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Wash East Coastal Management Strategy, Strategic Environmental Assessment, Statement of Environmental Particulars (SoEP).

November 2014 – Draft Final

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Introduction

This Statement of Environmental Particulars (SoEP) indicates how consultee comments on the Strategic Environmental Assessment were taken into account during the preparation of the Wash East Coastal Management Strategy ('the Strategy') and how the Environment Agency selected the final approach adopted.

The SoEP goes on to set out the monitoring procedures that have been set in place to monitor the significant environmental effects of the implementation of the Strategy.

A complete description of the project area, study areas and the proposed approach to managing erosion, are contained in environmental assessment reports (Appendix N)). The Strategy was developed following robust Environment Agency procedures.

Preferred Options

A piloting approach has been selected as the preferred option for Unit A. In this pilot approach, a number of new ideas will be tested to reduce the erosion on Hunstanton cliffs. These methods will include netting the base of the cliff, using sand bags, creating and creating a rock sill.

The preferred option in Unit B is to 'Hold the Line' by maintaining the existing sea wall and promenade. The decision about the future maintenance of the promenade will have to be made before the existing structures are in such a condition that they no longer provide a suitable level of flood defence. This is not expected for at least 15 years.

Improving the existing shingle ridge defences and hard defences (i.e. sea walls) is the preferred option for Unit C. This approach would require a similar level of funding in both areas. There would be a requirement for an initial significant amount of funding to improve the defences, followed by recycling, recharge and refurbishment as needed to maintain the improved level (taking account of climate change).

The environment during the development of the Strategy

Integration of environmental considerations

Environmental considerations were integrated throughout the development of this Strategy, following the Environment Agency's Strategic Environmental Assessment (SEA) guidance and other external guidance and good practice documents. These, and more topic-specific guidance and advice, ensure that potential effects of the Strategy on the environment and community have been appropriately considered throughout its development.

Initial environmental issues identified through a desk study and consultee engagement were set out in a Scoping Consultation Document. This was circulated for consultation with statutory stakeholders and the Strategy's advisory group. This provided an opportunity for early comment and confirmation of the scope of the ensuing assessments. Additions and amendments were confirmed through circulation of an updated post-consultation Scoping Report.

Natural England, English Heritage and the Environment Agency were also engaged at stages throughout the development and assessment of options to ensure that any data or assumptions were correct, and that all necessary mitigation and monitoring could be confirmed as appropriate.

Influence of the Environmental Report

The Environmental Report (ER) that was made available for public consultation alongside the draft Strategy included environmental findings that influenced the development of the Strategy. These findings contributed to guiding the option towards more environmentally and socially acceptable solutions, offering opportunities for identifying environmental enhancements, and setting out requirements for mitigation where significant negative effects were identified.

Throughout the development and assessment of the long list and short list of options for the Strategy, assessments have been undertaken of the potential environmental impacts arising from the various options. This fed back into the options development process. The short listed options were assessed for their impacts on the receiving environment to ensure that the best environmental options were taken forward, and that mitigation and enhancement measures were identified to take these options forward.

Impacts upon the historic environment and Sites of Special Scientific Interest (SSSI) features are the main implications for the Strategy. Potential impacts to buried archaeology have also been identified and these features will be taken into account during the development of the preferred options with appropriate monitoring regimes set up as and where required.

Hunstanton Cliffs SSSI is a sensitive (geological and biodiversity) site, so there is an inherent need to avoid or actively minimise potential impacts. Natural England and other stakeholders will be involved in the implementation of the Strategy, through development of individual projects, to ensure that the SSSI is not impacted. Building on this discussion, a suitable baseline setting plan followed by a monitoring plan for both the active piloting phase and post project phase will be created for the SSSI to ensure that the site's status and value is protected as far as possible.

From the perspective of the Water Framework Directive, no water bodies will be affected in Units A and B with the implementation of the preferred options. In addition, these preferred options will not affect the future implementation of any measures in the water bodies. In addition, the works in Unit C will help to maintain the condition of the Wolferton Lagoon Complex.

Mitigation measures, which will inform future more detailed scheme design and implementation, avoiding or limiting any adverse impacts are detailed in **Table 1** below. This table also includes enhancements and measures to ensure that benefits are maximised where possible. These mitigation and enhancement measures have been determined by the Strategy development team, through consultation with external consultees and are commitments by those implementing the Strategy.

Table 1. Environmental Mitigation and Enhancement Measures

Unit	Proposed Mitigation activity	Proposed Enhancement opportunities	Method of implementation (Responsibility)
Unit A	<p>Project level environmental assessment of the pilot study approach will be undertaken and will include baseline setting.</p> <p>Detailed discussions with Natural England will be held to agree the design proposals to ensure the special features of the sites are not damaged or destroyed. The criteria to be used during monitoring to assess whether any damage is occurring will also be agreed at this stage.</p> <p>Natural England assent will be in place prior to any piloting measures being implemented.</p>	<p>Opportunities for public art along the promenade, cliff top and beach.</p> <p>Community education opportunities due to the location of the Hunstanton Cliffs SSSI.</p> <p>Signboards detailing the internationally and nationally designated sites could be erected to inform the local community and users of the area and highlight the importance of the sites.</p> <p>Signboards detailing the historic value of Hunstanton could be erected near the cliffs to raise awareness of the key features present within the town.</p>	<p>Through the projects undertaken to implement the preferred option.</p> <p>(Environment Agency, King's Lynn and West Norfolk Borough Council and Natural England)</p>
Unit B	<p>Implement best practice measures to mitigate against health and safety risks to members of the public during the construction work.</p> <p>Advance communication with local residents and landowners.</p>	<p>Opportunities for public art along the promenade and beach.</p> <p>Signboards detailing the internationally and nationally designated sites could be erected to inform the local community and users of the area and highlight the importance of the sites.</p>	<p>Through the projects undertaken to implement the preferred option.</p> <p>(Environment Agency and King's Lynn and West Norfolk Borough Council)</p>
Unit C	<p>Detailed design of the preferred option to be supported by expert archaeologists.</p> <p>Detailed discussions with Natural England will be held to agree the design proposals, including access and working periods to ensure special features of the sites are not damaged or destroyed. The existing annual monitoring regime associated with recycling will be continued and regularly reviewed.</p>	<p>Opportunities for public art along the beach.</p> <p>Signboards detailing the internationally and nationally designated sites could be erected to inform the local community and users of the area and highlight the importance of the sites.</p>	<p>Through the projects undertaken to implement the preferred option.</p> <p>(Environment Agency and King's Lynn and West Norfolk Borough Council)</p>

Consultation responses

A Scoping Consultation Document was issued in April 2012, with a consultation period running for five weeks. Interested parties who were invited to comment on the report were Environment Agency, English Heritage and Natural England, as well as other stakeholders and interested parties such as the Norfolk Coast Partnership, Marine Management Organisation (MMO), the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Borough Council of King's Lynn and West Norfolk, Norfolk County Council and the Eastern Inshore Fisheries and Conservation Authority. The key issues arising from the consultation included:

- The interactions between the Strategy Units need to be taken into account, in particular in relation to coastal processes;
- Impacts on commercial fisheries activity in particular to shellfish beds, need to be considered;
- In terms of landscape and seascape character, the historic environment needs to be considered. The landscape reflects many aspects of human interaction with the landscape and coastal areas;
- Consideration should be given to the risk of obtaining third party funding towards schemes which do not provide adequate flood risk protection in accordance with the planning policies; and
- The loss of amenity value at the cliff top, including the loss of residential properties, historic buildings, access routes and loss of parking need to be considered during option development.

Since the development and assessment of the Strategy options (informed by the comments above), further consultation has been undertaken on the draft Strategy and the ER. Responses received on the ER are detailed in **Table 2** below.

Table 2 Responses to consultation on draft Strategy and Environmental Report

Consultee	Consultation comments	Response to comments
<p>Norfolk County Council</p>	<p>Norfolk County Council is supportive of the principles set out in the strategy and is keen to ensure that the Borough Council of King's Lynn & West Norfolk is successful in its endeavours to develop a partnership funded approach. In this respect Norfolk County Council would encourage the Borough Council of King's Lynn & West Norfolk to make an application to the Norfolk Coastal Fund at the earliest opportunity, so that the County Council can give consideration to the potential funding that may be available from that source.</p> <p>Although we understand the various specialist sections within the ER are, of necessity, summaries and therefore quite short we are disappointed to see that the historic environment section is shorter than that in the Scoping document.</p> <p>Section 4.2 states that "The study area has a large number of historic features in particular listed buildings." Although there are a large number of listed buildings within the study area there are also a larger number of other types of site. The listed buildings are the largest group of designated sites in the area if this is what the author had aimed to get across. This is a little unclear.</p> <p>The following sentence "There are nine listed buildings within Hunstanton and Heacham has 22 Grade II listed buildings, several of which are connected to the church" is inaccurate. There are 7 listed buildings in Hunstanton (as stated in the scoping document) and 24 in Heacham. The use of the phrase "connected to the church" is odd – are they in fact churches? Some of these inaccuracies are also repeated in section 6.2.2.</p> <p>The two undesignated buildings on the clifftop are specifically mentioned but not the two listed buildings (the lighthouse and St Edmunds Chapel) which the strategy hangs on. This needs to be addressed.</p> <p>Summary Table 4.9 mentions protected wreck sites. Protected Wrecks are a very specific set of designated wreck sites which are protected by law. There are no protected wrecks in this area.</p> <p>Section 5.2 – it is worth reiterating here that the lighthouse and chapel are listed buildings.</p> <p>Is there still no data for Historic Seascape Characterisation (HSC) for this area</p>	<p>Acknowledged</p> <p>The specialist sections in the ER have summaries of the baseline information presented in the Scoping Report, however the Scoping Report is appended to the ER should further information be required.</p> <p>The Section was reflecting the amount of listed buildings present within the study area and that as the consultee states these are the largest group of designated sites in the area.</p> <p>We acknowledge that an error was made in the details of the listed buildings and that there are 7 in Hunstanton as identified in the Scoping Report. The use of phrase "connected to the church" was used to indicate that the listed buildings are associated with the church (for example, a churchyard wall is a Grade II listed structure).</p> <p>The information in the ER is a summary of the full historic environment baseline which is presented in the Scoping Report and contains more details on the listed buildings; however the ER included undesignated buildings as they have been later identified as features of key concern by the local community.</p> <p>We acknowledge that the use of the term protected wrecks was an error and the ER should have instead made reference to the number of historic wrecks present in the study area.</p> <p>Acknowledged</p> <p>We currently have no information on HSC, however if this becomes available it</p>

Consultee	Consultation comments	Response to comments
	<p>of coastline?</p> <p>Unit A Works at the base of the cliffs around the lighthouse and chapel area should avoid the wreck of the Sheraton.</p> <p>Section 6.1.2 Again there is an odd prioritisation of clifftop heritage assets here. The listed buildings should be specifically mentioned and the Sheraton perhaps considered.</p> <p>Unit C Section 6.3.2 States “The majority of the known historic features associated with the study area are located within the other Units, i.e. not within this Unit. There are no designated features within the study area” This is entirely incorrect. There are more heritage assets in this unit than there are in the others – mainly as a result of the larger area. In addition there are 71 designated listed buildings and depending on the inland boundary of the project area potentially scheduled monuments present.</p> <p>The paragraph uses the acronym HER incorrectly. The HER (Historic Environment Record) is a database; individual records should be referred to as HER records.</p> <p>In this section and section 6.5.3 the proposed archaeological mitigation is welcomed, however use of terms such as excavation and watching brief should be avoided at this stage as it is unclear until detailed plans are drawn up which form of work will be most appropriate. Instead the term ‘Programme of Archaeological Work’ should be used.</p> <p>Section 8 – There may be opportunities for community involvement in recording and monitoring heritage assets as part of the scheme, although this may be for consideration at a later stage of work.</p>	<p>will be incorporated into the projects falling out of the strategy.</p> <p>During project development of the pilot study the location of the wreck will be considered and any necessary measures incorporated into the study.</p> <p>Reference to the lighthouse, a listed building is made within Section 6.1.2. The clifftop heritage assets have been focused on as consultation denied them as a key feature of concern for the local community, and they form part of triggers used to identify when action is needed in the Unit.</p> <p>Based on the study area detailed within the Scoping Report, the designated features identified by the consultee are outside of Unit C and therefore the largest number of designated heritage features are located within Unit A. The ER does acknowledge the archaeological potential of Unit C and mitigation measures are identified for dealing with these issues during the detailed design stage.</p> <p>Acknowledged</p> <p>Acknowledged</p> <p>These opportunities will be developed during the project development stage of the works, in conjunction with Norfolk County Council.</p>
RSPB	<p>RSPB strongly favour habitat creation to provide semi-natural buffers against flooding and erosion locally, to dissipate energy and accommodate flood waters to reduce risk elsewhere.</p> <p>Regarding Units A and B we have no specific points to make and no objection in principle to what is proposed, subject to an Appropriate Assessment under the Habitats Regulations of possible impacts on the designated areas in Unit C and across the entire Wash. It is unlikely that a proposal that did not</p>	<p>Acknowledged</p> <p>Acknowledged, a Habitat Regulations Assessment and Countryside and Rights of Way Act 1981 (as amended) assessment (known as a CRoW Appendix 3 assessment) of the Strategy have been produced for consultation. In addition, a further project level HRA and CRoW Appendix 3 assessment as</p>

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	<p>consider impacts on all designated areas in the Wash and, if appropriate, North Norfolk would be acceptable. Furthermore, one that did not take into account cumulative and in-combination impacts of multiple proposals anywhere where zones of influence may overlap, would also be unacceptable. However, conversely, proposals that meet these tests may have the capability of delivering a net gain for biodiversity and net public benefit overall, and we would collaborate in achieving this.</p> <p>We do not object in principle to the current recommendation, subject to the same caveats set out for Units A and B. Based on the information we have seen we do not anticipate that the proposals will have an adverse impact upon either the ecological or visitor experience aspects of the RSPB's Snettisham Reserve.</p> <p>Regarding the Coastal Park area and possible managed realignment the new strategy should include carrying out the necessary hydrological and coastal geomorphological studies, options appraisal and impact assessments, with a view to possible implementation on the ground in the following 5-year period should these assessments and local landowner/stakeholder opinion be favourable.</p> <p>The Environment Agency's Key Performance Indicator for habitat creation, as a contribution to the government's 2020 commitments under the Biodiversity Convention, should be a co-driver of habitat creation alongside coastal management needs.</p> <p>The managed realignment area is already of significant biodiversity value and has been publicly funded through HLS. Any future intervention should take account of the existing biodiversity value and as far as possible, be compatible with this. Loss of existing value would need to be accounted as a "cost" against benefits.</p> <p>The whole of the Wash shoreline should provide a context for all decisions made at a more local level, for several reasons:</p> <ul style="list-style-type: none"> • Hard and soft interventions can be expected to have impacts elsewhere in the Wash, and potentially along the North Norfolk Coast; in particular: geomorphological processes operate over a much wider area than just the Wash East zone, and both impacts and opportunities need to be understood across the likely affected area. 	<p>appropriate will be undertaken during the development stage for each project falling out of the strategy</p> <p>Acknowledged</p> <p>Managed realignment was one of the options considered during the development of a preferred option for Unit C. As the Strategy progresses, further research into this approach will be undertaken to identify if managed realignment is a viable option for the future.</p> <p>The Key Performance Indicators were the primary driver for including managed realignment as a possible option for Unit C.</p> <p>The existing value of the managed realignment area will be taken into consideration in the future, should this option be developed further.</p> <p>Acknowledged</p>

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	<ul style="list-style-type: none"> • Habitat use by birds and other wildlife is dynamic, involving different zones at different times. • Tidal and storm energy dissipation by natural habitat locally can contribute to lowering risk outside the intervention footprint. • Changes to the total resource of habitat types needs to be understood at an SPA/SAC level and at the level of any functional unit. • Compensation for habitat change in one area could, under certain circumstances, include habitat creation elsewhere in the Wash. • Strategically, the total contribution to both habitat creation and coastal defence needs to be planned, and opportunities assessed, at a Wash level. This would help minimise conflicts and perverse impacts between projects. • Co-planning interventions at a larger scale allows economies of scale, more diverse funding sources and potential for cross-subsidy. <p>Community Interest Company Given the likely public funding position into the foreseeable future, we would support creation of a CIC in principle, with the following provisos. We regard conditions 1-3 in particular as an absolute necessity.</p> <ol style="list-style-type: none"> 1) Crucially, the legally-defined purpose of the CIC should be <i>coastal management</i> rather than simply coastal defence. Otherwise, it would likely be <i>ultra vires</i> for the CIC to co-fund interventions with multiple objectives. 2) The governing body, consultative process and other decision-making processes must include nature conservation interests with status equal to commercial and other interests. 3) The legal incorporation of the CIC should create a duty to recognise the international importance of the Wash coast and sea for biodiversity and to take account of this, in addition to any statutory restrictions. This should include an obligation to work with Natural England and other appropriate bodies to ensure legal compliance, conflict resolution, and added value. 4) Any levying scheme should make a distinction in principle between for-profit commercial interests and properties designated and/or managed for public benefit including land managed for wildlife. This distinction could be in the form of significant discounts, for example. 5) There should be no restriction on income sources subject to these sources (and the conditions attached to any funding) being compatible with the legal purpose of the CIC. 6) There should be no restriction on the disbursement of funds to contractors, 	<p>The creation of a CIC will be considered during further development of the Strategy options and in the detailed design stage for each Unit.</p>

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	<p>public, private and charitable bodies, insofar as these bodies are the best option for achieving the aims of the CIC. There should be a transparent and effective system of accountability to ensure funds are disbursed in accordance with delivering the CIC's objectives to best effect.</p> <p>7) Co-funding of projects with wider aims than coastal management should be possible, provided CIC funds are limited to funding those aspects of the project that meet CIC's priorities.</p>	
<p>Natural England</p>	<p>Unit A</p> <p>In the Shoreline Management Plan (SMP), the aim for Unit A is no active intervention for the first two epochs (until 2055). It would be helpful for the CMS to explain why it is necessary to consider techniques to slow down erosion at this time. The CMS should highlight the need to use the time available to find adaptive solutions for cliff top assets, including the lighthouse and chapel, given the policy within the SMP and there being no immediate urgency.</p> <p>Hunstanton Cliffs SSSI are known for their geological interest and for the nesting fulmars. In addition, the cliffs are recognised as being one of Norfolk's best known and cherished land/seascape features. In implementing any of the proposed erosion reduction options care would need to be taken to ensure that the special features of interest, for which the site is notified, are not obscured or damaged. Continued adequate erosion is essential for keeping the cliff faces clear and maintaining the exposure of the geological interest. Hunstanton cliffs are eroded through both wave action at the foot of the cliffs and by groundwater percolating down through the cliffs from the land on top.</p> <p>Natural England questions the effectiveness of the measures identified in the strategy in slowing coastal erosion rates at the base of the cliffs, and notes that the measures would not affect cliff top erosion rates due to groundwater ingress.</p> <p>There is insufficient information in the Environmental Report (ER) to demonstrate that the Hunstanton Cliffs SSSI will not be damaged as a result of the proposals. Whilst there is an aspiration to avoid damage to the geological features of the SSSI, the impacts of the proposals have not been assessed. Further analysis is therefore required to assess erosion rates, and to test the likely effects of the proposals against the conservation objectives of the SSSI.</p>	<p>It was determined during development of the long list of options for Unit A and through consultation with key stakeholders and the local community that action was needed to slow the rate of erosion to protect the community together with key heritage and amenity features on the cliff top.</p> <p>The pilot study approach has been created for Unit A as it will maintain erosion of the cliff, although at a slower rate than currently. This will help to maintain a clear cliff face and the features of the SSSI. Detailed discussions with Natural England will be held to agree the design proposals to ensure the special features of the sites are not damaged or destroyed. The criteria to be used during monitoring to assess whether any damage is occurring will also be agreed at this stage.</p> <p>Project level assessment for the piloting measures will also look at groundwater ingress in relation to cliff drainage.</p> <p>The detailed design of the pilot study will include further assessment of the potential impact on coastal erosion rates. The pilot study approach will ensure that should one option not slow rates significantly enough another option can then be implemented. Cliff drainage options will also be considered during detailed design.</p> <p>Further assessment of the potential impacts on the SSSI will be undertaken during the project development stage of the pilot study. This will involve the creation of a monitoring regime to ensure that the special interest features of</p>

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	<p>Whilst we support the piloting approach to test ideas, in our view the first step is to determine when or if intervention is necessary, and this will need an assessment of current and predicted erosion rates. Intervention should only be made once an agreed threshold is reached, and this is not currently clearly defined in the documentation. Should a particular erosion protection method be selected for trial, a detailed impact assessment will be required in advance. This will need to include monitoring proposals, a defined lifetime for the trial, a commitment to review at the end of this time, and a commitment to remove the structures should they fail or cause damage. Natural England's advice should be sought in relation to the SSSI. The requirement for such a protocol should be stated in the ER.</p> <p>The advice of the Norfolk Coast Area of Outstanding Natural Beauty (AONB) unit should be sought on potential landscape and seascape impacts of the proposals.</p> <p>Unit C</p> <p>It is unclear what impact the proposals of holding the line and improving the sea defences will have on the coastal lagoons. The ER should explore the impacts of the proposals against the site's conservation objectives, particularly in relation to the seepage of seawater and examine how this may be affected.</p> <p>The Wash is notified as a SSSI and designated as a Special Area of Conservation (SAC) and Special Protection Area and Ramsar site due to the wealth of coastal habitats and species present. For Unit C, the importance of vegetated shingle as an SSSI feature is overlooked. The habitat is rightly referred to as a Biodiversity Action Plan (BAP) habitat, but its significance as a designated feature of the SSSI is not explained. The impacts of the proposals on this SSSI feature against the site's conservation objectives should be explored.</p> <p>The proposals for the Unit C frontage are to improve defences and then to re-cycle, re-charge and refurbish to maintain standards of protection. While it is noted that current monitoring and mitigation is carried out, the SEA does not provide detailed analysis of how the extent, duration, and timing of activities would be likely to change as a result of the proposed options. For example, it might be necessary to disturb larger areas of shingle for more often, or to extend the period of shingle re-charge into wintering or nesting periods. This</p>	<p>the SSSI will be subject to baseline monitoring to firstly establish what reduction in rate of erosion will be acceptable. This will continue to be monitored throughout the pilot study and any impacts identified at an early stage to ensure the appropriate action can be taken. This monitoring protocol will be developed in conjunction with Natural England.</p> <p>The project level development of the pilot study will include further assessment of the potential impact on coastal erosion rates. The pilot study approach will ensure that should one option not meet the pre-agreed criteria, another option can then be implemented. Monitoring throughout the life of the piloting will also be developed to ensure that SSSI features are not impacted.</p> <p>Acknowledged, they will be included as one of the stakeholders for the development of projects falling out of the strategy.</p> <p>The preferred option for Unit C involves sustaining the current standard of protection of the shingle ridges in front of the lagoons. This will allow the existing regime to be maintained and overtopping and seepage to occur. Therefore the saline lagoons will be unaffected by the preferred option.</p> <p>The potential impacts on the vegetated shingle SSSI feature is considered within the Countryside and Rights of Way Act 2000 Assessment. Shingle recycling is already undertaken along in Unit C, subject to agreements with Natural England. The agreements with Natural England will need to be extended to cover the future management of the area. Further discussions will be undertaken with Natural England to ensure that key vegetated areas are avoided. In addition, the existing routes for vehicular access which have been agreed with Natural England will be used where applicable. Should different areas of shingle need to be recharged (where no existing access routes have been agreed); discussions will be held with Natural England regarding the proposed access routes.</p> <p>The potential impacts of the longlist and shortlist options for each Unit have been assessed against all of the SEA objectives including ones relating to designated sites. The ER and the HRA present information on the preferred option with other options presented in the assessment tables. As with the current recycling, the proposed areas and extent which need to be re-charged will vary and it is not possible to accurately predict extent, duration or timing at this stage of the Strategy. To increase the standard of protection it</p>

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	<p>information is needed in order to assess the likely impacts of the proposals on the designated vegetated shingle SSSI feature, and SPA bird features.</p> <p>This analysis, as well as the Habitats Regulations Assessment should be extended to <i>all</i> proposed options, not simply to the preferred option. The ER should also include an analysis of the likely geomorphological effects of the listed proposals on vegetated shingle habitat.</p> <p>The SEA raises questions around the sustainability of the proposals beyond epoch 1, but these are not explored in further detail. In our view, a do nothing, or re-alignment option should be considered in addition to the tabled options.</p>	<p>is likely that the first recycling event will be larger than those currently undertaken, with annual recycling then carried out to maintain the level of protection.</p> <p>During the detailed design stage, further assessment of potential impacts will be undertaken and a similar monitoring programme developed to that which is currently in place. Natural England will be a key consultee during this process to ensure that all potential impacts are identified and appropriately managed. It is anticipated, that the requirements of the current recycling programme will be followed to ensure, including appropriate timings of the work.</p> <p>Both a do nothing and managed realignment option have been considered as part of the development of options for Unit C. The do nothing option is presented in the assessment tables which form an appendix to the ER. Managed realignment was an option considered during the longlist and there have been discussions with landowners regarding its potential implementation. However, further assessments and studies are required to determine how effective managed realignment would be as an option for protecting the properties and businesses within Unit C.</p>
Norfolk Geodiversity Partnership	<p>Unit A</p> <p>The coast here is a SSSI for its geology and landscape. It is a naturally evolving coastline and should be allowed to continue in this manner without the introduction of artificial constructions.</p>	<p>The preferred option for Unit A still allows for coastal erosion to continue, just at a slower rate than current conditions. Proposals for baseline monitoring will ensure that a reduced rate of erosion which still maintains the SSSI special interest features will be agreed upon which piloting measures will be tested against.</p>
Ken Hill Estate	<p>Ken Hill Estate is the owner of the land which abuts the coast between Heacham South Beach and Snettisham beach car park referred to in the consultation document as 'the country park' and known locally as Snettisham Coastal Park (SCP). It is one of the only remaining areas along The Wash's eastern coast that has not been developed for intensive agricultural production or temporary holiday or residential development. To preserve and enhance its biodiversity substantial grant support is received from public funds under the Higher Level Stewardship scheme. Finally access to SCP is made fully available by the Estate for the enjoyment of the public. SCP and lower areas of the Ken Hill Estate currently support a diverse range of coastal habitats including shingle, dune, brackish pools and ditches, scrub, grazing marsh and hedgerow. The Coastal Park, between the outer and inner sea walls, has a mosaic of reed-fringed brackish pools and ditches, shingle, grassy areas and scrub habitats. It is noted as an important site for migrant birds in spring and autumn but also has a significant range of breeding warblers and is important for flora and invertebrates. In the context of the WECMS we believe that in the short to medium term the coastline should be maintained to protect SCP's</p>	<p>The preferred option for Unit C will ensure that the Coastal Park area is maintained and the features identified protected. In the longer term, further assessment of different options for the area may be undertaken. However, this will be informed by consultation and input from stakeholders such as Ken Hill Estate.</p>

Consultee	Consultation comments	Response to comments
	current status, as described above, and agree with the recommendation to sustain defence standards over this period.	
Eastern Inshore Fisheries & Conservation Authority (IFCA)	<p>Unit C For any of the proposed options for this unit that involve beach replenishment, the Authority would like to raise the possible environmental and socio-economic impact of commercial shellfish bed smothering (particularly if the preferred options involves increasing current levels of this activity). The Environmental Report refers to the value of the fisheries that exploit these beds but does not estimate the potential for Unit C management options to affect these fisheries should beds be impacted; similar consideration should also be made of private lay fisheries for mussels located on intertidal mudflats and offshore banks. Owners of these several lay allotments and commercial fishers should be made aware of any proposed management options (for the latter group, via the relevant fishermen's associations).</p>	Annual recycling is already undertaken within Unit C, with an associated suite of annual ecological surveys and this activity will continue. The initial renourishment of the area will be of a larger value than that already undertaken. During project level development of this option, further assessment of the potential environmental impacts will be undertaken with input from key parties, including Eastern IFCA to ascertain the key parameters to be measured
Chris Lawry	<p>Unit A Works during construction will be intrusive; and the visual results will not be 'natural' or satisfactory. Let nature do its thing; as it will happen anyway.</p>	Control measures will be put in place during construction to manage impacts to environmental receptors and users of the area. The ER identified that there could be potential impacts to visual amenity as a result of the pilot study approach and these impacts will be considered further during detailed design.
Local Stakeholder	<p>Unit A Hunstanton Cliffs and the famous 'Red Chalk' outcrops are an iconic landscape feature of the Norfolk Coast, a nationally designated Site of Special Scientific Interest and an important seabird nesting location - the proposed schemes threaten each of these aspects and as such are inappropriate. Some level of natural erosion is essential to the maintenance of the landscape and scientific value of the cliff feature through refreshed presentation. If erosion was prevented, much of the essential refresh would be lost with it.</p>	The pilot study approach will maintain erosion of the cliff, although at a slower rate than currently. The study will also include monitoring protocols to ensure that the fulmar colony is not affected by the works.
Local Stakeholder	<p>Unit A As the author of the book "Geodiversity: valuing and conserving abiotic nature (Wiley Blackwell, 2013), I do not agree with the recommendation for this stretch of coast. The coast here is a Site of Special Scientific Interest for its geology and landscape. It is a naturally evolving coastline and should be allowed to continue in this manner without the introduction of artificial constructions.</p>	There is a need to balance the requirement for cliff erosion with the need to protect cliff top assets and consider impacts on the local community The pilot study option for Unit A will allow for a sufficient rate of erosion of the cliffs to maintain the special interest features.
Local Stakeholder	<p>Unit A Any form of barrier to the base of Hunstanton Cliff is incompatible with its status as a geological SSSI.</p> <p>The cliffs are a national attraction for geological tourism. Not only will netting etc. prevent visitors reaching the fallen basal blocks, it will be a visual intrusion which would detract from this renowned site.</p>	The pilot study will still allow the cliff to erode, maintaining its geological features and its condition as a geological SSSI. A monitoring protocol will also be developed in conjunction with Natural England to ensure that the geological features are not detrimentally affected.

Consultee	Consultation comments	Response to comments
Local Stakeholder	<p>Unit A Netting would only deface and obstruct the scenic view and the geology which is the prime aspect of that view.</p>	<p>The pilot study will still allow the cliff to erode, maintaining its geological features and its condition as a geological SSSI. A monitoring protocol will also be developed in conjunction with Natural England to ensure that the geological features are not detrimentally affected.</p> <p>Control measures will be put in place during construction to manage impacts to environmental receptors and users of the area. The ER identified that there could be potential impacts to visual amenity as a result of the pilot study approach and these impacts will be considered further during detailed design</p>
Local Stakeholder	<p>Unit A I raise a concern over the aesthetic consequences of some of the proposed methods particularly as the cliffs are iconic and sit within the AONB. If the stone used within Gabions does not sympathetically match the location, they will be an eye sore. I also raise a concern over the increase in likelihood of damage being caused to the cliffs and adjacent habitats if a pilot is subsequently removed.</p> <p>Unit B I would like to see the engineering of any future promenade / sea wall be sympathetic to the seascape and landscape areas of designated interest, using the most innovative solutions and materials available.</p>	<p>Landscape and visual impacts of each of the pilot study approaches will be considered during detailed design to ensure that the options implemented are sympathetic to the area.</p> <p>Detailed design of the promenade and sea walls will consider impacts on seascape and landscape and designated features.</p>

***Trans-
boundary
consultation
responses***

As described in the ER, whilst there are likely to be impacts experienced beyond the immediate project area, these are considered within each of the receptor assessments by considering appropriate zones of influence (study area). The SEA did not identify any significant environmental effects that required trans-boundary (other EU member states) consultation on this Strategy.

Reasons for selecting the adopted Strategy in light of reasonable alternatives

The Strategy considered a number of reasonable alternatives during its development. Further details on the selection of the preferred option, which was developed into the adopted Strategy, are presented in the SEA ER.

During the long list option assessment for Unit A, it was determined by the Advisory Group that continued erosion is desirable in terms of the benefits to the landscape value and the SSSI, but undesirable for other reasons (e.g. in terms of loss of properties and infrastructure and the impact on the local community). There was a clear consensus that it is not realistic or desirable to completely stop erosion, but that options to locally slow down erosion, through piloting of innovative solutions based on the Do Minimum methods should be explored. Based on this consensus, the Strategy team decided that there was no need for further work to develop a list of alternatives.

The long list assessment for Unit B by the Advisory Group and partners, and wider consultation showed a clear consensus that the strategic direction for Hunstanton Town is to sustain the promenade and seawall. Similar to Unit A, the Strategy team was able to use this consensus to determine that effectively the strategic decision for this Unit had been made and that further assessment of alternatives was not required.

The alternatives considered for Unit C consisted of a range of Hold the Line options for the frontline, defined by the Standard of Protection that is required (and associated investment level) and by how the Standard of Protection varies from north to south. The alternatives considered were:

- Do minimum;
- Sustain Defence Standard - continue the current annual recycling and maintenance regime, plus ten-yearly recharge and refurbishments, plus replacement of the hard structures as required;
- Equal Improvements 1 - improvement of all defences to 1:50 per year for the northern section and 1:20 per year for the southern section;
- Equal Improvements 2 - improvement of all defences to 1:75 per year for the northern section and 1:50 per year for the southern section;
- Equal Standards 1 - improvement of all defences to a 1:50 per year standard; and
- Equal Standards 2 - Initial improvement of all defences to a 1:75 per year standard.

As the alternatives do not vary significantly in terms of social, environmental and economic impacts (including impact on future decision pathways and flexibility to climate change), the Equal Improvements 2 option was selected as the preferred strategic approach as it was the economically preferred option.

Environmental monitoring measures during Strategy implementation

Table 3 below sets out indicators that will allow monitoring of significant environmental effects, and identifies any unpredicted effects which could arise during implementation. These indicators will also monitor the success of any mitigation measures and environmental enhancements in the adopted Strategy.

Project level developments resulting from the implementation of the Strategy will be assessed for environmental impacts according to the Environment Agency’s internal Environmental Impact Assessment (EIA) Operational Instruction. As part of this EIA process, projects will also be screened under the appropriate EIA regulations to ensure that legislative requirements are met.

In addition, Environmental Action Plans (EAPs) will be produced for the construction phase of the developments. These will form a method for ensuring mitigation, monitoring and enhancement measures are included throughout the construction and post-construction phases of the works.

Table 3. Indicators

Objective	Indicator	Monitoring method	Responsibility
Population and Communities			
To manage the risk to life and property	Number of people and properties affected by coastal erosion. Injuries or loss of life caused by erosion	Obtain flood data from ongoing Environment Agency monitoring and modelling datasets	Borough Council of King’s Lynn and West Norfolk and the Environment Agency
Water			
To protect the quality of the surface water and groundwater	Surface water quality Groundwater quality	Obtain water quality data from ongoing Environment Agency monitoring.	Borough Council of King’s Lynn and West Norfolk and the Environment Agency
Flora and Fauna			
To ensure there are no unforeseen impacts on Natura 2000 sites and SSSIs	SSSI condition	A suite of monitoring surveys to cover both geological and biodiversity features	Borough Council of King’s Lynn and West Norfolk and the Environment Agency with Natural England
	Natura 2000 sites condition	Continuation of recycling surveys (birds and habitats) within Unit C	
	All sites	For each Unit there will be a pre-pilot stage where detailed discussions with Natural England will be held to agree the design proposals to ensure the special features of the sites are not damaged or destroyed. The criteria to be used during monitoring to assess whether any damage is occurring will also be agreed at this stage.	
Land Use and Natural Resources			

Objective	Indicator	Monitoring method	Responsibility
To reduce waste and utilisation of natural resources including during maintenance work	Use of locally sourced materials Use of low embedded energy materials Maintenance proposals	Monitoring of site waste management plans through the projects undertaken to implement the preferred option.	Borough Council of King's Lynn and West Norfolk and the Environment Agency
Historic Environment (including geological features)			
To protect historic features	Condition of historically important buildings on top of the cliff	Monitoring and management programme developed with Natural England, English Heritage and other stakeholders.	Borough Council of King's Lynn and West Norfolk and the Environment Agency with Natural England and English Heritage
To minimise the impact on non-statutory archaeology and areas of archaeological potential	Buried archaeology. Areas of significant archaeological and palaeo-environmental potential unknown archaeology	Environment Agency monitoring through the projects undertaken to implement the preferred option (if required).	Borough Council of King's Lynn and West Norfolk and the Environment Agency with English Heritage
Climate			
To minimise carbon consumption	Carbon Footprint	Consideration of carbon footprint through the design and project implementation for the preferred option	Borough Council of King's Lynn and West Norfolk and the Environment Agency
To reduce vulnerability to the impacts of climate change (sea level rise and increased fluvial floods)	Sea level rise Rainfall	UK Climate Projections (or subsequent data) Meteorological Data	Borough Council of King's Lynn and West Norfolk and the Environment Agency with the detailed design team

Conclusion

Through the transparent and iterative assessment process, the impact of the Strategy on the environment has been reduced and enhancements proposed where feasible. The majority of impacts are not considered significant, although potential impacts on SSSI features remain. Ongoing liaison is being undertaken with Natural England and other stakeholders to ensure that impacts on these features are either minimised or managed in a satisfactory manner through suitable monitoring programmes.

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