The Wash Shoreline Management Plan 2
Strategic Environmental Assessment (SEA)
Addendum to Environmental Report
March 2010

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1 Introduction and background

1.1 The Wash Shoreline Management Plan (SMP)

This document is an addendum to the Strategic Environmental Assessment (SEA) environmental report for the second Wash Shoreline Management Plan (SMP). The Wash SMP2 covers the area from Gibraltar Point to Hunstanton Cliffs. The SEA environmental report, and a number of other assessments referred to within this addendum, are appendices to the SMP (Environment Agency, 2009).

1.2 The SMP context for the SEA

The SEA process to accompany the SMP is intended to ensure a consideration of environmental issues relating to the coast is central to developing and evaluating policy. The **Environmental Report** (Environment Agency, 2009: Appendix L) provides the means to support a structured evaluation of the environmental issues relating to the Wash coastline based on using the assessment criteria developed in the **Scoping Report** (annexed to Environment Agency, 2009: Appendix L). Within the SEA reports, and in the same way as throughout the SMP process (Defra, 2006), the term 'environment' is used to cover the following receptors (as defined by the SEA Regulations):

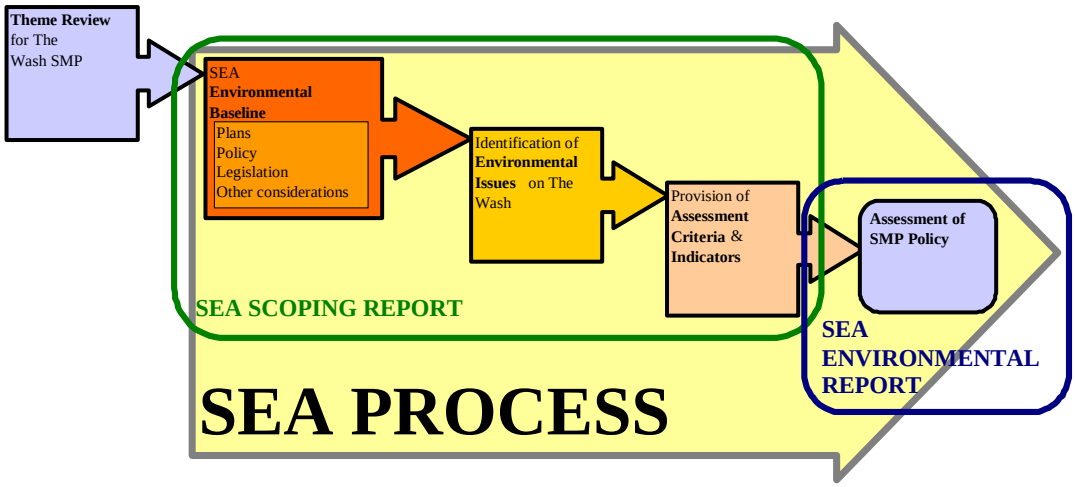
Receptors

- Biodiversity, fauna and flora;
- Population and communities (including human health, critical infrastructure etc);
- Material assets;
- Soil;
- Water;
- Air;
- Climatic factors;
- Cultural heritage, including architectural and archaeological heritage; and
- Landscape.

The role of the environmental report within the SMP SEA process is presented in **Figure 1.1**.

This addendum provides additional information required to supplement and clarify the SEA environmental report. It should be read together with the SEA environment report and as such explanations contained within the environmental report are not duplicated within this addendum.

Figure 1.1 SEA process within the development of a SMP



1.3 Why we are producing an addendum to the Strategic Environmental Assessment (SEA)?

This report is provided as an addendum to the environmental report for the Wash SMP (itself provided as an appendix to the SMP Draft for Public Consultation (Environment Agency, 2009: Appendix L)).

After the environmental report was published, discussions with Natural England and the Environment Agency sought to ensure that the assessment of the SMP under the Habitats Regulations accounted for the uncertainties inherent within a long term strategic plan. This meant that the Habitats Regulations Assessment (HRA) (also known as the Appropriate Assessment) was finalised after the SEA environmental report was published.

This addendum therefore provides an up-to-date account of the assessment tables where they relate to matters influenced by the HRA (assessing the effects on coastal processes, determining effects on the integrity of international sites (sites designated under the Habitats and the Birds Directives and also the Ramsar Convention) and effects on Sites of Special Scientific Interest (SSSIs)). It also incorporates a consideration of the results of an assessment in line with the requirements of the Water Framework Directive (WFD). In addition, the addendum addresses specific points which were raised through the consultation exercise on the draft SMP.

1.4 Specific issues addressed within this addendum

The points addressed within this addendum are detailed below. They respond either to the output of the draft HRA and WFD Assessments, or to specific comments and requests for information received regarding the SEA assessment. **Section 2** addresses the following points.

- **An updated assessment based on the finalisation of the draft HRA (Section 2.2);**
- **Additional information relating to the manner in which the consultation process has driven the SMP process and the SEA (Section 2.3);**
- **An enhanced account of how geology and hydrology have been considered within the SEA (Section 2.4);**
- **An expanded account of how effects of the SMP, and their significance, has been determined (Section 2.5);**
- **A clear expression of how potential cumulative effects with other plans and projects has been assessed (Section 2.6);**
- **A consideration of the impacts of the SMP on receptors informed by the Habitats Regulations Assessment and the Water Framework Directive (Section 2.7); and**
- **A detailed account of the mitigation and monitoring measures required to support the SEA (Section 2.8).**

This addendum should be read in conjunction with the SEA environmental report (Environment Agency, 2009: Appendix L).

2 Considerations additional to the main environmental report

2.1 Scope of additional matters

This addendum updates several elements of the previous assessment as a result of the completion of the draft HRA and Water Framework Directive Assessment for the SMP.

Where the assessment has been updated, and text amended, the assessment tables provided in **Appendix 1a** to this document indicate this using text in italics.

2.2 An updated assessment based on the completion of the draft Habitats Regulations Assessment

The draft (developing) HRA for the Wash SMP Draft for Public Consultation concluded an adverse effect on the integrity of international sites for the plan as a whole. This was due to the lack of certainty relating to the provision of clarifying text for Policy Development Zone (PDZ) 1, stating that a managed realignment policy **may** be provided in Epoch 2 if: an erosional scenario occurs and if the Habitats Regulations are the primary driver for this. Due to the lack of certainty relating to the provision of an MR policy, it was not possible to conclude that there would not be an adverse effect on site integrity.

The HRA concludes no adverse effect for the remaining PDZs.

The detailed assessment of draft SMP policy in each SEA PDZ is provided in Appendix 1 of the SEA environmental report (Environment Agency, 2009: Appendix L).

It is not the intent of the SEA to reproduce the HRA. For the purposes of this addendum the key issue relates to the assessment criteria for each PDZ. This identifies whether implementing the policy in a PDZ would have an adverse effect on the integrity of international sites. This has been provided in the revised tables and confirms that no adverse effect on integrity is expected if an MR policy was pursued for PDZ 1 in the epoch 2 in an erosional scenario. If however, an erosional scenario does develop and a MR policy is not pursued, then an adverse effect would result (through the loss of intertidal habitat) and a major negative score is provided.

Since the production of the draft SMP and the draft HRA, stakeholders have been involved in discussions to finalise the wording relating to the certainty governing the provision of an MR policy, in an erosional scenario for PDZ 1. This is work in progress at the time of writing and is not included within this assessment.

2.3 Additional information relating to the way in which the consultation process has driven the SMP process and the SEA

The way in which consultation has driven and shaped policy development is detailed in Appendix B of the SMP and the SMP Communication Plan (see Environment Agency, 2009). These provide a full account of the content and response to consultation which has not therefore been duplicated in the SEA reports.

2.4 An enhanced account of how geology and hydrology have been considered within the SEA

In developing the scope of the SEA, the focus was on specific environmental issues relating to the Wash. A consideration of all receptors was provided, accompanied by an assessment of how such receptors could be affected by the draft SMP. This consideration was based on an assessment of the characteristics of the area, coupled with a determination of historical and anticipated approaches to coastal defences (as defined by the Baseline Scenario Report within the draft SMP). Theme review documents were also prepared addressing the key receptors considered within the SEA.

It was considered that geology was an issue requiring explicit assessment only on the Hunstanton Cliffs frontage. Along this frontage there is both geological interest and potential policies either preventing or allowing the erosion of that frontage. The assessment criteria for Hunstanton Cliffs are considered to appropriately provide for such considerations.

Elsewhere in the plan, the impacts of draft SMP policy on drift geology and coastal processes are fully covered by a range of assessment criteria, responsive to the issues in the Wash.

2.5 An expanded account of how the significance of effects has been determined

In response to comments received through the consultation process, this section describes the method by which the significance of effects has been established. The specific intention here is to provide greater clarity relating to determining between minor or major effects, and between minor and neutral effects.

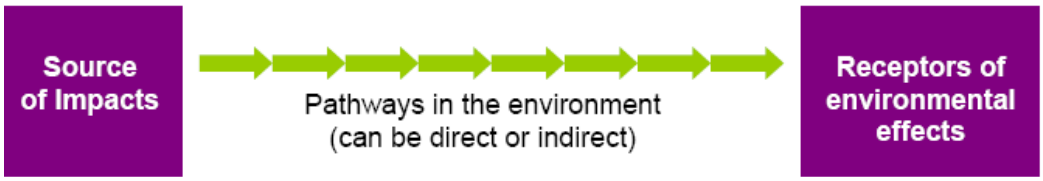
2.5.1 Prediction and evaluation method

This updated assessment has used the same methodology as the SEA environmental report. This methodology is reiterated below, with some

additional text added to clarify how the significance of effects has been established.

The approach is based on the widely-used source-pathway-receptor model (**Figure 2.1**).

Figure 2.1 The source-pathway-receptor model as applied to SEA



The appraisal was a qualitative exercise based on peer-reviewed literature and supported by professional judgement where necessary. It is important to stress that, given the nature of SMP policy (which is high-level and therefore lacks the detail of an actual scheme), the assessment was based on established effects wherever possible, but also relied heavily on expert judgement of anticipated effects. The impact of implementing each draft SMP policy was assessed against each criterion individually and the significance of the effect classified. A short descriptive summary (for example, widespread negative effects with no uncertainty) was also included.

For each draft SMP policy grouping the assessment table included a more detailed justification of the environmental effects and likely significance identified. In particular, the considerations below were important in determining effects and likely significance:

Assessing the significance of effects

- Value and sensitivity of the receptors
- Is the effect permanent / temporary?
- Is the effect positive / negative?
- Is the effect probable / improbable?
- Is the effect frequent / rare?
- Is the effect direct / indirect?
- Will there be secondary, cumulative and / or synergistic effects?

SMP policy is strategic level and directional, intended to support the provision of management actions over the next 100 years. The draft SMP does not provide any specific actions itself. Therefore the intent of policy must form a central consideration in assessing environmental effects as the actual level of effect and the nature of impacts will, to a large degree, rely on the schemes that respond to SMP policy. Several questions (below) were therefore asked in addition to the criteria above.

1) Will SMP policy have any effect on environmental receptors?
2) Will the SMP policy simply lead to existing impacts continuing?
3) Will SMP policy lead to a significant worsening or improvement of existing environmental impacts? Will the intent of the policy lead to a shift in management where the significance of the effect will change?

Future schemes will also be subject to environmental assessment (under national and international legislation), and this is acknowledged in the wording of the assessment criteria in the SEA. An account of how the significance criteria have been applied is given in **Table 1**. This is followed by a more detailed description of some of the more complex assessment criteria: threats to biodiversity; assessment of international sites; UK Biodiversity Action Plan (BAP) habitat; SSSIs; the Water Framework Directive; protection of coastal settlements; protection of historic assets; and impacts on the coastal landscape.

Table 1 Decision-making in the assessment of significance

SMP Objective	SEA Assessment Criteria	Significance Criteria
Threats from tidal inundation to approximately ten percent of the nation's high quality agricultural land		
Protect as much grade 1 and grade 2 agricultural land as possible.	Will SMP policy result in a change in extent of grade 1 and 2 agricultural land?	If the policy provides for long term security of grade 1 and 2 agricultural land then an assessment of neutral or minor positive has been provided. A key aspect of this assessment is the degree to which existing defences will offer long term protection in response to sea level rise, or whether additional defence works would be required to address the effects of sea level rise. If additional works would be required, the policy would provide for enhanced defence provision to maintain the same levels of risk – and a minor positive score would be appropriate*. Equally, where loss is anticipated, the effects of policy have been considered minor negative if the loss is considered largely due to the effects of sea level rise or major negative if such loss was due to active breaches of defence or realignment in response to SMP policy. ***This principle of scoring minor positive or negative based on the effect of policy coupled with the effects of sea level rise underpins many of significance decisions in this assessment. It is central to many of the assessments below, but is not repeated.**
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise		
Avoid interruption of the drainage function of Rivers Witham, Welland, Nene and Great Ouse throughout the plan period	Will the SMP policy result in a change to the drainage function of discharging rivers?	Where the effect of policy would actively change the function of discharging rivers, a determination would be based on whether this would lead to systemic changes in the river (in which case a major score would be required) or would be limited to localised effects (in which case a minor score would be appropriate). This principle applies to either positive effects (which would enable rivers to continue providing a drainage function) or negative effects (which would prevent this).
Protect as a minimum, throughout the plan period, to an appropriate standard of protection, all established 'strategic pubs and churches settlements' and the area landward from these settlements	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	The assessment here is underpinned by the principle outlined above (*). Major scores (either positive or negative) would be provided where the effect of policy would be to either enhance or reduce the actual level of protection offered, accounting for sea level rise. Minor positive scores would be provided where the policy maintains the level of defence, by increasing the actual defence offered by sea walls to account for sea level rise. This is considered a minor positive rather than a neutral effect since, as a result of the policy, subsequent actions would maintain levels of defence for coastal communities.
Protect as many settlements as possible		
Provide sufficient time, if required, for community adaptation		

SMP Objective	SEA Assessment Criteria	Significance Criteria
Avoid interruption of the functioning of Boston Port and King's Lynn Port throughout the plan period (note that Sutton Bridge Port is only dealt with in the relevant Timing of Policies Objective, and does not have an individual Objective)	Will the SMP policy affect the access to operation of ports?	If the intent of policy is considered to lead to additional works or operations to existing defence structures (to maintain the function of ports in response to sea level rise), then a minor positive score would be provided. If the action of policy would require the provision of new structures then a major positive score would be provided. Negative scores would be offered where the effect of policy would be to remove or reduce existing levels of defence (major negative) or to maintain structures but not improve them in response to sea level rise (minor negative or neutral).
Provide sufficient time, if required, for adaptation of Sutton Bridge Port		As above
Avoid interruption of transport connections and utility supply throughout the plan period – **ROADS (where present)**	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Where SMP policy would maintain the presence of a road, a minor positive score would be provided. Where the policy provides for enhanced levels of protection for a road (which may come under threat from erosion or sea level rise) then a major positive score may be provided. Typically, however, SMP policy seeks to maintain such features by holding existing lines, possibly requiring improvement to defences (to address sea level rise). Under such a scenario, a minor positive score would be provided. Where a road would be lost as a result of policy, the determination would consider whether the entire function of the road would be lost (major negative) or whether it could be maintained by providing an amended route (minor negative).
Avoid interruption of transport connections and utility supply throughout the plan period – **PRISON (where present)**	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	The same principle as per roads above
Avoid interruption of transport connections and utility supply throughout the plan period – **RAILWAY LINE (where present)**		The same principle as per roads above
Provide sufficient time, if required, for recreational access to the foreshore	Will the SMP policy result in a change to key tourism and recreation features?	Where tourism or recreational features are maintained, a minor positive score would be provided, if policy maintains this protection in response to sea level rise. If the plan provides for additional levels of protection, then a major positive score would be provided. Losses would be scored as minor negative if the features lost would still maintain the overall tourism or recreational function or major negative if the loss would lead to a substantive reduction on tourism or recreational activity in that area.
To maintain the integrity of the coastal landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	In establishing the effects on the coastal landscape, considerations are based on the maintenance or loss of key features which contribute to the landscape (heritage assets, habitat, key landmarks, etc), and the need to ensure that the specifics of the dynamic behaviour of the coast are maintained. In the case of

SMP Objective	SEA Assessment Criteria	Significance Criteria
		the Wash, this would entail maintaining a balance of large areas of low energy coastal foreshore, with localised more dynamic areas around river mouths and on the foreshore at Hunstanton Cliffs. Where a policy would lead to the loss of significant features within the coastal landscape a major or minor negative score would be provided, depending on the extent of the effects of such a loss. Where policy would enable the coast to function 'naturally' (as above) or would enable key features to be maintained, the policy would be minor positive. A major positive score would be provided where the effects of policy would lead to the loss of features, or processes which actively detract from the coastal landscape.
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise		
Maintain and if possible increase the area of mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**	Will SMP policy result in a change to conditions of European sites or habitats?	If the effect of policy would lead to an adverse effect on the integrity of an international site (as defined through a statutory HRA) then a major negative score would be provided. A minor negative score would be provided if the effects of policy would not prevent an adverse effect from occurring based on impacts of coastal processes or sea level rise (effectively resulting in an indirect adverse impact). Minor positive scores would be provided where the effects of policy would prevent an adverse effect from occurring through maintaining an existing policy position or coastal process trend. The provision of a new management position (for example from HTL to MR) to avoid an adverse effect would provide a major positive score.
	Will SMP policy result in a change to SSSI condition?	For SSSIs the same principles above would apply, however due to the nature of management obligations under the Countryside and Rights of Way Act major negative scores would only be provided where the effects of policy would cause a site to move into unfavourable condition.
	Will SMP policy result in a net change in priority BAP habitat extent?	Given that nearly all BAP habitat in this area is priority habitat, the principle guiding the assessment is one of no overall net loss of BAP habitat. Where there is no net loss of BAP habitat, scores would be provided as positive based on the degree to which policy maintains a natural balance of BAP habitat in a dynamic context. Major or minor negative scores would be provided where the effects of policy would lead to a loss of BAP habitat (the actual determination of major or minor is based on the extent of loss, considered within the context of the overall extent of habitat in the system).

SMP Objective	SEA Assessment Criteria	Significance Criteria
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types		
Have as little flood and erosion risk management throughout the plan period as possible	Will the SMP policy result in a change in the operation of coastal processes?	Where SMP policy would enable natural coastal processes a positive score would be provided. If the policy provides for a shift in management (from the present position) that would actively enable a more natural development of the coast, a major positive score would be provided. Where the effects of policy would provide for a continuation of management which supports coastal processes a minor positive score would be provided. Negative scores would be provided for ongoing management which prevents the development of natural coastal processes (minor negative) or provides for a shift in management which would not work with coastal processes (major negative).
Maintain natural processes relating to sand and shingle shorelines mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**		
Maintenance of environmental conditions to support biodiversity and the quality of life		
	Will SMP policy result in changes to features covered by local WFD objectives?	The assessment is supported by the content of the separate WFD assessment (Environment Agency 2009: Appendix K). Scores are based on a summary of how well the policy meets WFD requirements.
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in the Wash		
Provide sufficient time, if required, for research of archaeological features	Will the SMP policy result in a change to designated and non-designated historic features?	Where policy would lead to the loss a designated heritage asset (defined in the environmental report) a negative score would be provided. A major negative score would be provided if the effect of policy would be to actively shape management in a new direction leading to such a loss. A minor negative score would be provided for the loss of assets in locations where defence may not be sustainable, or where previous management practice is maintained which may lead to the loss of assets which have come under threat. Minor positive scores would be provided for policy which protects assets as a continuation of management in response to sea level rise. Major positive scores would be provided for new management directions specifically to protect heritage assets.

2.5.2 Additional considerations:

Threats to biodiversity

As well as the issues relating specifically to significance (spatial or temporal effects etc), the assessment was based on a consideration of whether the PDZ would either continue to have positive or negative effects on habitat or species or would lead to an improvement or worsening of such effects.

If the effects of policy were assessed as being significant and that the policy would continue the trend of existing management (for example to hold the line) then a score of either minor positive or negative would be likely. If the effects were considered extremely significant and/or if the policy would lead to an active shift in management direction (for example from hold the line to managed realignment), a major positive or negative score would be likely. The actual assessment is therefore a composite of significance as defined by the nature of the effects and the direction of management (in response to sea level rise).

Assessment of international sites

With regard to the assessment of effects on international sites, this must be informed by the separate HRA (Environment Agency, 2009: Appendix M).

International sites in the context of this assessment are determined as:

- Special Areas of Conservation (SACs) under the Habitats Directive;
- Special Protection Areas (SPAs) under the Birds Directive; and,
- Sites designated under the terms of the Ramsar Convention.

This part of the SEA is unique, as the assessment is based on a firm legal requirement to comply with the Habitats Regulations in determining the effect of policy on the integrity of international sites. PDZs where there would be an adverse effect on the integrity of an international site are therefore considered to have a major negative effect. If the policy is to continue existing management which is expected to have no effect on the integrity of international sites (but is maintaining such integrity – for example by a hold the line policy that protects a freshwater feature), then a minor positive impact would be recorded. If the policy provides for a shift in management to avoid adverse effects on integrity (for example from hold the line to managed realignment to offset adverse effects) then a major positive effect would be provided.

A further consideration in this assessment is that the HRA must be on the plan as a whole, alone and in-combination with other plans and projects. This is reflected in the assessment tables, which link directly to the HRA.

This additional element of the assessment, which reflects the completed draft HRA, is provided in this addendum.

UK Biodiversity Action Plan (BAP) habitat

When assessing effects on BAP habitat, the approach was similar to that applied to assessing international sites and SSSIs above (ie considerations included management, and whether current regimes were continued or altered, and the actual effects). A key factor was the nature of BAP habitats on this coast, which are priority BAP habitat. They include:

- Coastal flood plain and grazing marsh;
- Coastal saltmarsh;
- Coastal vegetated shingle;
- Intertidal mudflats;
- Saline lagoons;
- Subtidal sands and gravels; and
- Tide swept channels.

Within the context of the Wash and the intent to ensure that there is a natural development of coastal habitat, the principle is one of 'no net loss' of BAP habitat in the plan area. It would not be appropriate at the BAP level to provide further assessment of the relative importance of different habitats. As a result, assessment at the PDZ level addressed whether there would be a net loss of BAP habitat. Again, this decision was supported by the significance of continued management or active shifts in management (and effects) within the SMP.

Sites of Special Scientific Interest (SSSI)

The key factor in the assessment of the SMP was whether it would lead to SSSIs falling into or moving towards unfavourable condition. This assessment (through discussion with Natural England) was then evaluated with regard to the direction of management outlined above. Minor scores were provided where the plan provided a continuation of existing conditions and major scores were reserved for where shifts in management would lead to a significant change in the scale of effects.

An additional consideration in PDZ 4 is the impact of policy on the cliffs at Hunstanton. The cliffs are designated for geological reasons, and their favourable condition is dependent on the erosion of this frontage. This matter is explicitly addressed in the SMP document and an assessment of policy is detailed in Appendix 1a of this addendum.

The Water Framework Directive

The assessment provided in the SEA environmental report was guided by the WFD assessment provided for the draft SMP (Environment Agency, 2009: Appendix K). Consideration of the WFD within the SEA draws upon the overall WFD assessment, which summarised effects at the PDZ level, rather than on the individual, management area assessments.

Protection of coastal settlements

The assessment of coastal settlements is provided on the basis described above with regard to the direction and scale of effects of policy. Additional considerations relate to the loss or retention of features that are considered important to coastal communities, their sustained existence and the quality of life provided. The assessment not only considered how significant a given feature or collection of features were (locally, nationally or internationally) but also considered the extent of the feature and the degree to which communities depend on it. The assessment also included a consideration of the overall effects within the policy unit.

If, for example, a given policy unit (through a hold the line policy) protected a community and the features it contained, but also led to the loss of an identified feature (such as a footbridge) the assessment would include an appraisal of the overwhelming positive effects in the unit, despite the one loss. Equally, the loss would be considered in this context in terms of its function, how important the bridge was to the community, what access it provided, what activities it supported and whether the same function could be provided in some other way. It did not follow therefore, that the loss of a feature would automatically lead to a negative assessment as the other positive effects within the unit would be considered.

Protection of historic assets

The assessment of historic assets followed the same logic as that of the assessment of coastal settlements outlined above. However, with regard to historic assets there is a need to consider both known, designated features (listed buildings, scheduled monuments etc) and unknown archaeological assets. The approach taken was to offer a precautionary assessment (based on the likely presence of unknown assets) and to conclude a minor negative score if a designated asset was lost. The outstanding matter of unknown assets will be addressed in the action plan for the draft SMP, where any managed realignment activity will be undertaken in consultation with English Heritage to ensure that time and resources are provided for site investigation. The driver within the draft SMP to protect designated heritage assets did, however, restrict the loss of any designated assets within the plan.

Impacts on the coastal landscape

The assessment of effects on the coastal landscape was provided by a qualitative consideration of the features and factors (such as dynamic coastal change) that were considered important to the local coastal landscape. The intent was to determine whether the loss of a feature was important in the context of the landscape and how important the requirement to include a dynamic coast was to the landscape of Wash. Within this context, natural and man-made features were considered with regard to their contribution to the landscape – a landscape typified by historic settlements, modified creeks and dynamic natural features such as dunes or shingle habitat. The

appraisal provided minor scores based on the direction of management and the actual effect, with major scores being reserved for where the draft SMP took the form of the landscape in a different direction (either through the loss of features or changes to the degree of dynamism on the coast).

2.5.3 The framework for consideration of the significance of the effects of the draft SMP

On the basis of this approach to the assessment, the scoring was provided in the assessment tables as follows:

Table 2 Environmental impact significance categorisation

Significance of SMP policy	
	SMP policy is likely to result in a significant positive effect on the environment.
	SMP policy is likely to have a positive or minor positive effect on the environment (depending on scheme specifics at implementation).
	SMP policy is likely to have a neutral or negligible effect on the environment.
	SMP policy is likely to have a negative or minor negative effect on the environment (depending on scheme specifics at implementation).
	SMP policy is likely to have a significant negative effect on the environment.
	The relationship between the SMP policy and the environment is unknown or unquantifiable.
	The assessment criterion does not apply to the SMP policy.

2.6 Consideration of potential cumulative effects with other plans and projects

The key issue for this assessment, as identified in the SEA scoping report and the SEA environmental report, relates to ensuring that the effects of the draft SMP are not cumulative or synergistic with other plans or projects. The critical factor is the identification of common effects or linked effects.

In the course of the SEA assessment, the land use plans in and around the Wash were examined to establish if areas could be found where there were clear links between, the effect of SMP policy and the effect of land use policy. No such examples were found. The nature of SMP policy (providing high level strategic direction for shoreline management) is so different in its scope and context to land use plans, that no cumulative effects could be identified for consideration.

The scope of the range of other plans and projects considered is described below.

The Wash is bounded by four local authorities; these being West Norfolk and Kings Lynn Borough Council, South Holland District Council, Boston Borough Council and East Lindsey District Council.

Current planning policy for West Norfolk and King's Lynn District Council is defined by saved policies from the previous Local Plan (as confirmed by the Secretary of State in July 2009), with additional reference to national planning policy. The Core Strategy proposed submission document, which once adopted will form part of the Local Development Framework (LDF), is currently open for public consultation. It is intended that this new plan will be adopted in 2011. West Norfolk and King's Lynn is covered by the East of England Plan, adopted May 2008.

For South Holland District Council, the current planning document is the Local Plan 2001-2021, which was adopted in July 2006. The regional plan covering this area is the East Midlands Regional Plan, adopted in March 2009.

Boston Borough Council is also developing its LDF which will include Core Strategy policies. Currently planning policy is implemented using a non-statutory 'Interim plan', adopted following the withdrawal of the re-deposit draft Local Plan under direction of the Secretary of State in 2007, and national policy. Discussions are underway with South Holland District Council for a combined replacement planning document. The regional plan covering this area is the East Midlands Regional Plan, adopted in March 2009.

East Lindsey District Council is currently developing its Core Strategy document (within the developing LDF) that closed for consultation in December 2009. When adopted (intended to occur in 2011), it will replace the current document, the East Lindsey District Council Local Plan. This was adopted in 1995 and updated in 1999. The regional plan covering this area is the East Midlands Regional Plan.

2.7 A consideration of the impacts of the SMP on receptors informed by the Habitats Regulations Assessment and the Water Framework Directive

This addendum provides an update of the SEA environmental report in response to the findings of the HRA and the Water Framework Directive assessment. These two separate processes were based on detailed discussions between Natural England and the Environment Agency, and the updates are described below. Whilst they are not addressed within the HRA, the effects of the SMP on non-Habitats Directive features were additional matters for discussion and are also addressed below.

2.7.1 Impacts on International Sites.

The development of policy in the Wash was shaped in response to the requirements of the Habitats Regulations. The critical issue was the need to maintain Wash coastal defences despite sea level rise potentially leading to the loss of intertidal habitat though coastal squeeze. This matter is complicated by the fact that, over timescales within which the impacts of sea level rise become significant, there is no scientific agreement on whether the Wash will accrete (with no loss of inter-tidal habitat) or erode (leading to the loss of saltmarsh and mudflat – which is designated habitat within the Wash SAC and important supporting habitat for the Wash SPA).

The draft SMP therefore provides for two possible policy options. This allows the possibility of MR being selected in Epoch 2 if an erosional scenario develops. The assessment within this addendum is based on the consultation draft SMP which provides the caveat for a MR policy. In this assessment (and in the HRA) the impacts of not pursuing an MR policy in an erosional scenario must also be assessed since the Habitats Regulations require certainty in discounting adverse effects. Wording in the consultation draft SMP does not provide this certainty.

The key frontage affected is PDZ1. Based on the lack of certainty regarding the pursuit of either a HTL or MR policy in Epoch 2, when an erosional scenario may occur, the HRA and this assessment has scored major negative if a HTL policy is selected. If a MR policy is selected (due to the significant shift in coastal management required) a major positive effect is concluded.

The remainder of the policies within the SMP will have an overall neutral effect on international sites.

2.7.2 Impacts on Sites of Special Scientific Interest (SSSIs).

Since international sites are underpinned by SSSIs, a consideration of the effects on international sites is intrinsically linked to a consideration of effects on SSSIs. The legislation relating to SSSIs (The Countryside and Rights of Way (CRoW) Act, 2000) differs in the degree and manner to which impacts are established, and the sites themselves may be designated for different habitats or features. In the Wash, Hunstanton Cliffs SSSI is designated for geological reasons.

The effects on intertidal features within the Wash are however consistent between SSSIs and international sites. The SEA assessment therefore agrees with the assessment for international sites with two exceptions:

- The Epoch 2 issues discussed under international sites above, have been scored minor negative and not major negative in the event that a HTL policy is pursued, in an erosional scenario. This is due to the

impacts of such an action requiring a response under the CRoW Act, to avoid sites falling into unfavourable condition through coastal squeeze. However, this process is less stringent than under the Habitats Regulations where the reverse burden of proof, requires evidence of 'no adverse effect' in order to pursue policy.

- At Hunstanton Cliffs the potential HTL policy in Epoch 3 (an optional policy based on erosion rates) has the potential to prevent erosion of the cliffs at Hunstanton. Accordingly this could lead to the site falling into unfavourable condition. Where this option is pursued in Epoch 3, a minor negative score was assigned.

2.7.3 Impacts on Biodiversity Action Plan (BAP) habitat

The assessment of BAP habitat is based on ensuring no net loss of BAP habitat throughout the plan period. The habitats are considered to be of equal value and therefore loss of saltmarsh habitat due to a gain of mudflat habitat is not classed as a negative effect. The issues relating to BAP habitat closely relate to international sites and SSSIs. Impacts on BAP habitat are consistent with those for SSSIs (with the exception of Hunstanton Cliffs, where the effect on BAP habitat is neutral).

The overall effect on BAP habitat is therefore neutral across the plan area, with the exception of the Epoch 2 management option for PDZ 1, where the policy is currently being revised to prevent any negative effect.

2.7.4 Impact on Water Framework Directive Features.

The effects of the plan on issues relating to the Water Framework Directive are limited, due to the nature of the plan, which seeks to maintain existing defence at the estuary mouths for water bodies which enter the Wash and to respond to the effects of sea level rise on the Wash.

As outlined under the HRA, the plan was assessed on the consultation draft policies where the caveat attached to PDZ1 policy for Epoch 2 did not specify the pursuit of MR in the event of an erosional scenario. Greater certainty is expected to be added to the final SMP, which will avoid impacts of coastal squeeze, should the Wash develop an erosional state in later epochs.

In line with guidance (Environment Agency, 2009b) retrospective WFD assessments, where the draft SMP policy has largely been developed, are intended to identify the potential for particular draft SMP policies to deliver or compromise the Directive's environmental objectives. It also identifies issues that should be considered during strategy or scheme development, as well as in future SMPs.

Although the (retrospective) WFD assessment only considered the preferred policy options (and did not assess all alternatives since there was little

opportunity to affect policy choice), impacts of the preferred policies were considered either neutral or minor positive. It follows, therefore, that no negative effects are anticipated in response to water based receptors.

2.8 A detailed account of the mitigation and monitoring measures required to support the SEA

The draft SMP is a high level assessment with limited policy options. Within the scope of this assessment only limited potential negative effects have been established. None of these could be addressed through mitigation. However, ongoing monitoring will be required to establish the response of the system to management and sea level rise.

Within this draft SMP, the critical monitoring requirement is that of coastal processes within the Wash to establish whether the system will accrete or erode in later epochs of the plan. This understanding is central to the provision of policy (especially in PDZ1) which may avoid potential negative effects. This monitoring programme will be secured through the SMP Action Plan, which is currently under development.

Monitoring processes will shape the future management of the majority of the Wash and determine whether future impacts will be due to the maintenance or removal of defences. This will in turn establish if monitoring will need to target intertidal or terrestrial areas.

Should, an erosional scenario develop in epoch 2, then compensation will be provided under the Habitats Regulations, either through adoption of a MR policy in the Wash, or habitat creation elsewhere.

Monitoring will also need to be provided by the collaborative management approach developed for PDZ2 adjacent to Snettisham lagoons. The intent here will be to establish the impacts of coastal processes on habitat seaward of the defence line and on the behaviour of the shingle ridge. The specifics of such management will need to be agreed. The SMP will, however, stipulate the need for such management through the SMP Action Plan.

The specification of monitoring to avoid negative impacts or to identify unforeseen impacts of the SMP is difficult to establish. It is the nature of the SMP that the existing line will be held (within Epoch 1) for the majority of the plan area. Effects are therefore limited to impacts on receptors seaward of defences. Monitoring is defined above. In PDZ4 where the policy is NAI adjacent to Hunstanton Cliffs, monitoring will be required to establish the rate and nature of erosion. This will also be specified in the SMP Action Plan.

Monitoring of landward receptors may be required if a MR policy is adopted developed for PDZs 1 and 2 in later epochs. However, realignment schemes

will be supported by a full environmental impact assessment, HRA and other assessments to determine and avoid environmental effects.

It is considered therefore that the monitoring requirements to support this assessment are limited to establishing the effects of coastal processes in response to policy and sea level rise and in determining the effects of erosion at Hunstanton Cliffs.

3 Next steps

This addendum seeks to provide an update to the SEA environmental report published as Appendix L to the draft Wash SMP (which was consulted on between 12th October 2009 and 15th January 2010. In providing both the SEA environmental report and this addendum for consultation, the intent is to establish whether the assessment has provided an accurate account of the environmental impacts of the draft SMP on the environment of the Wash.

Any comments on this addendum to the SEA environmental report should be provided to:

Onoriode Iboje
Project Manager, the Wash SMP
Strategic and Development Planning
Environment Agency
Goldhay Way,
Orton Goldhay,
Peterborough
PE2 5ZR

The consultation period runs from 1st April 2010 for a period of 3 weeks. All comments on this addendum to the SEA environmental report should be received by 5pm on 22nd April 2010.

4 References

Defra (2006) *Shoreline Management Plan guidance: Volume 1: Aims and Requirements: March 2006*. Department for Environment, Food and Rural Affairs, London, UK.

Environment Agency (2009) *The Wash Shoreline Management Plan 2. Gibraltar Point to Old Hunstanton. Draft for Public Consultation*. October 2009.

Environment Agency (2009b) *Assessing shoreline management plans against the requirements of the Water Framework Directive. Guidance and background information. Reference number: GEHO0309BPTH*. Environment Agency, Bristol.

A number of documents referenced in this addendum were appendices to The Wash SMP draft for consultation (Environment Agency, 2009). These are:

- Appendix K: Water Framework Directive Assessment;
- Appendix L: Strategic Environmental Assessment. Environmental Report (the Scoping Report is an annex to this); and
- Appendix M: Habitats Regulations Assessment.

The reader is directed to the main SEA Environmental Report (Environment Agency, 2009: Appendix L), which should be read together with this addendum.

Appendix 1A

Environmental assessment

(Updated to include the effects on international sites as informed by the draft Habitats Regulations assessment for the SMP)

Text in *italics* indicates the assessment that has been updated since the issue of the original Wash SMP2 Strategic Environmental Assessment environmental report, following the production of the draft Wash SMP2 Habitats Regulations Assessment (Appropriate Assessment) report (Environment Agency, 2009: Appendix M).

The assessments in the following pages are also colour-coded, as described in **Table 2** (above) which is duplicated here for convenience

Significance of SMP policy	
	SMP policy is likely to result in a significant positive effect on the environment.
	SMP policy is likely to have a positive or minor positive effect on the environment (depending on scheme specifics at implementation).
	SMP policy is likely to have a neutral or negligible effect on the environment.
	SMP policy is likely to have a negative or minor negative effect on the environment (depending on scheme specifics at implementation).
	SMP policy is likely to have a significant negative effect on the environment.
	The relationship between the SMP policy and the environment is unknown or unquantifiable.
	The assessment criterion does not apply to the SMP policy.

Table 1A.1 **PDZ 1 Epoch 1**

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Threats from tidal inundation to approximately ten percent of the nation's high quality agricultural land						
Soil	**Agriculture**	Protect as much Grade 1 and Grade 2 land as possible	Soil and agricultural land quality	Will SMP policy result in a change in extent of Grade 1 and 2 agricultural land?	Amount of Grade 1 and Grade 2 agricultural land available	Policy (HTL): SMP policy will not lead to loss of any Grade 1 or 2 agricultural land within this PDZ within epoch 1. Therefore minor positive.
Soil	**Agriculture**	Ensure that the impact on the UK's area of Grade 1 and Grade 2 land is acceptable: ensure that there is at least X area in Epoch 1 / 2 / 3	Soil and agricultural land quality			Alternative (MR): Alternative policy would lead to loss of Grade 1 and 2 agricultural land. Therefore minor negative.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Water	**Infrastructure**	Avoid interruption of the drainage function of Rivers Witham, Welland, Nene and Great Ouse throughout the plan period	Hydrology and water resources	Will the SMP policy result in a change to the drainage function of discharging rivers?	Number of rivers with impacted drainage function	Policy (HTL): SMP policy will not lead to a change in the drainage function of discharging rivers. Therefore neutral.
						Alternative (MR): SMP policy will not lead to a change in the drainage function of discharging rivers. Therefore neutral.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Population, human health	**Communities**	Protect as a minimum, throughout the plan period, to an appropriate standard of protection, all established 'strategic pubs and churches settlements' and the area landward from these settlements	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of established "strategic pubs and church" settlements impacted	Policy (HTL): SMP policy ensures no "strategic pubs and church" settlements are impacted and will not increase flood and erosion risk to coastal communities. Standard of defence will be maintained at or above current standard, therefore minor positive.
						Alternative (MR): A MR policy would ensure that no "strategic pubs and church" settlements would be impacted and would not increase flood and erosion risk to coastal communities, as standard of defence would be maintained at or above current standard, therefore minor positive.
Population, human health	**Communities**	Protect as many settlements as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): SMP policy ensures no additional properties lie within the tidal flood zone in comparison to the current number. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
						Alternative (MR): Within epoch 1, a MR policy would ensure that no properties lie within the tidal flood zone in comparison to the current number. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
Material assets	**Communities**	Protect as many settlements as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): SMP policy would ensure that local infrastructure and assets (roads and access to foreshore) are maintained. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
						Alternative (MR): MR would lead to the loss of local infrastructure and assets (roads and access to foreshore). Although flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, this is scored as minor negative.
	Timing	Provide sufficient time, if required, for community adaptation	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?		Policy (HTL): SMP policy would ensure that time is allowed for adaptation of coastal communities. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
						Alternative (MR): MR would ensure that areas of agricultural land (with concomitant economic benefits) would be lost within the first epoch. This is therefore scored, on balance, as a minor negative.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of the functioning of Boston Port and King's Lynn Port throughout the plan period (note that Sutton Bridge Port is only dealt with in the relevant Timing of Policies Objective, and does not have an individual Objective)	Critical infrastructure	Will the SMP policy affect the access to operation of ports?	Number of ports impacted	Policy (HTL): SMP policy would not affect the access to operation of ports, therefore maintaining the benefit of the ports to the local, regional and national economy. This is therefore scored as minor positive.
						Alternative (MR): MR would be designed so that there would be no impact on affect the access to operation of ports, therefore maintaining the benefit of the ports to the local, regional and national economy. This is therefore scored as minor positive.
Material assets	**Timing**	Provide sufficient time, if required, for adaptation of Sutton Bridge Port	Critical infrastructure	Will the SMP policy affect the access to operation of ports?	Number of ports impacted	Policy (HTL): SMP policy would not require adaptation of Sutton Bridge port within epoch 1. This is therefore scored as minor positive.
						Alternative (MR): MR would not impact Sutton Bridge port within epoch 1, as scheme would be designed to ensure no impact. This is therefore scored as minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **ROADS (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): SMP policy will ensure that there is no change in flood or erosion risk to key roads within this PDZ (A52, A17, A16, A149 & A-roads in settlements) and will ensure that the minor road network linking the coast with these roads are maintained in situ. This is therefore scored as minor positive.
						Alternative (MR): Although a MR policy would maintain the key road network surrounding The Wash in this PDZ (A52, A17, A16, A149 & A-roads in settlements), the minor road network linking the coast with these roads would be impacted. As such, this is scored minor negative.
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **PRISON (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): SMP policy with ensure that HMP North Sea Camp is maintained in situ, with no increase in flood or erosion risk. This is therefore scored as minor positive.
						Alternative (MR): HMP North Sea Camp is located next to the coast. However, realignment within this PDZ would not be a feasible option for this area. This is therefore scored as minor positive.
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **GEDNEY MARSH WIND FARM**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): HTL policy would maintain Gedney Marsh wind farm in situ. Therefore minor positive.
						Alternative (MR): Any MR scheme would be designed to maintain Gedney Marsh wind farm in situ. Therefore minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Timing**	Provide sufficient time, if required, for recreational access to the foreshore	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): SMP policy will maintain the network of roads and rights of way currently in situ. Recreational features would also be maintained. This is therefore scored as minor positive.
						Alternative (MR): Although SMP policy will maintain major roads and rights of way, minor roads may be lost. However, any roads which may be lost would be those linear to the coast and access to the coast would be maintained. Recreation features may be increased due to the MR policy, therefore minor positive.
Landscape	**Landscape**	To maintain the integrity of the coastal landscape	Landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	Quantitative judgement	Policy (HTL): SMP policy will not lead to the loss of features considered significant to the landscape. This is therefore scored as neutral.
						Alternative (MR): A MR policy will not lead to the loss of features considered significant to the landscape. This is therefore scored as neutral.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise						
Biodiversity, flora and fauna	**Habitats**	Maintain and if possible increase the area of mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**	Habitats and species	Will SMP policy result in a change to conditions of European sites or habitats?	Number of European sites and habitats impacted based on Habitats Regulations assessment .	*(Policy HTL) The SMP policy of HTL in the first epoch is not considered likely to lead to any adverse effect on the integrity of any international site. The effect is therefore neutral.*
						Alternative (MR) The effects of an MR policy were not assessed (in the absence of any such requirement) in the Habitats Regulations Assessment. The effect of such a policy in epoch 1 however is considered likely to be not significant and therefore the effect is neutral.
				Will SMP policy result in a change to SSSI condition?	Number of SSSIs impacted.	*(Policy HTL) The same issues relating to the international sites above are relevant here. Accordingly, the effect is also neutral.*
						Alternative (MR) The effects of an MR are considered likely to be not significant and therefore the effect is neutral.
				Will SMP policy result in a net change in priority BAP habitat extent?	Amount of priority BAP habitat impacted	*(Policy HTL) No loss of BAP habitat is expected in epoch 1 and the effect is therefore considered neutral.*
						Alternative (MR) The effects of an MR are considered likely to be not significant and therefore the effect is neutral.
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types						
Biodiversity, flora and fauna	**Flood and Erosion Risk Management**	Have as little flood and erosion risk management throughout the plan period as possible	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will result in continued flood and erosion risk management throughout epoch 1, although there will be no change in the operation of coastal processes as policy is currently HTL. However, this does not allow natural coastal processes to prevail. This is therefore scored as minor negative.
						Alternative (MR): MR would result in a shift to a more natural coastal form, although a degree of flood and erosion risk management would still be required. On balance, this is scored as a neutral.
Biodiversity, flora and fauna	**Habitats**	Maintain natural processes relating to mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	The policy provides for HTL in epoch one. Given the extensive area of foreshore (saltmarsh and mudflat) seaward of defences, the epoch one policy is not considered to have any significant effect on processes relating to habitat. The effect is therefore considered neutral.
Maintenance of environmental conditions to support biodiversity and the quality of life						
Water			Water	Will SMP policy result in changes to features covered by local WFD objectives?	Number of features covered by local WFD objectives impacted	*Policy (HTL): WFD objective 1 is only applicable to High Status water bodies and the potential for SMP2 policies to meet or fail WFD1 has not been considered. Policy for Epoch 1 is not considered likely to result in deterioration of the ecological potential or objectives of any Transitional and Coastal (TraC) water bodies, and the HTL policy has no potential to impact landward freshwater biological quality elements (BQEs). No changes will impact groundwater quality. This is scored as minor positive.*
						The WFD assessment was only carried out on the preferred policy option.
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in The Wash						
Cultural heritage, including architectural and archaeological heritage	**Timing**	Provide sufficient time, if required, for research of archaeological features	Historic environment	Will the SMP policy result in a change to designated and non-designated historic features?	Number of designated and non-designated historic features impacted	Policy (HTL): Two Scheduled Monuments, Wybert's Castle (Medieval moated site) and Multon Hall (Moated site) are located within the study area in this PDZ, while 7 Scheduled Monuments are located in King's Lynn. In addition, a registered park and garden (The Walks) is located in King's Lynn. However, all are located away from the coast and unlikely to be impacted by SMP policy. This is therefore scored as minor positive.
						Alternative (MR): Two Scheduled Monuments, Wybert's Castle (Medieval moated site) and Multon Hall (Moated site) are located within the study area in this PDZ, while 7 Scheduled Monuments are located in King's Lynn. In addition, a registered park and garden (The Walks) is located in King's Lynn. However, all are located away from the coast and unlikely to be impacted by a MR policy. This is therefore scored as minor positive.

Table 1A.2 **PDZ 1 Epochs 2 & 3**

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Threats from tidal inundation to approximately ten percent of the nation's high quality agricultural land						
Soil	**Agriculture**	Protect as much Grade 1 and Grade 2 land as possible	Soil and agricultural land quality	Will SMP policy result in a change in extent of Grade 1 and 2 agricultural land?	Amount of Grade 1 and Grade 2 agricultural land available	Policy (HTL): HTL will not lead to loss of any Grade 1 or 2 agricultural land within this PDZ within epochs 2 and 3. The effect is therefore considered minor positive.
Soil	**Agriculture**	Ensure that the impact on the UK's area of Grade 1 and Grade 2 land is acceptable: ensure that there is at least X area in Epoch 1 / 2 / 3	Soil and agricultural land quality			Policy (MR): MR would lead to loss of Grade 1 and 2 agricultural land. The effect is therefore considered minor negative.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Water	**Infrastructure**	Avoid interruption of the drainage function of Rivers Witham, Welland, Nene and Great Ouse throughout the plan period	Hydrology and water resources	Will the SMP policy result in a change to the drainage function of discharging rivers?	Number of rivers with impacted drainage function	Policy (HTL): HTL will not lead to a change in the drainage function of discharging rivers. The effect is therefore considered neutral.
						Policy (MR): MR will not lead to a change in the drainage function of discharging rivers. The effect is therefore considered neutral.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Population, human health	**Communities**	Protect as a minimum, throughout the plan period, to an appropriate standard of protection, all established 'strategic pubs and churches settlements' and the area landward from these settlements	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of established "strategic pubs and church" settlements impacted	Policy (HTL): HTL will ensure no "strategic pubs and church" settlements are impacted and will not increase flood and erosion risk to coastal communities. Standard of defence will be maintained at or above current standard, therefore minor positive.
						Policy (MR): Design of MR would ensure that no "strategic pubs and church" settlements would be impacted and would not increase flood and erosion risk to coastal communities, as standard of defence would be maintained at or above current standard, therefore minor positive.
Population, human health	**Communities**	Protect as many settlements as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): Although an increased number of properties will lie within the tidal flood zone in comparison to epoch 1, HTL policy will ensures that flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
						Policy (MR): Although an increased number of properties will lie within the tidal flood zone in comparison to epoch 1, MR policy would ensure that flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
Material assets	**Communities**	Protect as many settlements as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): HTL would ensure that local infrastructure and assets (roads and access to foreshore) is maintained. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
						Policy (MR): MR in epochs 2 and 3 would lead to the loss of local infrastructure and assets (roads and access to foreshore). Although flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, this is scored as minor negative.
	Timing	Provide sufficient time, if required, for community adaptation	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?		Policy (HTL): HTL would ensure that time is allowed for adaptation of coastal communities. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
						Policy (MR): MR within epochs 2 and 3 would ensure that time is allowed for adaptation of coastal communities. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of the functioning of Boston Port and King's Lynn Port throughout the plan period (note that Sutton Bridge Port is only dealt with in the relevant Timing of Policies Objective, and does not have an individual Objective)	Critical infrastructure	Will the SMP policy affect the access to operation of ports?	Number of ports impacted	Policy (HTL): HTL would not affect the access to operation of ports, therefore maintaining the benefit of the ports to the local, regional and national economy. This is therefore scored as minor positive.
						Policy (MR): MR would be designed so that there would be no impact to affect the access to operation of ports, therefore maintaining the benefit of the ports to the local, regional and national economy. This is therefore scored as minor positive.
Material assets	**Timing**	Provide sufficient time, if required, for adaptation of Sutton Bridge Port	Critical infrastructure	Will the SMP policy affect the access to operation of ports?	Number of ports impacted	Policy (HTL): HTL policy would not require adaptation of Sutton Bridge port within epoch 2 and 3. This is therefore scored as minor positive.
						Policy (MR): MR would not impact Sutton Bridge port within epoch 2 and 3, as scheme would be designed to ensure no impact. This is therefore scored as minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **ROADS (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): HTL policy will ensure that there is no change in flood or erosion risk to key roads within this PDZ (A52, A17, A16, A149 & A-roads in settlements) and will ensure that the minor road network linking the coast with these roads are maintained in situ. This is therefore scored as minor positive.
						Policy (MR): Although a MR policy would maintain the key road network surrounding The Wash in this PDZ (A52, A17, A16, A149 & A-roads in settlements), the minor road network linking the coast with these roads would be impacted. As such, this is scored minor negative.
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **PRISON (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): HTL policy with ensure that HMP North Sea Camp is maintained in situ, with no increase in flood or erosion risk. This is therefore scored as minor positive.
						Policy (MR): HMP North Sea Camp is located next to the coast. However, realignment within this PDZ would not be a feasible option for this area. This is therefore scored as minor positive.
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **GEDNEY MARSH WINDFARM**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): HTL policy would maintain Gedney Marsh in situ. Therefore minor positive.
						Policy (MR): Any MR scheme would be designed to maintain Gedney Marsh in situ. Therefore minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Timing**	Provide sufficient time, if required, for recreational access to the foreshore	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): SMP policy will maintain the network of roads and rights of way in situ. Recreational features would also be maintained. This is therefore scored as minor positive.
						Policy (MR): MR policy will maintain major roads and rights of way, although minor roads may be lost. However, any roads which may be lost would be those linear to the coast and access to the coast would be maintained. Recreation features may be increased due to the MR policy, therefore major positive.
Landscape	**Landscape**	To maintain the integrity of the coastal landscape	Landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	Quantitative judgement	Policy (HTL): HTL will not lead to the loss of features considered significant to the landscape. This is therefore scored as neutral.
						Policy (MR): MR policy will not lead to the loss of features considered significant to the landscape. This is therefore scored as neutral.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise						
Biodiversity, flora and fauna	**Habitats**	Maintain and if possible increase the area of mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**	Habitats and species	Will SMP policy result in a change to conditions of European sites or habitats?	Number of European sites and habitats impacted based on Habitats Regulations assessment.	*Policy (HTL) The consultation draft wording of the SMP was for a possible MR policy in later epochs, depending on the accretional or erosional scenario. The policy wording does not rule out the potential for loss of SAC and SPA intertidal habitat through coastal squeeze. Accordingly an adverse effected cannot be discounted, due to the possibility that realignment may not be provided. The effect is therefore major negative.*
						Policy (MR) The MR policy would avoid any loss of intertidal habitat in the event of an erosional scenario. The actual realignment would actively address this loss, and the effect is considered major positive.
				Will SMP policy result in a change to SSSI condition?	Number of SSSIs impacted	*Policy (HTL and MR considered collectively) The same issues relating to the international sites above are relevant here. However the requirement for the Wash SSSI under the Countryside and Rights of Way Act 2000, do not require the same degree of certainty relating to being able to demonstrate that the plan will not have a negative impact. Accordingly, the effect is minor negative.*
						Policy (MR) The MR policy would avoid any loss of intertidal habitat in the event of an erosional scenario. The actual realignment would actively address this loss, and the effect is considered major positive.
				Will SMP policy result in a net change in priority BAP habitat extent?	Amount of priority BAP habitat impacted.	*Policy (HTL and MR considered collectively) The SMP policy seeks to provide a balanced approach to the loss of intertidal habitat through squeeze, with the creation of habitat through realignment. The expected loss in later epochs is addressed in the caveat to support epoch 2 policy however, the 'possibility' of realignment is only mentioned and is not certain. The effect is therefore minor negative.*
						Policy (MR) The MR policy would avoid any loss of intertidal habitat in the event of an erosional scenario. The actual realignment would actively address this loss, and the effect is considered major positive.
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types						
Biodiversity, flora and fauna	**Flood and Erosion Risk Management**	Have as little flood and erosion risk management throughout the plan period as possible	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will result in continued flood and erosion risk management throughout epochs 2 & 3, although there will be no change in the operation of coastal processes as policy is currently HTL. However, this does not allow natural coastal processes to prevail. This is therefore scored as minor negative.
						Policy (MR): MR would result in a shift to a more natural coastal form, although a degree of flood and erosion risk management would still be required. On balance, this is scored as a neutral.
Biodiversity, flora and fauna	**Habitats**	Maintain natural processes relating to mudflats, saltmarsh, sand dunes and saline/coastal lagoons **(where present)**	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	The potential exists for habitat to be lost due to HTL policy being selected in an erosional scenario in epochs 2 and 3. Due to the possibility of this, the effect is considered minor negative.
Maintenance of environmental conditions to support biodiversity and the quality of life						
Water			Water	Will SMP policy result in changes to features covered by local WFD objectives?	Number of features covered by local WFD objectives impacted	*Policy (HTL): WFD objective 1 is only applicable to High Status water bodies and the potential for SMP2 policies to meet or fail WFD1 has not been considered. Under an accretional scenario, HTL would not have the potential to impact freshwater BQEs, and deterioration of the ecological potential of landwater freshwater water bodies would be unlikely. Deterioration in the ecological potential of TraC water bodies would also be unlikely. The effect is considered to be minor positive.*
						Policy (MR): WFD objective 1 is only applicable to High Status water bodies and the potential for SMP2 policies to meet or fail WFD1 has not been considered. Under an erosive scenario MR would minimise impacts on BQEs in the PDZ by reducing the likelihood of coastal squeeze. Although impacts may arise, the overall effect is likely to be beneficial and deterioration of TraC waterbodies is unlikely. MR could potentially result in deterioration of landward water bodies, and saltwater intrusion could result in impacts on freshwater BQEs. Any potential impacts on groundwater will be limited, and the risk of deterioration is considered to be low. The effect is considered to be neutral.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ1 (Gibraltar Point to Wolferton Creek)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in The Wash						
Cultural heritage, including architectural and archaeological heritage	**Timing**	Provide sufficient time, if required, for research of archaeological features	Historic environment	Will the SMP policy result in a change to designated and non-designated historic features?	Number of designated and non-designated historic features impacted	Policy (HTL): Two Scheduled Monuments, Wybert's Castle (Medieval moated site) and Multon Hall (Moated site) are located within the study area in this PDZ, while 7 Scheduled Monuments are located in King's Lynn. In addition, a registered park and garden (The Walks) is located in King's Lynn. However, all are located away from the coast and unlikely to be impacted by a HTL policy. The effect is considered to be minor positive.
						Policy (MR): Two Scheduled Monuments, Wybert's Castle (Medieval moated site) and Multon Hall (Moated site) are located within the study area in this PDZ, while 7 Scheduled Monuments are located in King's Lynn. In addition, a registered park and garden (The Walks) is located in King's Lynn. However, all are located away from the coast and unlikely to be impacted by a MR policy. The effect is considered to be minor positive.

Table 1A.3 **PDZ 2 Epoch 1, 2 & 3.**

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ2 (Wolferton Creek to South Hunstanton)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Threats from tidal inundation to approximately ten percent of the nation's high quality agricultural land						
Soil	**Agriculture**	Protect as much Grade 1 and Grade 2 land as possible.	Soil and agricultural land quality	Will SMP policy result in a change in extent of Grade 1 and 2 agricultural land?	Amount of Grade 1 and Grade 2 agricultural land available	Policy (HTL): SMP policy will not lead to loss of any Grade 1 or 2 agricultural land within this PDZ within epoch 1. The effect is therefore considered to be minor positive.
Soil	**Agriculture**	Ensure that the impact on the UK's area of Grade 1 and Grade 2 land is acceptable: ensure that there is at least X area in Epoch 1 / 2 / 3				Alternative (MR): Alternative policy would lead to loss of Grade 1 and 2 agricultural land. The effect is therefore considered to be minor negative.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Population, human health	**Communities**	Protect as a minimum, throughout the plan period, to an appropriate standard of protection, all established 'strategic pubs and churches settlements' and the area landward from these settlements	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of established "strategic pubs and church" settlements impacted	Policy (HTL): SMP policy ensures no "strategic pubs and church" settlements are impacted and will not increase flood and erosion risk to coastal communities. Standard of defence will be maintained at or above current standard, therefore minor positive.
						Alternative (MR): A MR policy would ensure that no "strategic pubs and church" settlements would be impacted and would not increase flood and erosion risk to coastal communities, as standard of defence would be maintained at or above current standard, therefore minor positive.
Population, human health	**Communities**	Protect as many settlements as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): SMP policy ensures no additional properties lie within the tidal flood zone in comparison to the current number. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, while coastal communities such as Snettisham and Heacham will be maintained in situ. The effect is therefore considered to be minor positive.
						Alternative (MR): Within epoch 1, a MR policy would ensure that no properties lie within the tidal flood zone in comparison to the current number. Flood and erosion risk to Heacham, Snettisham and other coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
	Timing	Provide sufficient time, if required, for community adaptation	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?		Policy (HTL): SMP policy would ensure that time is allowed for adaptation of coastal communities. Flood and erosion risk to coastal communities will not increase as standard of defence will be maintained at or above current standard, therefore minor positive.
						Alternative (MR): Design of MR would ensure that flood or erosion risk to coastal communities is not increased, with standard of defence being maintained at or above current standard, therefore minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **ROADS (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (HTL): SMP policy will ensure that there is no change in flood or erosion risk to key roads within this PDZ (A149 & local roads in Snettisham and Heacham) and there are no linear roads within this PDZ. The effect is therefore considered to be minor positive.
						Alternative (MR): Although a MR policy would maintain the key road network surrounding The Wash in this PDZ (A149 & local roads in Snettisham and Heacham) and there are no linear roads within this PDZ. The effect is therefore considered to be minor positive.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Communities**	To balance the costs of long-term sea wall maintenance with the long-term impacts	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): There are several camping and caravan sites and caravan parks within this PDZ; SMP policy will ensure the continued survival of these sites throughout epoch 1. The effect is therefore considered to be minor positive.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ2 (Wolferton Creek to South Hunstanton)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
		on tourism values and the long-term costs of loss or relocation of the caravan parks (Heacham & Snettisham)				Alternative (MR): There are several camping and caravan sites and caravan parks within this PDZ; however, any MR scheme will take these into account as there are no drivers for MR in these areas. The effect is therefore considered to be minor positive.
Material assets	**Communities**	To balance the costs of ongoing shingle ridge maintenance with the costs of loss or relocation of the beach huts	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): Key tourism assets in this area are beaches and the access to those beaches. HTL is unlikely to lead to the loss of these features in the first epoch. SMP policy also maintains holiday homes and the benefits to the local economy associated with them The effect is therefore considered to be minor positive.
						Alternative (MR): Key tourism assets in this area are beaches and the access to those beaches. Any MR, by design, is unlikely to lead to the loss of these features in the first epoch. In addition, holiday homes and the benefits to the local economy associated with them are also likely to be protected at scheme level. The effect is therefore considered to be minor positive.
Material assets	**Timing**	Provide sufficient time, if required, for recreational access to the foreshore	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): SMP policy will maintain the network of roads and rights of way currently in situ. Recreational features would also be maintained. The effect is therefore considered to be minor positive.
						Alternative (MR): MR in this PDZ would not lead to the loss of roads or the recreational value of the foreshore. The effect is therefore considered to be minor positive.
Landscape	**Landscape**	To maintain the integrity of the coastal landscape	Landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	Quantitative judgement	Policy (HTL): SMP policy will ensure that the lagoons and dunal systems are maintained throughout the epoch, both of which are key landscape features in this PDZ. The effect is therefore considered to be minor positive.
						Alternative (MR): A MR policy may lead to the loss of Snettisham lagoons and would also impact the integrity of the current coastal landscape. The effect is therefore considered to be minor negative.
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise						
Biodiversity, flora and fauna	**Habitats**	Maintain and if possible increase the area of mudflats, saltmarsh, sand dunes and coastal lagoons	Habitats and species	Will SMP policy result in a change to conditions of European sites or habitats?	Number of European sites and habitats impacted based on Habitats Regulations assessment.	*Policy (HTL) The SMP policy of HTL in the first epoch is followed by an approach to management to be developed for later epochs through a collaborative approach to management. In this context, no adverse effects are expected in the first epoch and the management for later epochs will be determined through monitoring, and the provision of revised policy, if necessary, in subsequent SMPs (which will require consideration under the Habitats Regulations). The effect is therefore considered to be neutral.*
						Alternative (MR) This alternative is not considered to have a significant effect on international sites and the effect is neutral.
				Will SMP policy result in a change to SSSI condition?	Number of SSSIs impacted.	*Policy (HTL) The same issues relating to the international sites above are relevant here. However the requirement for the Wash SSSI under the Countryside and Rights of Way Act 2000, do not require the same degree of certainty relating to being able to demonstrate that the plan will not have a negative impact. The effect is therefore also neutral.*
						Alternative (MR) This alternative is not considered to have a significant effect on SSSIs and the effect is neutral.
				Will SMP policy result in a net change in priority BAP habitat extent?	Amount of priority BAP habitat impacted	*Policy (HTL) The SMP policy seeks to provide a balanced approach to the loss of intertidal habitat through squeeze, with the creation of habitat through realignment. In epoch one no net loss of habitat is expected. In later epochs the collaborative approach to management will define the management of this area, a consideration of BAP requirements will inform that process. The effect is therefore considered to be neutral.*
						Alternative (MR) This alternative is not considered to have a significant effect on BAP habitat and the effect is neutral.
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types						
Biodiversity, flora and fauna	**Flood and Erosion Risk Management**	Have as little flood and erosion risk management throughout the plan period	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will result in continued flood and erosion risk management throughout epoch 1, although there will be no change in the operation of coastal processes as policy is currently HTL. However, this does not allow natural coastal processes to prevail. The effect is therefore considered to be as minor negative.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ2 (Wolferton Creek to South Hunstanton)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
		as possible				Alternative (MR): MR would result in a shift to a more natural coastal form, although a degree of flood and erosion risk management would still be required. On balance, the effect is therefore considered to be neutral.
Biodiversity, flora and fauna	**Habitats**	Maintain natural processes relating to sand and shingle shorelines, mudflats, saltmarsh, sand dunes and coastal lagoons	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will maintain coastal process, albeit on a frontage which is currently HTL. Issues of squeeze will be minimal during epoch 1. Lagoons at Snettisham are man-made and therefore do not require natural process to be maintained. Due to the limiting of natural coastal processes, this is scored as minor negative.
						Alternative (MR): MR would promote natural processes and reduce the (minimal) impacts of squeeze in epoch 1. The lagoons at Snettisham may be lost, although the areas realigned would adopt a more natural coastal form. The effect is therefore considered to be minor positive.
Biodiversity, flora and fauna	**Habitats**	Allow for natural interaction between beaches and dune systems	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will allow for a continued interaction between the existing beach and dunes systems, although this will reduce over the course of the epoch. Presence of defences helps to maintain beach frontages, but may have an adverse effect on dunal communities. On balance, the effect is therefore considered to be neutral.
						Alternative (MR): MR is unlikely to take place behind dunal systems, which would serve to maintain in situ, although MR would promote the evolution of a more natural coastal form in other areas. The effect is therefore considered to be minor positive.
Maintenance of environmental conditions to support biodiversity and the quality of life						
Water			Water	Will SMP policy result in changes to features covered by local WFD objectives?	Number of features covered by local WFD objectives impacted	*Policy (HTL, with conditional HTL/MR/NAI in Epochs 2 and 3): WFD objective 1 is only applicable to High Status water bodies but since the Wolferton Lagoon Complex has not yet been assessed for classification, it is not possible to determine whether WFD1 is applicable. HTL in Epoch 1 is not considered likely to result in deterioration of ecological potential in TraC water bodies.* *In the longer term, HTL could potentially lead to deterioration of TraC water bodies as a result of squeeze, but would also reduce the likelihood of deterioration of saline lagoons behind the shingle ridge and lower reaches of landward freshwater bodies. MR or NAI would be likely to have beneficial impacts on TraC water bodies, although they have the potential to result in deterioration of the saline lagoons and the lower reaches of landward freshwater bodies.* *The risk of SMP2 policies affecting the aquifer is low. Overall the policy approach is considered minor positive.*
						The WFD assessment was only carried out on the preferred policy options.
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in The Wash						
Cultural heritage, including architectural and archaeological heritage	**Timing**	Provide sufficient time, if required, for research of archaeological features	Historic environment	Will the SMP policy result in a change to designated and non-designated historic features?	Number of designated and non-designated historic features impacted	Policy (HTL): No historic features would be impacted by the preferred policy. The effect is therefore considered to be minor positive.
						Alternative (MR): There is a lack of historic environment features within this PDZ and therefore none would be impacted by any MR policies. The effect is therefore considered to be minor positive.

Table 1A.4 **PDZ 3 Epochs 1, 2 & 3**

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ3 (Hunstanton Town)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Communities**	To maintain Hunstanton as a viable town, seaside resort and regional commercial centre throughout the plan period	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (HTL): SMP policy throughout all epochs is HTL; as such, Hunstanton is maintained as a viable town, seaside resort and regional commercial centre throughout the plan period. The effect is therefore considered to be minor positive.
Material assets	**Intertidal Beach**	To maintain the existing level of intertidal beach area throughout the plan period	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (HTL): The HTL policy coupled with the NAI policy in PDZ 4 will maintain a sediment supply to areas located to the south off Hunstanton Cliffs, including Hunstanton beach itself, while there is no change to key tourism and recreation features. The effect is therefore considered to be minor positive.
Landscape	**Landscape**	To maintain the integrity of the coastal landscape	Landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	Quantitative judgement	Policy (HTL): The town of Hunstanton is a key feature in the coastal landscape; as such, the maintenance of defences will ensure that it is maintained in situ throughout the plan period. The effect is therefore considered to be minor positive.
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise						
Biodiversity, flora and fauna	**Habitats**	Have as little flood and erosion risk management throughout the plan period as possible	Habitats and species	Will SMP policy result in a change to conditions of European sites or habitats?	Number of European sites and habitats impacted based on Habitats Regulations assessment.	*Policy (HTL): A HTL policy on this frontage is not considered likely to have any adverse effect on designated international sites. The effect is therefore considered to be neutral.*
				Will SMP policy result in a change to SSSI condition?	Number of SSSIs impacted.	*Policy (HTL): A HTL policy on this frontage is not considered likely to result in a change to SSSI condition. The effect is therefore considered to be neutral.*
				Will SMP policy result in a net change in priority BAP habitat extent?	Amount of priority BAP habitat impacted	*Policy (HTL): No loss of BAP habitat is expected and the effect is therefore considered neutral.*
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types						
Biodiversity, flora and fauna	**Flood and Erosion Risk Management**	Have as little flood and erosion risk management throughout the plan period as possible	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (HTL): SMP policy will maintain the current coastal processes, although this will prevent natural change. Flood and erosion risk management will be required throughout the plan period. The effect is therefore considered to be minor negative.
Maintenance of environmental conditions to support biodiversity and the quality of life						
Water			Water	Will SMP policy result in changes to features covered by local WFD objectives?	Number of features covered by local WFD objectives impacted	*Policy (HTL): WFD objective 1 is only applicable to High Status water bodies and the potential for SMP2 policies to meet or fail WFD1 has not been considered. In Epochs 1 and 2 deterioration in ecological potential of TraC water bodies is not considered likely. In the longer term, sea level rise and erosion could contribute to deterioration of the ecological potential of the Wash Outer water body. A specific nourishment programme could be required. No landward Fresh Water Bodies (FWBs) are at risk and it is considered unlikely that the groundwater bodies will deteriorate. The effect is therefore considered to be minor positive.*
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in The Wash						
Cultural heritage, including architectural and archaeological heritage	**Timing**	Provide sufficient time, if required, for research of archaeological features	Historic environment	Will the SMP policy result in a change to designated and non-designated historic features?	Number of designated and non-designated historic features impacted	Policy (HTL): There are a number of Listed Buildings within Hunstanton which would be maintained through a HTL policy. The effect is therefore considered to be minor positive.

Table 5 PDZ 4 Epochs 1, 2 & 3 (with HTL considered in epoch 3)

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ4 (Hunstanton Cliffs)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Communities**	To maintain Hunstanton as a viable town, seaside resort and regional commercial centre throughout the plan period	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (NAI): SMP policy within this PDZ is NAI throughout all epochs; as such, although the cliff line erodes naturally throughout all three epochs, no properties are expected to be lost. However, due to the migration of the cliff line landward, the erosion risk will increase. Hunstanton is maintained as a viable town, seaside resort and regional commercial centre throughout the plan period. On balance, the effect is therefore considered to be neutral.
						Policy (HTL – epoch 3): A HTL policy would only be implemented if the cliff line erodes to the extent where properties would be lost. Erosion risk will be reduced and Hunstanton will be maintained as a viable town, seaside resort and regional commercial centre throughout the remaining period of the plan. Therefore, although the implementation of this policy would ensure that erosion risk to Cliff Parade does not increase, the fact that the implementation of a HTL policy would starve the coast to the south of sediment would therefore impact the maintenance of Hunstanton as a viable town, seaside resort and regional commercial centre throughout the plan period, this policy is scored, on balance as neutral.
Material assets	**Communities**	To protect as much of the existing development from cliff erosion as possible	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?	Number of properties within the tidal flood zone compared to the current number	Policy (NAI): Under the time line of the SMP, no properties are expected to be lost to coastal erosion. However, due to the migration of the cliff line landward, the erosion risk will increase, although all current development will be protected. Therefore, on balance, this is scored as neutral.
						Policy (HTL – epoch 3): As stated above, a HTL policy would only be implemented if the cliff line erodes to the extent where properties would be lost. As such, within this option, all current development would be protected and the status quo maintained. Therefore, on balance, this is scored as minor positive.
	Timing	Provide sufficient time, if required, for change of flood risk management practices	Coastal communities	Will the SMP policy result in a change in flood and erosion risk to coastal communities?		Policy (NAI): As the policy is NAI throughout the lifetime of the plan, sufficient time is allowed for change of flood risk management practices, if required. As stated previously, due to the migration of the cliff line landward the erosion risk will increase. On balance, the effect is therefore considered to be neutral.
						Policy (HTL – epoch 3): Again, a HTL policy would only be implemented if the cliff line erodes to the extent where properties would be lost. Due to this policy only being implemented in epoch 3, sufficient time would allowed for change of flood risk management practices, if required. On balance, the effect is therefore considered to be neutral.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Infrastructure**	Avoid interruption of transport connections and utility supply throughout the plan period – **ROADS (where present)**	Critical infrastructure	Will the SMP policy result in a change in flood or erosion risk to key transport, utilities and public infrastructure?	Critical infrastructure lost	Policy (NAI): Cliff Parade, which runs along the top of Hunstanton Cliffs, will be maintained in situ throughout the lifetime of the SMP. Erosion risk to Cliff Parade will increase throughout the SMP, although no transport connection will be interrupted throughout the plan period. On balance, the effect is therefore considered to be neutral.
						Policy (HTL – epoch 3): Should this policy be required to be implemented, Cliff parade will be maintained in situ and erosion risk will not be reduced. On balance, the effect is therefore considered to be neutral.
Protection of vulnerable, low lying coastal communities and the socio-economic features and issues which support them in regard to the effects of sea level rise						
Material assets	**Intertidal Beach**	To maintain the existing level of intertidal beach area throughout the plan period	Tourism and recreation features	Will the SMP policy result in a change to key tourism and recreation features?	Number of locations where tourism or recreation activity will be affected	Policy (NAI): The NAI policy will maintain a sediment supply to areas located to the south off Hunstanton Cliffs, including Hunstanton itself, while there is no change to key tourism and recreation features. The effect is therefore considered to be minor positive.
						Policy (HTL – epoch 3): By its very nature, a HTL policy would limit the supply of sediment to the intertidal beach area, which would impact the tourism and recreation features of Hunstanton. The effect is therefore considered to be minor negative.
Landscape	**Landscape**	To maintain the integrity of the coastal landscape	Landscape	Will the SMP policy result in a change in the quality of the coastal landscape?	Quantitative judgement	Policy (NAI): The alternative would be to provide defences to the toe of the cliffs. The NAI policy also maintains a supply of sediment to the beach to the south, which would maintain the integrity of the coastal landscape to the south. The effect is therefore considered to be minor positive.

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ4 (Hunstanton Cliffs)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
						Policy (HTL – epoch 3): As described above, the implementation of a HTL policy would involve the provision of hard defences to the toe of the cliffs, causing a detrimental change in the coastal landscape. The effect is therefore considered to be minor negative.
The loss of designated intertidal habitat located seaward of existing defences due to sea level rise						
Biodiversity, flora and fauna	**Habitats**	Have as little flood and erosion risk management throughout the plan period as possible	Habitats and species	Will SMP policy result in a change to conditions of European sites or habitats?	Number of European sites and habitats impacted based on Habitats Regulations assessment.	*Policy (NAI HTL considered in epoch 3) The policy on this frontage seeks to provide for NAI adjacent to the cliffs. Based on the findings of the Habitats Regulations Assessment it is considered that the pursuit of this policy would not lead to an adverse effect on adjacent international sites. The effect is therefore considered to be neutral.*
				Will SMP policy result in a change to SSSI condition?	Number of SSSIs impacted.	*Policy (NAI HTL considered in epoch 3) The issue here is similar to that for international sites. However, the SSSI here is designated for geological reasons. In order to maintain its favourable condition, some erosion of the cliff frontage will be required in the long term. The SMP policy provides for this, with some potential loss of exposure possible in epoch 3 if the toe of the cliff is to be held at that time. The overall NAI policy provides the conditions required for the favourable condition of this SSSI, nevertheless, on balance, the effect is considered minor negative due to the potential for a HTL policy in epoch 3.*
				Will SMP policy result in a net change in priority BAP habitat extent?	Amount of priority BAP habitat impacted	*Policy (NAI HTL considered in epoch 3) No overall loss of BAP habitat is expected on this frontage and the effect is considered neutral.*
Threat to biodiversity due to sea level rise and the interactions between various coastal habitat types						
Biodiversity, flora and fauna	**Flood and Erosion Risk Management**	Have as little flood and erosion risk management throughout the plan period as possible	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (NAI): There will be no change in the operation of coastal processes, as the policy is currently NAI. There is no requirement for hard defences and no risk from inundation. The effect is therefore considered to be minor positive.
						Policy (HTL – epoch 3): As the policy for the cliff line is currently NAI, the implementation of a HTL policy will result in a change in current coastal process, reducing the sediment supply to the south. There will also be a necessity for continued future flood risk management. The effect is therefore considered to be minor negative.
Biodiversity, flora and fauna	**Coastal Processes**	To maintain natural processes relating to cliffs	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (NAI): There will be no change in the operation of coastal processes and natural processers pertaining to cliffs will be maintained and promoted. The effect is therefore considered to be minor positive.
						Policy (HTL – epoch 3): As the policy for the cliff line is currently NAI, the implementation of a HTL policy will reduce the natural processes relating to Hunstanton Cliffs and reducing the sediment supply to the south. The effect is therefore considered to be minor negative.
Biodiversity, flora and fauna	**Coastal Processes**	To prevent interruption of the role of cliff erosion in supplying sediment to the neighbouring Frontages (including Hunstanton beach)	Coastal processes	Will the SMP policy result in a change in the operation of coastal processes?	Coastal processes impacted	Policy (NAI): The cliffs will continue to erode and supply sediment to the neighbouring frontages, with no change in coastal processes. The effect is therefore considered to be minor positive.
						Policy (HTL – epoch 3): A HTL policy will reduce the role of cliff erosion in supplying sediment to neighbouring frontages (including Hunstanton beach). The effect is therefore considered to be minor negative.
Maintenance of environmental conditions to support biodiversity and the quality of life						
Water			Water	Will SMP policy result in changes to features covered by local WFD objectives?	Number of features covered by local WFD objectives impacted	*Policy (NAI): Policy supports the natural development of the coastline and is expected to narrow the intertidal zone. However this is not considered to be deterioration in ecological potential. There are no landward FWBs so there is no potential for deterioration, and any potential for deterioration of groundwater bodies is considered low (despite potential moving of the saltwater-freshwater interface). The effect is therefore considered to be minor positive.*
						Policy (HTL – Epoch 3): Policy supports the protection of the lighthouse although the remainder of the coastline will be unmanaged. There is expected to be some loss of foreshore sediment and some coastal squeeze leading to potential deterioration in ecological potential. There are no landward FWBs so there is no

SEA Receptor (based on SI 1633	SMP Objective Category	PDZ4 (Hunstanton Cliffs)	Feature Identified in the SEA Scoping Report Baseline	SEA Assessment Criteria	SEA Indicator	Assessment
						potential for deterioration, and any potential for deterioration of groundwater bodies is considered low. On balance the impact of this policy is considered to be neutral.
Potential threats to low lying historic and archaeological features located behind current defences, in areas adjacent to early defences and the loss of the record this provides of settlement in The Wash						
Cultural heritage, including architectural and archaeological heritage	**Timing**	Provide sufficient time, if required, for research of archaeological features	Historic environment	Will the SMP policy result in a change to designated and non-designated historic features?	Number of designated and non-designated historic features impacted	Policy (NAI): There are two Listed Buildings which are at risk of coastal erosion and which may be lost by the end of the third epoch. The effect is therefore considered to be minor negative.
						Policy (HTL – epoch 3): The implementation of a HTL policy would result in time being allowed for research of archaeological features and would ensure that the two listed buildings at threat of erosion are not impacted. The effect is therefore considered to be minor positive.