epoch 3 - 2105**
The policy will result in no significant net decline in the sediment supply from the cliffline and foreshore?	Under this scenario sediment supply from the Holderness coast would continue largely unhindered as the large undefended sections would continue to erode. This would help maintain sediment supplied to the areas currently accreting south of the Humber mouth.	Erosion on undefended parts would continue. It is likely that erosion rates on the undefended stretches may increase with sea level rise – this process could mitigate the effects of the defended frontages on sediment supply. The possibility of embayments forming has been discussed, but these are not likely to have the effect of reducing sediment supply from the undefended areas within this epoch timeframe.	As the undefended frontages continue to erode the defended areas would begin to protrude relative to the adjacent undefended sections of the Holderness cliffs. Stable embayments would not form over the SMP timeframe, however there could begin to be some interruption to the sediment supply as the shoreline starts to re-orientate between defended 'hardpoints'. Accelerating sea level rise would help offset these potential reductions as erosion rates would generally increase, helping to ensure that there was no significant net decline in the sediment supply compared to the present day.
The policy will result in no significant net decline in the southwards transfer of coarse sediment from one undefended area of Holderness to the next?	Under this scenario sediment supply from one undefended area to another along the Holderness coast would continue largely unhindered as the sediment would continue to be transported via longshore transport past these defended areas much like the present day.	Sediment would continue to be transported via longshore transport processes from one undefended area to another. The defended areas would begin to trap sediment on their updrift side, however erosion would accelerate on their downdrift side. The net effect would be that there would be no significant impacts to the transfer of sediment southwards.	As the defended sections begin to protrude relative to the eroding undefended areas, the potential for interruption to longshore transport of coarse sediment would increase. The transport of material southwards is expected to continue and sea level rise would increase the erosion rate thus helping to maintain the volume of coarse sediment transport.
The policy will result in no significant net decline in the longshore transport of coarse sediment to Spurn and/or the cross-estuary transport of sands to Donna Nook?	Under this scenario sediment supplied from the Holderness coast to Spurn and across the estuary mouth would continue largely unhindered relative to the present situation.	Sediment would continue to be transported via longshore transport processes to Spurn. The defended areas where erosion would be prevented would begin to trap sediment on their updrift side, however erosion would accelerate on their downdrift side. The net effect would be that there would be no significant impacts to the transfer of sediment southwards.	As the defended sections begin to protrude relative to the eroding undefended areas, the potential for interruption to longshore transport of coarse sediment would increase. The transport of material southwards is expected to continue as sea level rise would increase the erosion rate thus helping to maintain the volume of coarse sediment for transport.
The policy will result in no significant net decline in fine sediment supply and significantly affect the morphological response of the Humber Estuary to Relative Sea Level Rise?	The supply of fine sediment to the Humber would be unaffected by this policy as erosion of the undefended sections of the Holderness cliffs would continue to provide fine sediment which would be transported into the Humber.	The supply of fine sediment to the Humber would be unaffected by this policy as erosion of the undefended sections of the Holderness cliffs would continue to provide fine sediment which would be transported into the Humber.	The supply of fine sediment to the Humber would be unaffected by this policy as erosion of the undefended sections of the Holderness cliffs would continue to provide fine sediment which would be transported into the Humber.
There will be no need for publicly funded coastal defence improvements due to a decline in the "natural" protection provided by, for example, beaches and saltmarshes under this policy?	In this epoch there would be no need for publicly funded coastal defence improvements under this scenario.	There could be a reduction in beaches and saltmarshes infront of defences under this scenario as sea levels rise. This could mean that publicly funded defence improvements could be required to maintain protection as significant upgrades and structures are likely to be required.	It is likely that publicly funded coastal defence works would be required under this policy as saltmarshes and beaches would reduce in quality and extent due to sea level rise and coastal squeeze. New structures and significant structures would be required for in some areas with a Hold the Line policy.

	Draft Preferred Policy Scenario		
	Epoch 1 - 2025	Epoch 2 - 2055	Epoch 3 - 2105
The policy will not result in an increase in risk to people, property and the environment elsewhere?	There would be no significant increase in risk to people, property and the environment elsewhere under this scenario as sediment supplied from the HECAG SMP area would not alter significantly.	There would be no significant increase in risk to people, property and the environment elsewhere under this scenario as sediment supplied from the HECAG SMP area would not alter significantly.	There is the potential for a slight increase in risk to people, property and the environment in other areas as a result of this policy. This is due to the possibility that the sediment supply from this area to adjacent areas could reduce as sea levels rise and the impact of holding the line at different locations along the frontage on sediment are accentuated.
The policy will not result in a need for habitat re-creation to compensate damage or loss caused by changes in sediment supply and transport?	Sediment supply and transport under this policy scenario would not be significantly altered in this epoch and consequently effects on habitats would not be significant . Consequently habitat losses due to the policies would not require compensatory action.	There is a risk that some habitat compensation maybe required as a result of this policy scenario due to the potential for some interruption sediment transport, mainly as a result of local hold the line policies in naturally eroding areas leading to coastal squeeze. Amount of compensatory habitat required likely to be small scale as some of the losses will be offset by accretion to some extent by accretion in areas such as CA14 and CA15.	There is potential that some compensatory habitat maybe required as this policy scenario may begin to have adverse impacts on sediment transport which helps maintain habitats. Effects will increase as a result of accelerating sea level rise causing coastal squeeze.
The policy would cause no adverse impacts to Internationally designated sites in the Wash	In this epoch, this policy scenario would not have any adverse impacts on Internationally designated sites in the Wash compared to the present day as sediment supply and transport would not be significantly altered over this timescale. Due to the distances involved, there would be a considerable lag time between seeing the effects in the Wash due to changes to sediment supply/transport on the Holderness coast.	In this epoch, this policy scenario would not have any adverse impacts on Internationally designated sites in the Wash compared to the present day as sediment supply and transport would not be significantly altered over this timescale. Due to the distances involved, there would be a considerable lag time between seeing the effects in the Wash due to changes to sediment supply/transport on the Holderness coast.	There is the potential that Internationally designated sites in the Wash could begin to be adversely affected due to a relative reduction in sediment supplied to this area due to these policies. However, there is uncertainty due to the potentially different mechanisms that could be used to carry out the policies and the timescales due to the large distances involved between areas of cause and effect.
The policy would cause no adverse impacts to internationally designated sites in the Humber	There would be no significant adverse impacts to internationally designated sites in the Humber in this epoch. Managed Realignment sites identified on the north bank of the Humber would help offset interidal habitat losses occuring due to coastal squeeze from sea level rise.	There would be no significant adverse impacts to internationally designated sites in the Humber in this epoch. Measures identified in the policy would compensate or mitigate interidal habitat losses occuring due to coastal squeeze from sea level rise.	There would be no significant adverse impacts to internationally designated sites in the Humber in this epoch. Measures identified in the policy would compensate or mitigate interidal habitat losses occuring due to coastal squeeze from sea level rise.