

**East Riding of Yorkshire Local
Plan Strategy Document**
Habitat Regulations Assessment
Stage 2- Appropriate Assessment
East Riding of Yorkshire Council

January 2014

ATKINS

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This document has 37 pages including the cover.

Document history

Job number: 5044788

Document ref:

Client signoff

Client	East Riding of Yorkshire Council
Project	East Riding Local Plan Strategy Document
Document title	Habitat Regulations Assessment Stage 2- Appropriate Assessment
Job no.	5044788
Copy no.	
Document reference	Habitat Regulations Assessment Stage 2- Appropriate Assessment

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1. Introduction and Background

1.1. Background to this Assessment

This Habitats Regulations Assessment (HRA) Stage 2: Appropriate Assessment has been carried out by Atkins Limited (Atkins) on behalf of East Riding of Yorkshire Council for the Local Plan Strategy Document.

The Local Plan Strategy Document is hereafter referred to as 'the Plan'. The Plan covers the whole county of East Riding and is a high-level strategic document that considers development in the county between now and 2029.

The Plan consists of eight Spatial Strategy policies. These policies cover:

- Policies S1 to S8 dealing with strategic policies across the county.

The Plan has a total of 20 Development Policies. These policies can be split into the following four groups:

- A Healthy and Balanced Housing Market (H1 to H4);
- A Prosperous Economy (EC1 to EC7);
- A High Quality Environment (ENV1 to ENV6);
- A Strong and Healthy Community (C1 to C3).

The Plan also includes six Sub Area policies. These cover:

- Policies A1 to A6 dealing with development within the following six defined sub areas:
 - Beverley & Central sub area;
 - Bridlington Coastal sub area;
 - Driffield & Wolds sub area;
 - Goole and Humberhead Levels sub area;
 - Holderness & Southern Coastal sub area;
 - Vale of York sub area.

1.2. Background to the HRA Process

An HRA is required by the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations), for all plans and projects. Stage 1 of the HRA process is a screening stage which seeks to determine whether the plan or project might have a likely significant effect on a European site (either alone or in combination with other plans or projects). If a plan or project might have a likely significant effect (LSE) then a Stage 2 'appropriate assessment' is required, except in cases where the plan or project is directly connected with or necessary to the management of the European site. The appropriate assessment determines whether the plan or project would have an adverse effect upon the integrity of the European site.

European sites include Special Areas of Conservation (SAC) and Special Protection Areas (SPA). HRA is also required, as a matter of UK Government policy, for potential SPAs (pSPA), candidate SACs (cSAC) and listed Wetlands of International Importance (Ramsar sites) for the purposes of considering plans and projects, which may affect them¹. Hereafter all of the above designated nature conservation sites are referred to as 'international sites'.

An appropriate assessment (Stage 2 of the HRA process) is required if it is determined during the Stage 1 Screening assessment, that the project or plan will not have a likely significant effect on an international site.

None of the proposals within the Plan are directly connected with, or necessary to, the nature conservation management of the international sites.

¹ Department for Communities and Local Government (2012). *National Planning Policy Framework*.

The stages of HRA process are:

Stage 1 – Screening: To test whether a plan or project either alone or in combination with other plans and projects is likely to have a significant effect on an international site. If it cannot be concluded that there will be no likely significant effect on any international site, Stage 2 is needed;

Stage 2 – Appropriate Assessment: To determine whether, in view of an international site’s conservation objectives, the plan (either alone or in combination with other projects and plans) would have an adverse effect (or risk of this) on the integrity of the site with respect to the site structure, function and conservation objectives. If adverse effects are anticipated, potential mitigation measures to alleviate impacts should be proposed and assessed;

Stage 3 – Assessment of alternative solutions: Where a plan is assessed as having an adverse effect (or risk of this) on the integrity of an international site, there should be an examination of alternatives (e.g. alternative locations and designs of development); and

Stage 4 – Assessment where no alternative solutions remain and where adverse effects remain: In exceptional circumstance (e.g. where there are imperative reasons of overriding public interest), compensatory measures to be put in place to offset negative impacts.

This report comprises the Stage 2 Appropriate Assessment of the the Policy S6 part B in Local Plan Strategy Document which was identified at Stage 1 as having a likely significant effect on the international sites.

1.3. Previous HRA Work

Atkins completed a Stage 1 (Screening) assessment of the Local Plan Draft Strategy Document in January 2013². This report was revised following comments from Natural England in April 2013³.

The revised Stage 1 Screening assessment identified that part B of Policy S6 - Delivering Employment Land (as drafted in the Local Plan Draft Strategy Document) may lead to likely significant effects on the Humber Estuary SAC/SPA/Ramsar site.

The Draft policy (S6 part B) referred to development of the whole 240 ha of the site, without any mitigation within the site. This stage 2 appropriate assessment therefore starts by reassessing that proposal which formed part of the Draft Plan. This approach has been taken to enable the HRA to inform the development of the plan and record and justify any changes made to the plan as a result of this iterative HRA process. This approach has been followed with regard to advice from Natural England.

1.4. Structure of this Report

Following this introduction:

Section 2 outlines the methodology used for this Stage 2 Appropriate Assessment;

Section 3 provides details of the relevant international sites, including their qualifying features and Conservation Objectives;

Section 4 outlines the other plans and projects which are included in the ‘in combination’ aspect of the assessment and discusses the ‘in combination’ effects;

Section 5 details the results of the Stage 2 assessment;

Section 6 discusses the mitigation going forward; and,

Section 7 concludes the assessment.

² *East Riding Local Plan Strategy Document - Habitat Regulations Assessment Stage 1: Screening* (produced by Atkins in January 2013)

³ Natural England Letter Reference 77571 & 79281

2. Methodology

2.1. Stage 1 Habitat Regulations Assessment - Screening

2.1.1. The Plan

All available information about the Plan was gathered in order to analyse whether the Plan might have a likely significant effect on the international sites.

2.1.2. Determination of International Sites included in the HRA

An initial review of the Plan in light of the Habitats Regulations was undertaken by Atkins as part of the HRA Stage 1 - Screening process. This initial review looked at the geographic extent or zone of influence of any impacts which could arise as a result of the Plan and considered which international sites should be included within the assessment. This review determined that the following international sites needed to be included in the HRA Stage 1 – Screening:

- Flamborough Head and Bempton Cliffs SPA;
- Flamborough Head SAC;
- Humber Estuary SAC;
- Humber Estuary SPA;
- Humber Estuary Ramsar;
- Thorne and Hatfield Moors SPA;
- Thorne Moor SAC;
- Lower Derwent Valley Ramsar;
- Lower Derwent Valley SAC;
- Lower Derwent Valley SPA;
- River Derwent SAC;
- Hornsea Mere SPA;
- Skipwith Common SAC.

For the HRA Stage 2 – Appropriate Assessment which will assess part B of policy S6 only the Humber Estuary SAC, SPA and Ramsar site are included in this assessment. All other policies within the plan we assessed at Stage 1 as having no likely significant effect and have therefore been omitted from this Stage 2 assessment.

Further details of these international sites including their location, designation details and conservation objectives are provided in Section 3.

2.1.3. Obtaining Information on International Sites with the Potential to be Affected

Information was gathered on the international sites to be included in the HRA. This includes:

- Obtaining information on the qualifying features of each international site from the Joint Nature Conservation Committee (JNCC) website (www.jncc.gov.uk);
- Contacting Natural England for the Conservation Objectives and Favourable Conditions Tables for each international site;
- Using scientific papers (referenced throughout) to understand the vulnerabilities and usage of each international site.

2.1.4. Obtaining Information on Other Projects and Plans

In accordance with the Habitat Regulations there is a need to consider the potential for effects of the Plan 'in combination' with other projects and plans. The Stage 1 screening report considered all the plans and projects which might have an in-combination effect on the whole plan. This Stage 2 appropriate assessment only considers plans or projects which have an effect in-combination with Policy S6, part B which relates to employment land at Hedon Haven.

Statutory bodies surrounding, or in close proximity to, the international sites were contacted for details of any projects or plans that have been subject to HRA. This is in order to determine if there is the potential for a cumulative impact on these international sites. The following organisations have been contacted for details of other plans and projects which might have the potential for significant effects upon the international sites:

- Associated British Ports;
- Bassetlaw District Council;
- Environment Agency;
- Defra
- Department of Energy and Climate Change;
- Department of Communities & Local Government;
- Doncaster Metropolitan Borough Council;
- East Lindsey District Council;
- East Riding of Yorkshire Council;
- Hambleton District Council;
- Humber Industry Nature Conservation Association;
- Hull City Council;
- Lincolnshire County Council;
- Lincolnshire Wildlife Trust;
- Marine Management Organisation;
- National infrastructure planning;
- North Eastern Sea Fisheries Committee (NESFC);
- North East Lincolnshire Council;
- North Lincolnshire (Unitary Authority) Council
- RSPB;
- West Lindsey District Council;
- Yorkshire and The Humber Regional Government;
- York Unitary Authority;
- Yorkshire Wildlife Trust.

A web based search of HRA Screenings and Appropriate Assessments was also undertaken.

2.2. Stage 2: Appropriate Assessment

A Stage 2 - Appropriate Assessment is being undertaken on policy S6, part B which, at the Stage 1 – Screening stage was found to have potential for a likely significant effect alone on an international site, namely the Humber Estuary SPA and Ramsar site. The purpose of this assessment is to establish whether there are elements of the Plan which could have an adverse effect on the integrity of these sites. The integrity of a site is defined as:

‘the integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.’⁴

The assessment of integrity is based on the site features and conservation objectives of the SAC, SPA and Ramsar site as provided in section 3 of this assessment.

For the Appropriate Assessment, English Nature (now Natural England) guidance on ‘site integrity’ has been used⁵ to identify suitable criteria for deciding whether impacts would be likely to be deemed ‘adverse effects on integrity’.

As described in Natural England’s guidance document The Habitats Regulations Assessment of Local Development Documents (Revised Draft)⁶:

⁴ Office of the Deputy Prime Minister Circular 06/2005

⁵ English Nature, May 2004. *European Sites Guidance - Internal Guidance to Decisions on ‘Site Integrity’: A Framework for Provision of Advice to Competent Authorities*

“...it should be borne in mind that appropriate assessment for a plan is unlikely to be as detailed an assessment as one undertaken at project level.

Occasionally, where a proposal in a plan is advancing rapidly at project development level, concurrently with the plan-making process, such detailed information could be available, but usually such detailed assessments are unlikely to be achievable or feasible. The object is to assess whether it can be ascertained that the elements of the plan, alone or in combination with each other, and/or other plans or projects, would not have an adverse effect on the integrity of a European site.”

One part of one policy has been the subject of a Stage 2 - Appropriate Assessment HRA process to assess if the policy (and the proposals therein) will have adverse effects on the integrity of the Humber Estuary SAC, SPA and Ramsar site.

The assessment has been based on the current understanding of the strategic proposals being put forward. The ecological use of broad areas of land where development may take place in the future (e.g. for housing and employment uses) has been assessed using scientific publications, aerial photographs and discussions with specialist consultants. Where appropriate, specific ecological information has been obtained (i.e. where studies have been carried out to inform planning applications for developments associated with certain areas where development may take place). Of particular reference within the assessment is the wintering bird data gathered for the Paull Local Development Order (LDO), Habitats Regulations Assessment (Ref: 47062982) undertaken by URS on behalf of the East Riding of Yorkshire Council, June 2013. This assessment gathered specific data on wintering/ passage birds within the LDO site boundary and the wider Local Plan allocation. This was collected through twice monthly surveys covering the high tide period between November 2011 and March 2013.

The potential for adverse effects on the integrity of the international sites from the Plan ‘in combination’ with other projects and plans has also been considered in this HRA. Although impacts from an individual project or plan may have no adverse effects on the integrity of an international site, cumulative impacts from other plans and projects may result in an in combination effect on one or more interest features of the international site⁷. Adverse effects on integrity by these means must also be considered. Details of plans and projects that have had HRAs completed due to the potential for impacts upon the three international sites were reviewed in order to determine whether there is potential for in combination effects (see Section 4).

Where necessary, mitigation measures have been put forward to address any adverse effects on integrity of the international sites (see Section 6). Policy level HRA offers an opportunity to highlight where lower tier plans and projects will require HRA in order to avoid conflict with conservation objectives for international sites. The purpose of policy level HRAs is to assess whether particular policies will impact on designated sites. If it cannot be ruled out that there will be no adverse effects on the international sites, then policies must be amended, deleted or where appropriate, deliverable mitigation must be identified to avoid or remove the potential adverse impacts of a policy. This approach will ensure the plan is robust and deliverable.

Impacts of a plan depend to a large extent on how policies and proposals are implemented on the ground. Due to the uncertainties inherent in policy-making, the exact effect of a policy or proposal may not be certain until detailed implementation. This can make it difficult to conclude with any certainty that adverse effects on integrity will not take place. Due to the requirement within the Habitats Directive to apply the precautionary principle if it is not possible to be certain that adverse effects will not occur, this HRA proposes methods to mitigate for adverse effects that could occur. This is important, in order to demonstrate that any development brought forward as a result of policies in this Plan, can be delivered without adverse effects on integrity. Changes to the detailed design of development schemes, when they arise, may be necessary as well as mitigation.

⁶ *The Habitats Regulations Assessment of Local Development Documents*, Natural England, 2009

⁷ *Habitat Regulations Guidance Note 4: Alone or In Combination*, English Nature, May 2001.

3. The International Sites

This section includes information about Humber Estuary SAC, SPA and Ramsar site obtained from the Natural England website⁸ and the Joint Nature Conservation Committee website⁹. This information is provided in Tables 1-4 and includes designation status, location, a brief description of the qualifying features of the site and conservation objectives¹⁰.

The boundaries of Humber Estuary SAC, SPA and Ramsar site are all very similar with only minor variations. Taken together they are known as the Humber Estuary European Marine Site. The term ‘European Marine Site’ is the collective term for Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) that are covered by tidal water and protect some of the most important marine and coastal habitats and species of European importance.

Table 1. Information about the Humber Estuary SAC

Site Designation Status	Humber Estuary Special Area of Conservation
Location of International Site	<p>The Humber is the second largest coastal plain estuary in the UK and is fed by three rivers including the Ouse, Trent and Hull. The SAC incorporates sections of the Rivers Ouse and Trent and the entire Humber Estuary, extending south from the mouth of the Humber to near Saltfleet on the east coast.</p> <p>The Humber Estuary comprises extensive wetland and coastal habitats. The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. On the North Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools.</p>
Brief Description of the International Site	<p>Humber Estuary SAC qualifies for European protection due to the following:</p> <p>H1110. Sandbanks which are slightly covered by sea water all the time; Sub-tidal sandbanks;</p> <p>H1130. Estuaries;</p> <p>H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats;</p> <p>H1150. Coastal lagoons*;</p> <p>H1310. <i>Salicornia</i> and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand;</p> <p>H1330. Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>);</p> <p>H2110. Embryonic shifting dunes;</p> <p>H2120. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes"); Shifting dunes with marram;</p> <p>H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*;</p> <p>H2160. Dunes with <i>Hippophae rhamnoides</i>; Dunes with sea-buckthorn;</p> <p>S1095. <i>Petromyzon marinus</i>; Sea lamprey;</p> <p>S1099. <i>Lampetra fluviatilis</i>; River lamprey;</p> <p>S1364. <i>Halichoerus grypus</i>; Grey seal.</p> <p>* denotes a priority natural habitat or species</p>
Vulnerabilities of the	The Humber Estuary SAC is vulnerable to impacts on the geomorphological

⁸ www.natural England.org.uk

⁹ www.jncc.defra.gov.uk

International Site	<p>structure and function of the estuary (including impacts on the sediment budget) from the following:</p> <ul style="list-style-type: none"> • Coastal squeeze (e.g. sea level rise and climate change); • Flood defence works; • Dredging; • Construction, operation and maintenance of ports, pipelines and other infrastructure; and, • Changes in water quality and flows. <p>In addition the site is sensitive to damage and disturbance arising from access, recreation and other activities.</p>
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Table 2. Information about the Humber Estuary SPA

Site Designation Status	Humber Estuary Special Protection Area
Location of International Site	<p>The Humber is the second largest coastal plain estuary in the UK and is fed by three rivers including the Ouse, Trent and Hull. The SPA incorporates sections of the Rivers Ouse and Trent and the entire Humber Estuary, extending south from the mouth of the Humber to near Saltfleet on the east coast.</p> <p>The Humber Estuary comprises extensive wetland and coastal habitats. The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. On the North Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools.</p>
Brief Description of the International Site	<p>The Humber Estuary SPA qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:</p> <p>During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> • <i>Botaurus stellaris</i> (Europe - breeding) - 10.5% of the population in Great Britain 2000-2002; • <i>Circus aeruginosus</i> - 6.3% of the population in Great Britain 1998-2002; • <i>Recurvirostra avosetta</i> (Western Europe/Western Mediterranean -breeding) - 8.6% of the population in Great Britain 1998-2002; • <i>Sterna albifrons</i> (Eastern Atlantic - breeding) - 2.1% of the population in Great Britain 1998-2002. <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> • <i>Botaurus stellaris</i> (Europe - breeding) - 4% of the population in Great Britain 1998/9 to 2002/3; • <i>Circus cyaneus</i> - 1.1% of the population in Great Britain 1997/8 to 2001/2; • <i>Limosa lapponica</i> (Western Palearctic - wintering) - 4.4% of the population in Great Britain 1996/7 to 2000/1; • <i>Pluvialis apricaria</i> (North-western Europe - breeding) - 12.3% of the population in Great Britain 1996/7 to 2000/1; • <i>Recurvirostra avosetta</i> (Western Europe/Western Mediterranean - breeding) - 1.7% of the population in Great Britain 1996/7 to 2000/1. <p>On passage the area regularly supports:</p> <p><i>Philomachus pugnax</i> (Western Africa - wintering) - 1.4% of the population in Great Britain 1996-2000</p> <p>This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:</p> <p>Over winter the area regularly supports:</p> <ul style="list-style-type: none"> • <i>Calidris alpina alpina</i> (Northern Siberia/Europe/Western Africa) - 1.7% of the population 1996/7 to 2000/1; • <i>Calidris canutus</i> (North-eastern Canada/Greenland/Iceland/Northwestern

	<p>Europe) - 6.3% of the population 1996/7 to 2000/1;</p> <ul style="list-style-type: none"> • <i>Limosa limosa islandica</i> (Iceland - breeding) - 3.2% of the population 1996/7 to 2000/1; • <i>Tadorna tadorna</i> (North-western Europe) - 1.5% of the population 1996/7 to 2000/1; • <i>Tringa tetanus</i> (Eastern Atlantic - wintering) - 3.6% of the population 1996/7 to 2000/1. <p>On passage the area regularly supports:</p> <ul style="list-style-type: none"> • <i>Calidris alpina alpina</i> (Northern Siberia/Europe/Western Africa) - 1.5% of the population 1996-2000; • <i>Calidris canutus</i> (North-eastern Canada/Greenland/Iceland/Northwestern Europe) - 4.1% of the population 1996-2000; • <i>Limosa limosa islandica</i> (Iceland - breeding) - 2.6% of the population 1996-2000; • <i>Tringa tetanus</i> (Eastern Atlantic - wintering) - 5.7% of the population 1996-2000. <p>Internationally important assemblage of birds</p> <p>In the non-breeding season the area regularly supports:</p> <ul style="list-style-type: none"> • 153934 waterfowl (5 year peak mean 1996/7 to 2000/1). <p>Including:</p> <p><i>Anas crecca , Anas penelope , Anas platyrhynchos , Arenaria interpres , Aythya ferina , Aythya marila , Botaurus stellaris , Branta bernicla bernicla , Bucephala clangula , Calidris alba , Calidris alpina alpina , Calidris canutus , Charadrius hiaticula , Haematopus ostralegus , Limosa lapponica , Limosa limosa islandica , Numenius arquata , Numenius phaeopus , Philomachus pugnax , Pluvialis apricaria , Pluvialis squatarola , Recurvirostra avosetta , Tadorna tadorna , Tringa nebularia , Tringa totanus , Vanellus vanellus</i></p>
<p>Vulnerabilities of the International Site</p>	<p>The Humber Estuary is subject to the impacts of human activities (past and present) as well as ongoing processes such as sea level rise and climate change. Management intervention is therefore necessary to enable the estuary to recover and to secure the ecological resilience required to respond to both natural and anthropogenic change. Key issues include coastal squeeze, impacts on the sediment budget, and geomorphological structure and function of the estuary (due to sea level rise, flood defence works, dredging, and the construction, operation and maintenance of ports, pipelines and other infrastructure), changes in water quality and flows, pressure from additional built development, and damage and disturbance arising from access, recreation and other activities.</p> <p>Coastal squeeze is being addressed through the development and implementation of the Humber Flood Risk Management Strategy. All proposals for flood defence, development, dredging, abstractions and discharges which require consent from any statutory body, and land use plans which may have impacts upon the site are subject to assessment under the Conservation of Habitats and Species Regulations 2010. Diffuse pollution will be addressed through a range of measures including implementation of the Waste Water Framework Directive and Catchment Sensitive Farming initiatives.</p> <p>Other issues are addressed via a range of measures including regulation of on-site land management activities and implementation of the Humber Management Scheme, developed by all relevant statutory bodies to assist in the delivery of their duties under the Habitats Regulations.</p>

Table 3. Information about the Humber Estuary Ramsar Site

Site Designation Status	Humber Estuary Ramsar
<p>Location of International Site</p>	<p>The Humber is the second largest coastal plain estuary in the UK and is fed by three rivers including the Ouse, Trent and Hull. The Ramsar site incorporates sections of the Rivers Ouse and Trent and the entire Humber Estuary, extending south from the mouth of the Humber to near Saltfleet on the east coast.</p> <p>The Humber Estuary comprises extensive wetland and coastal habitats. The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. On the North Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools.</p>
<p>Brief Description of the International Site</p>	<p>The Humber Estuary is the largest macro-tidal estuary on the British North Sea coast. It drains a catchment of some 24,240 square kilometres and is the site of the largest single input of freshwater from Britain into the North Sea. It has the second-highest tidal range in Britain (max 7.4 m) and approximately one-third of the estuary is exposed as mud or sand flats at low tide. The inner estuary supports extensive areas of reedbed with areas of mature and developing saltmarsh backed in places by limited areas of grazing marsh in the middle and outer estuary. On the north Lincolnshire coast the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. The Estuary regularly supports internationally important numbers of waterfowl in winter and nationally important breeding populations in summer.</p> <p>The site qualifies as a Ramsar site under criteria 1, 3, 5, 6 and 8.</p> <p>Ramsar criterion 1</p> <p>The site is a representative example of a near-natural estuary with the following component habitats:</p> <ul style="list-style-type: none"> • dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and • coastal brackish/saline lagoons. <p>It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass <i>Spartina anglica</i> and annual glasswort <i>Salicornia</i> communities. Low to mid marsh communities are mostly represented by sea aster <i>Aster tripolium</i>, common saltmarsh grass <i>Puccinellia maritima</i> and sea purslane <i>Atriplex portulacoides</i> communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch <i>Elytrigia atherica</i> (<i>Elymus pycnanthus</i>) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed <i>Phragmites australis</i> fen and sea club rush <i>Bolboschoenus maritimus</i> swamp with the couch grass <i>Elytrigia repens</i> (<i>Elymus repens</i>) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.</p> <p>Ramsar criterion 3</p> <p>The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i>.</p>

	<p>Ramsar criterion 5 Assemblages of international importance: 153,934 waterfowl, non-breeding season (5 year peak mean 1996/97-2000/2001).</p> <p>Ramsar criterion 6 – species/populations occurring at levels of international importance.</p> <p><u>Eurasian golden plover, <i>Pluvialis apricaria</i> <i>altifrons</i> subspecies</u> NW Europe, W Continental Europe, NW Africa population 17,996 individuals, passage, representing an average of 2.2% of the population (5 year peak mean 1996-2000).</p> <p><u>Red knot, <i>Calidris canutus islandica</i> subspecies</u> 18,500 individuals, passage, representing an average of 4.1% of the population (5 year peak mean 1996-2000).</p> <p><u>Dunlin, <i>Calidris alpina alpina</i> subspecies – Western Europe (non-breeding) population</u> 20,269 individuals, passage, representing an average of 1.5% of the population (5 year peak mean 1996-2000)</p> <p><u>Black-tailed godwit, <i>Limosa limosa islandica</i> subspecies</u> 915 individuals, passage, representing and average of 2.6% of the population (5 year peak mean 1996-2000)</p> <p><u>Common redshank, <i>Tringa tetanus brittanica</i> subspecies</u> 7,462 individuals, passage, representing an average of 5.7% of the population (5 year peak mean 1996-2000)</p> <p><u>Common shelduck, <i>Tadorna tadorna</i> Northwestern Europe (breeding) population</u> 4,464 individuals, wintering, representing an average of 1.5% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Eurasian golden plover, <i>Pluvialis apricaria altifrons</i> subspecies – NW Europe, W Continental Europe, NW Africa population</u> 30,709 individuals, wintering, representing an average of 3.8% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Red knot, <i>Calidris canutus islandica</i> subspecies</u> 28,165 individuals, wintering, representing an average of 6.3% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Dunlin, <i>Calidris alpina alpina</i> subspecies – Western Europe (non-breeding) population</u> 22,222 individuals, wintering, representing an average of 1.7% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Black-tailed godwit, <i>Limosa limosa islandica</i> subspecies</u> 1,113 individuals, wintering, representing an average of 3.2% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Bar-tailed godwit, <i>Limosa lapponica lapponica</i> subspecies</u> 2,752 individuals, wintering, representing an average of 2.3% of the population (5 year peak mean 1996/7-2000/1)</p> <p><u>Common redshank, <i>Tringa totanus brittanica</i> subspecies</u> 4,632 individuals, wintering, representing an average of 3.6% of the population (5 year peak mean 1996/7-2000/1)</p> <p>Ramsar criterion 8 The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas.</p>
<p>Vulnerabilities of the International Site</p>	<p>The site is vulnerable to:</p> <ul style="list-style-type: none"> • Disturbance to vegetation through cutting / clearing;

	<ul style="list-style-type: none"> • Vegetation succession; • Water diversion for irrigation/domestic/industrial use; • Overfishing; • Pollution – domestic sewage; • Pollution – agricultural fertilisers; • Recreational/tourism disturbance (unspecified); • Other factor (Coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defences. The Humber Flood Risk Management Strategy has been developed and is being implemented.).
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Table 4. Conservation Objectives for the Humber Estuary SAC, SPA and Ramsar Site

Site Name	Conservation Objectives
Humber Estuary SAC	<p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; • The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; • The populations of qualifying species; • The distribution of qualifying species within the site.
Humber Estuary SPA	<p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely; • The populations of the qualifying features; • The distribution of the qualifying features within the site.
Humber Estuary Ramsar Site	<p>The conservation objectives for the Ramsar site are as follows:</p> <ul style="list-style-type: none"> • To maintain, subject to natural change, the wetland hosting an assemblage of threatened coastal and wetland invertebrates in favourable condition, particularly the saltmarsh communities and the coastal lagoons; • To maintain, subject to natural change, the wetland hosting a breeding colony of grey seals in favourable condition, particularly the inter-tidal mudflats and sandflats; • To maintain, subject to natural change, the wetland regularly supporting 20,000 or more waterfowl in favourable condition, particularly the inter-tidal mudflats and sandflats, saltmarsh communities and tidal reedbeds; and • To maintain, subject to natural change the wetland regularly supporting 1% or more of the individuals in a population of one species or sub-species of waterfowl in favourable condition, particularly the inter-tidal mudflats and sandflat, saltmarsh communities, tidal reedbeds and coastal lagoons.

4. Stage 2 – Appropriate Assessment

4.1. Summary of the Results of Stage 1 – Screening

As set out above, Atkins completed a Stage 1 (Screening) assessment of the Local Plan Draft Strategy Document in January 2013¹¹. This report was revised following comments from Natural England in April 2013¹².

The revised Stage 1 Screening assessment identifies that part B of Policy S6 - Delivering Employment Land (as drafted in the Local Plan Draft Strategy Document) may lead to likely significant effects on the Humber Estuary SAC/SPA/Ramsar site.

The Draft policy (S6 part B) refers to development of the whole 240 ha of the site, without any mitigation within the site. This stage 2 appropriate assessment therefore starts by reassessing that proposal which formed part of the Draft Plan. This approach has been taken to enable the HRA to inform the development of the plan and record and justify any changes made to the plan as a result of this iterative HRA process. This approach has been followed with regard to advice from Natural England.

The appropriate assessment is of the effect of the policy alone. Any residual effects are then considered in combination with other plans and projects.

4.2. Draft Policy S6 (Part B Only)

In order to complete a full and thorough assessment of the policy outlined above as part of this Stage 2 – Appropriate Assessment, the development related proposals (development aspects) have been identified (see Table 5 below).

Table 5. Development Related Proposals within Policy S6 – Delivering Employment Land

Policy Aspect	Policy Details	Further assessment within this Stage 2 HRA required?
Up to 240 ha of land will be allocated at Hedon Haven	B. Up to 240 hectares of land will also be allocated at Hedon Haven through the <i>Allocations Document or a Neighbourhood Development Plan</i> to cater for the expansion of the Port of Hull. Proposals for development in this location must ensure that they have no adverse impact on the integrity of the Humber Estuary Special Area of Conservation and Special Protection Area. They must also mitigate their impact on the highway network.	Yes: At Hedon Haven the allocation of up to 240 hectares of land is proposed to cater for the expansion of the Port of Hull. The land at Hedon Haven is primarily agricultural, and is located within close proximity to the Humber Estuary SAC/SPA/Ramsar. An HRA for the Paull LDO has been prepared for 80 hectares of this site. The HRA for the LDO required impact avoidance measures in the form of land managed for SPA birds to ensure that it would have no likely significant effect on the Humber SAC/SPA/Ramsar site. As Policy S6, part B covers a significantly larger area than the LDO, on a precautionary basis the Stage 1 Screening Report considered it was not possible to rule out a likely significant effect and so further assessment of the whole 240ha site is required through a Stage 2 Appropriate Assessment.

¹¹ *East Riding Local Plan Strategy Document - Habitat Regulations Assessment Stage 1: Screening* (produced by Atkins in January 2013)

¹² Natural England Letter Reference 77571 & 79281

4.3. Policy S6 - Delivering Employment Land

4.3.1. Summary of the Results of Stage 1 – Screening

The Stage 1 – Screening determined that part B of the Policy S6 Delivering Employment Land alone may lead to a likely significant effect on the Humber Estuary SAC, SPA and Ramsar site.

4.3.1.1. The Policy

4.3.1.1.1. Policy S6 - Delivering Employment Land

Of relevance to this assessment is part B of policy S6 which identifies that up to 240 ha of land will be allocated through the *Allocations Document or a Neighbourhood Development Plan* to cater for the expansion of the Port of Hull. In addition, proposals must ensure that they have no adverse effects on the Humber Estuary Special Area of Conservation. The Policy identifies land for employment use for the whole of the plan period up to 2029. It is expected that the initial phases of development will be on the area covered by the Paull LDO, with development of the remaining parts of the site occurring in several further phases during the timespan of the plan.

To provide clarity for the purposes of the HRA, the site numbering used within the Draft Local Plan, which split the land at Hedon Haven into two sites (HAV1 and HAV2) has been used. As explained above, HAV1 describes the is the approx 80ha portion of the site that benefits from the LDO, while HAV2 covers the additional 160ha area of land and includes the location of land proposed for impact avoidance for the LDO.

4.3.2. Stage 2 Assessment

4.3.2.1. Direct Loss of Habitat Within The International Sites Boundaries

The 240 ha originally identified under part B of Policy S6 would not facilitate any development that would result in direct loss of habitat within the boundary any of the international sites. The boundary of Hedon Haven closest to the international sites is marked by the toe of the landward side of the flood bank and will not be directly or indirectly affected by the Policy and therefore will not result in any direct loss of habitats within the international sites.

4.3.2.2. Indirect Impact Upon Habitats Within The International Sites Boundaries

Potential indirect impacts on designated habitats may occur on the water quality of the River Humber through water discharges or pollution incidents. Such discharges may have an impact upon habitat such as intertidal mud that in turn supports waterbirds that are part of the SPA and Ramsar designation. Hedon Haven is located immediately adjacent to the Humber Estuary and therefore there is a high potential for pollution incidents to occur. Therefore it is imperative that appropriate mitigation measures are included to avoid such impacts.

All developments, especially those within close proximity to international sites will be subject to strict control measures such as the implementation of best industry practices relevant to the location and type of development and strict adherence to the Environment Agency Pollution Prevention Guidance Notes (PPGs); with particular reference to:

- PPG01 (general guide to the prevention of water pollution);
- PPG02 (above ground oil storage tank e.g. for refuelling facilities on-site);
- PPG05 (works in near or liable to affect watercourses); and,
- PPG21 (pollution incident response planning).

The Humber Estuary SAC/SPA/Ramsar site is vulnerable to water abstraction and subsequent changes in flows. The Environment Agency publication 'Water Resources Strategy – Regional Action Plan for Yorkshire and North East, 2009' states that:

Valuing water – Yorkshire and North East Region is not perceived as being an area of water stress. However climate change and population growth will place greater pressures on our resources. We also need to recognise the link between energy and water. All water that is used

must be treated, contributing to the production of greenhouse gases. We need to work with all water users to highlight the value of water and promote efficiency measures.

It is not anticipated that the development at Hedon Haven will require groundwater or surface water abstraction which may have a local impact on water resources. Should at a later stage a development be proposed which does require groundwater or surface water abstraction this would be subject to separate licensing and assessment. Therefore the potential effects of this on the international sites would be dealt with through the relevant Environment Agency licensing or at the outline or full planning application stage.

4.3.2.3. Damage and Disturbance to Habitats Supporting River and Sea Lamprey

It is of relevance to note that the HRA of the Paull LDO (which grants outline planning permission for development on the HAV1 part of the land at Hedon Haven) concluded that there was no potential for the LDO to result in damage or disturbance to lamprey or their habitat. Since the majority of the land at Hedon Haven, covered under part B of Policy S6, lies further away from the Humber than the HAV1 part of the site, any possible effects upon aquatic habitat are unlikely to be greater than that already considered and dismissed.

4.3.2.4. Damage and Disturbance to Grey Seal

The nearest grey seal colony to Hedon Haven is approximately 38 km away at Donna Nook. Whilst grey seals may venture further up the Humber, development as a result of Policy S6 will not affect them either directly or indirectly.

4.3.2.5. Disturbance of Birds Within the SPA/Ramsar Site

Development applications brought forward under part B of Policy S6 will be subject to detailed planning considerations that will consider disturbance issues further as necessary. It is of relevance to note that the HRA of the Paull LDO considered the potential for the development arising from the LDO to give rise to disturbance impacts (URS 2013 para 4.10)¹³. The assessment considered impacts from visual disturbance and from noise. Taking into account conditions that were proposed and subsequently included within the LDO (including a limit on height of the buildings within the LDO area of no more than 22 m and a layout that sets development back from the flood bank) the assessment concluded noise and visual impacts would not lead to any significant adverse effects on birds that are qualifying features of the SPA or Ramsar site.

The LDO covers the HAV1 part of the land at Hedon Haven (part B of Policy S6), which is located next to the international sites. It is therefore the portion of Hedon Haven most likely to give rise to disturbance to birds within the SPA boundary. Since the remainder of Hedon Haven (HAV2) is situated further away from the international sites (c. 1,000 m), the likely disturbance impacts in the wider environment are likely to be significantly less than those associated with the Paull LDO.

4.3.2.6. Loss of Supporting Habitat Outside the The International Sites

Any development of land as a result of part B of Policy S6 will see up to 240 ha of land the majority of which is currently under arable cultivation, to cater for the expansion of the Port of Hull.

Part B of Policy S6 is therefore assumed to result in the loss of 240 ha of mainly arable land that will not be available for SPA birds to use in the future. This loss of arable land is the only potential impact pathway that is considered to result in a possible adverse effect upon integrity and therefore the following assessment of the impact upon the integrity of the international sites is devoted to this one impact

4.3.2.7. Bird Surveys

Bird surveys have been carried-out over a period of three winters from November 2011 to January 2014. The site was surveyed on 45 occasions during this period, with surveys being completed on at least two occasions each month during the winter period. The survey period covered three winters (2011/12, 2012/13 and 2013/14) and Natural England was consulted on the appropriate survey effort and methods employed. The surveys were completed by experienced ornithologists and timed to coincide with the high-tide in order to assess the use of the site for loafing and roosting during this period. The survey area extended to the land immediately surrounding the allocation boundary including the mud flat (when this was visible from the surveyors vantage point (VP).

¹³ URS 2013: Paull LDO Habitats Regulations Assessment Report

The topography of the site allows the site to be surveyed by a single surveyor viewing from vantage points (VP) across the site. The surveyor moved between vantage points during the survey time, but it was possible to see movements of large flocks of birds even when traveling between VPs because of the open nature of the site. Using high-powered scopes it was therefore possible for a single surveyor to cover the entire site and log bird movements.

The surveys were timed to be two hours either side of high tide, and survey dates were selected to ensure that there was enough daylight to make an accurate survey throughout this time frame.

The survey method used was adapted from the British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) Core Count. All bird species were recorded along with numbers, time of observation, behaviour, and any movement, on field recording sheets and maps. Birds were recorded flying over the site as well as those landing. Where helpful, notes were also made, such as comments on disturbance events.

The results of the survey are summarised in Table 6 and 7, which show the peak daily numbers for each SPA species recorded roosting at Hedon Haven. The survey results for the policy have been split between HAV1 and HAV2. As explained above, HAV1 describes the approximate 80ha portion of the site that benefits from the LDO, while HAV2 covers the additional 160ha area of land and includes the location of land proposed for impact avoidance for the LDO.

The most regularly recorded species within the HAV1 site during the survey period were curlew, golden plover and lapwing. The records were mainly for roosting/ loafing birds, although curlew flocks were noted to feed in the field on occasion.

4.3.2.8. Golden Plover

At HAV 1 a large flock of loafing/ roosting golden plover was recorded on the first survey in late November 2011 with a peak count of 5,000 birds. Much smaller flocks of between 20 and 630 birds were then observed during each survey from the end of November to early January, beyond which the species was typically not recorded within the site boundary during the winter 2011/ 2012 season. This is with the exception of eight golden plovers observed in March 2012. This is concurrent with the mudflat counts undertaken at Salt End by IECS between 1995 and 2007, which demonstrate that golden plover numbers typically peak in November to December, with a substantial reduction in numbers from January to February (EON, 2009). Surveys undertaken for the winter 2012/ 2013 season indicate small flocks of golden plover within the site boundary, with peak counts of 200 and 700 birds during surveys in September 2012. No golden plover were recorded within the site boundary during the October and November 2012 surveys, which is contrary to the surveys in November 2011 during which the largest aggregations of golden plover were recorded.

Golden plover were not recorded on the site in any surveys from October 2012 up to the most recent data collected in March 2013. The isolated peak count of 5,000 in November 2011 represents approximately 12.4% of the Humber Estuary five-year peak mean (Holt *et al.*, 2012). Flocks of this magnitude were not observed during any of the other surveys. The second highest peak count of 700 birds in September 2012 represents approximately 1.7% of the Humber Estuary five-year peak mean, and is significantly below the threshold value for international and national importance. In total, the 1% threshold value for indicating local value was exceeded by flocks of golden plover on four of the surveys (from a total of 28 surveys). Golden plover were observed to collect on the site from around the time of the high tide and depart approximately two hours after high tide in a southerly direction towards Paull Holme Strays, which is a known, regular 'hotspot' in the estuary for large flocks of golden plovers. The bird surveyor recorded large flocks of golden plover (typically in the thousands) in flight over Paull village, approximately 1 km to the south of the site, and flocks were observed to periodically circle over the Paull LDO site without landing.

In contrast to the above golden plover were only recorded on the wider Hedon Haven (HAV2) site on four occasions with a peak record of 2000 and the remaining three records being of 11 and 58 individuals (twice).

In the 2013/4 winter surveys, so far no golden plovers have been seen to land in any part of the site.

4.3.2.9. Lapwing

At HAV1 Lapwing were consistently recorded in flocks of around 300 birds in the peak winter months of November, December and January, with numbers falling sharply by the time of the February survey, with no records between March 2012 and March 2013. The peak count of 350 in January represents approximately

2.3% of the five-year peak mean Humber Estuary population (Holt *et al.*, 2012) with the thresholds for international and national importance for lapwing standing at 20,000 and 6,200 respectively. The threshold for local importance is generally accepted to be met where the numbers of a species meets or exceeds 1% of the Humber Estuary total. Lapwings were recorded in flocks of 300 in late November 2011 and flocks of 200 and 300 respectively in December 2011, all of which exceeded the accepted 1% threshold.. The only record for an entire 12 month period between March 2012 and March 2013 was a single sighting of 100 individuals; this provides further confidence in the conclusion of only periodic usage of the site by lapwing.

In contrast there have been only three records (30, 52 and 89 individuals) recorded in the wider HAV2 site.

4.3.2.10. Curlew

Curlews were recorded loafing/ roosting within the site boundary relatively consistently across the survey period, with flocks of typically 50 – 90 birds observed between mid-February and mid-March in both the 2012 and 2013 survey seasons as well as early January 2014. It is assumed that these are breeding curlews on passage to their upland summer breeding habitats. Smaller numbers of curlew were also observed feeding within the site boundary during the high tide period between November 2011 and January 2012. There was also an isolated peak in curlew numbers of 200 birds in December 2012. In the 2012 survey season, there was a sharp drop in the number of curlews recorded within the site boundary in late March, despite curlews being observed in large flocks roosting in other fields within the area (Chris Needham, *pers comm.*). This indicates that the flocks of curlew had not yet departed for their breeding grounds by the end of March 2012, but favoured other loafing/ roosting habitat within the wider local area. This is likely to be as a direct result of the increasing height of the cereal crops within the HAV1 boundary rendering the habitat unsuitable for loafing/ roosting waterbirds from the end of March onwards. The early winter 2012/ 2013 surveys undertaken to date identified periodic records of small groups of curlew (maximum of 16 birds) in September and October 2012. The peak of 200 curlews in December 2012 represents approximately 5% of the Humber Estuary population, and is substantially outside the thresholds for international and national importance for curlew, which are 8,400 and 1,400 respectively. The peak counts of curlews recorded throughout the survey period exceeded the 1% threshold indicating local value on nine surveys (from a total of 35 surveys); on one occasion in February 2012, four in March 2012, one in December 2012, two in February 2013 and one in March 2013.

In contrast there were no records of curlew on the larger HAV2 site until the 2013/4 surveys, where they have been recorded on four of the seven visits so far in one field to the west of Newton Garth. In all cases these numbers have not been significant (no more than 20 individuals).

Table 6. HAV1 (LDO Site) Wintering Bird Survey Summary of Results (SPA Qualifying Species Only)

Date	Bird Species					
	Golden Plover	Curlew	Lapwing	Mallard	Redshank	Teal
28/11/2011	5000	11	69			
29/11/2011	500	26	100			
20/12/2011		1	55			
29/12/2011		19				
05/01/2012	630		350			
16/02/2012		79	24			
25/02/2012		31		4		
06/03/2012		72		2		
11/03/2012		55		4		
15/03/2012		68				
20/03/2012		87			1	
27/03/2012		3		2		
04/04/2012		5				
27/04/2012				7		2
13/05/2012						
27/05/2012						
17/06/2012						
29/06/2012						
13/07/2012				4		
30/07/2012						
24/08/2012						
29/08/2012						
22/09/2012						
28/09/2012	300	3		2		
25/10/2012		1				
29/10/2012						
19/11/2012						
26/11/2012			100	15		

10/12/2012						
17/12/2012		200				
09/01/2013						
28/01/2013						
15/02/2013		94				
27/02/2013		51				
08/03/2013		54				
19/03/2013		130				
04/04/2013				3		
18/04/2013						
16/10/2013		2				
30/10/2013		3		2		
12/11/2013		10		3		
25/11/2013			1			
09/12/2013		9				
20/12/2013		2	11			
07/01/2014		60	100			
Mean max	1607.5	43.04	90	4.36	1.00	2.00
Days present	4	25	9	11	1	1
% days present	9%	56%	20%	24%	2%	2%

Table 7. HAV2 (Wider Hedon Haven) Site Wintering Bird Survey Summary of Results (SPA Qualifying Species Only)

Date	Bird Species				
	Golden Plover	Curlew	Lapwing	Dunlin	Ringed Plover
28/11/2011					
29/11/2011					
20/12/2011					
29/12/2011					
05/01/2012					
16/02/2012					
25/02/2012					

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06/03/2012					
11/03/2012					
15/03/2012					
20/03/2012					
27/03/2012					
04/04/2012					
27/04/2012					
13/05/2012					
27/05/2012					
17/06/2012					
29/06/2012					
13/07/2012					
30/07/2012					
24/08/2012					
29/08/2012	2000			5	21
22/09/2012	150				
28/09/2012	58				
25/10/2012					
29/10/2012					
19/11/2012	58		52		
26/11/2012					
10/12/2012					
17/12/2012					
09/01/2013					
28/01/2013			89		
15/02/2013					
27/02/2013					
08/03/2013					
19/03/2013					

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04/04/2013					
18/04/2013					
16/10/2013		20			
30/10/2013					
12/11/2013		14			
25/11/2013		16			
09/12/2013					
20/12/2013		12			
07/01/2014					
Mean max	566.5	15.5	57	5.00	21.00
Days present	4	4	3	1	1
% days present	9%	9%	7%	2%	2%

4.3.2.11. Analysis of SPA and Ramsar Birds Records

The area covered by Policy S6 part b does not support any of the breeding species identified under Article 4.1 of the SPA citation. The only wintering species recorded that are listed under Article 4.1 is golden plover. Species recorded that qualify under Article 4.2 were dunlin and redshank. The other water birds recorded are part of the qualification under Article 4.2 forming part of the '*international important assemblage of birds*'.

The high-tide bird surveys reveal that the Hedon Haven site was used sporadically by SPA and Ramsar birds for roosting/ loafing at high tides when the mudflats are flooded and are not available as a food resource. Only golden plover (*Pluvialis apricaria*), lapwing (*Vanellus vanellus*) and curlew (*Numenius arquata*) were recorded in numbers that are considered to be significant in an estuary context (Natural England consider significant number to be any record that represent 1% or more of the Humber Estuary population).

The majority of records were from within one area (HAV1) of the Hedon Haven site, where 38 observations of relevant species were made compared with twelve from the elsewhere (HAV2) within the site. Within the HAV2 portion of the site only two species, golden plover and mallard were recorded on more than one occasion during the 38 visits.

Only one significant record was made within the HAV2 element of the site, that of a flock of c. 2,000 golden plover. The record was made during the late summer (August 28th) in a part of the site which, at the time, was being ploughed and therefore provided a short-lived opportunity for feeding on invertebrates exposed by the ploughing.. During the winter of 2012/13 no golden plover were recorded across the survey area.

Within HAV1 the most frequently recorded species was curlew, which was recorded on 47% of visits. All records of curlew were from within HAV1. No curlews were recorded in HAV2 in the winters of 2011/12 and 2012/2013. Curlew were recorded in HAV2 in the 2013/14 surveys, but in small numbers.

Observations made across the entire 45 surveys showed that the majority of the birds alighting on the site were recorded flying from the south and are thought to have originated from the Paull Holme Strays managed realignment area. Few birds were seen to fly directly from the nearest part of the SPA up and over the flood bank and into the site.

4.3.2.12. The Structure and Function of the Hedon Haven Site

The site has a structure that provides the birds with a primary key function; that of a high tide roosting/ loafing site. The site also provides limited feeding habitat for water bird (specifically curlew). These two functions are discussed in more detail below.

4.3.2.13. High Tide Roosting/Loafing

The open structure of the arable fields that make up the majority of the land-use within the Hedon Haven site offers the function of a roosting/ loafing habitat available for SPA/Ramsar birds when, at high tide, they are forced off their intertidal feeding areas within the SPA. The farmland close to the north bank of the estuary is now virtually all arable with very little permanent pasture, or livestock farming. All of this land may at one time or another act as functional habitat for bird from the adjacent Humber Estuary SPA and Ramsar site. This function is mainly confined to the winter months when the arable crops have been cultivated and the resulting open structure creates long sightlines where the birds can see approaching predators. At other times, the structure required by the birds is not present because the height of the crops interrupts sightlines and the roosting/ loafing function is lost.

Roosting/ loafing sites are important to ensure that birds are not being energetically compromised by the flight time needed to find a suitable area. Along the north coast of the Humber, the key land use is arable. It has been calculated that the 240 ha of the site represents approximately 1.3% of the available arable land within 7 km (zone of influence of birds for the Humber Estuary international sites as detailed in the Stage 1 Screening) of the edge of the SPA boundary between Hedon Haven and the mouth of the Estuary. However as the most relevant conservation objective for the site is to maintain the distribution of features of the site, the loss of functional habitat is considered within the context of the distribution of birds on adjacent parts of the estuary and the availability and suitability of functional habitat between Hull and Cherry Cobb Sands. Within this area Policy S6 part B will lead to an extension of the industrial urbanised part of the north bank extending from the city of Hull to Saltend. This area affords very limited opportunities for high tide roosting although provision was made for high tide roosting within the Hull Green Port LDO, located approximately 1km to the west of the area covered by Policy 6 part B. With the exception of Paull village the functional land to the south-

east of the area covered by Policy S6 part B is virtually all arable land with a very low density of settlements close to the Humber. This is because nearly all of the settlement are concentrated along the A1033 road which is approximately 3 km to 5 km north of the estuary. This land is currently in agricultural use (primarily arable) and is not allocated for any other uses in the plan period (other than limited residential in-fill around existing settlements). The area is vulnerable to flooding and also has poor infrastructure. Therefore the vast majority of this land is unlikely to be developed in the foreseeable future. It will therefore remain suitable as functional land subject to the agricultural regimes being favourable.

The bird data collected to date does not indicate that land associated with Hedon Haven is used in preference to the other roosting/ loafing sites in the area (*i.e.* other open arable fields within the locality). Indeed the low frequency of observation for most species shows that the site does not regularly support SPA/Ramsar birds. The populations of SPA/Ramsar birds are evidently roosting on other sites. The fact that this site is not used preferentially by the SPA birds is supported by the difference in the records between the winters of 2011/12 and 2012/13. During the first winter the HAV1 element of the site was found to support significant numbers (>1% of the Humber population) of roosting golden plover on four days, whereas in the winter of 2012/13 no golden plover were recorded at any time across the site. It is interesting to note that the winter of 2012/13 was very wet and the fields were often noted by the surveyor as being waterlogged, conditions that are ideal for wetland birds. This further supports the conclusion that other areas of land are used in preference to land within the site.

4.3.2.14. Feeding Habitat

The vast majority of the records of water birds at Hedon Haven were roosting/loafing at high tide (see above). However, there were some records of feeding curlew on HAV1 at high tide, with usage generally confined to the area associated with the flood bank and the western portion of the site closest to the Salt End mudflat complex. Given that curlew were not recorded feeding on HAV1 with any consistency across the survey period, it is concluded that the species is not entirely dependent on it, and that it simply forms part of the wider arable farmland resource in the Humber Estuary, exploited by curlews on occasion at high tide when their preferred mudflat feeding areas are unavailable.

Modern arable management uses a crop rotation system which in the farmland close to the Humber estuary is typically dominated by winter wheat with a large secondary component of oil seed rape and lesser amounts of barley and other crops. The age and type of a crop in a particular field at a particular time will effect its suitability for birds from the estuary. As discussed above in respect of curlew, while some feeding behaviour was observed during the surveys, the arable fields support a low biomass of soil infauna (the aggregate of organisms that burrow into and live in the ground). This is primarily due to the combination of pesticides and low organic content which result in a low biomass of invertebrates. A number of studies show that arable land, particularly that which is intensively farmed, is of very limited value as a feeding resource to wintering waders (EU 2009)¹⁴.

Golden plover wintering populations, for example, are known to favour a mix of intertidal mudflat habitat and open ground rich in invertebrates for feeding, particularly wet grasslands and pasture rich in earthworms (*Lumbricidae*) and a variety of other groups including beetles and molluscs (EU 2009).

Studies of earthworm biomass have shown that wheat fields have a much lower number of earthworms than that of open pasture or mixed-use fields, with up to 75% fewer earthworms and significantly lower diversity of species (Schmidt *et al.* 2001)¹⁵. A more recent study by Ernst and Emmerling (2009)¹⁶ corroborates this conclusion in reference to traditional ploughing regimes, such as that in evidence at Paull. Additionally,

¹⁴ EU Technical Report 2009: Natura 2000 Technical Report – 2009 – 034: Golden Plover; http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/docs/Golden%20Plover%20EU_MP.pdf (Collates multiple scientific reports)

¹⁵ Schmidt O., Curry J.P., Purvis G. & Clements R.O. (2001) Earthworm communities in conventional wheat and low-input wheat-clover intercropping systems. *Annals of Applied Biology*, 138, 377-388 at monocropping

¹⁶ Ernst G. & Emmerling C. (2009) Impact of five different tillage systems on soil organic carbon content and the density, biomass, and community composition of earthworms after a ten year period. *European Journal of Soil Biology*, 45, 247-251

studies have shown that management regimes including fertiliser and pesticide use, common in modern farming, can have a significant negative effect on ground beetle numbers (Kromp 1999)¹⁷.

4.4. Assessment of Adverse Impact Upon Integrity

As mentioned above, site integrity has been defined as the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

The land at Hedon Haven is located at the north-western end of an extensive area of farmland on the north bank of the Humber estuary. The farmland close to the north bank of the estuary is now virtually all arable with very little permanent pasture, or livestock farming. All of this land may at one time or another act as functional habitat for birds from the adjacent Humber Estuary SPA and Ramsar site. The whole of this area can therefore be considered to be functional habitat. The land is mainly used for high-tide roosting and loafing. Many fields are large, which is a favourable feature for roosting and loafing birds as it affords them good opportunities to see predators approaching. In addition to the roosting/loafing use some species such as Lapwing, Curlew and Golden Plover also use the functional land for feeding, probably principally on earthworms. Arable fields are however, a sub-optimal habitat as a feeding resource because modern arable management results in a soil with a very low organic content compared to permanent grassland. Consequently the invertebrate biomass available as food for wading birds is considerably less in arable fields than in permanent grassland. The use of this functional land is most likely to be by birds which are feeding on adjacent parts of the estuary within a few kilometres of the fields used. Roosting birds will avoid situations in which the vegetation cover allows ground predators such as stoats to conceal their approach. Winter wheat is therefore suitable for roosting birds during the autumn and winter when the small, thin, regular nature of the sward affords the birds good views of approaching predators. Suitable sites also need good sight-lines uninterrupted by features such as hedgerows and woodlands.

Within the area of the Humber where Hedon Haven is located, a key feature is the managed realignment site at Paull Holme Strays. This was created in 2003 by the Environment Agency and since then has accreted estuarine sediment. It is only wholly covered by the higher part of the monthly tidal cycle and therefore offers some high tide roosting and feeding opportunities for birds from the adjacent mudflats. It regularly attracts large numbers of waders and wildfowl including up to 20,000 Golden Plover. These birds sometimes leave Paull Holme Strays due to tides or other influences and disperse to the surrounding farmland. Observation for the Paull LDO surveys indicated that some birds using the Hedon Haven site originated from Paull Holme Strays.

The data from the bird surveys for HAV1 shows that the southern part of the Hedon Haven site (HAV1) is used on an occasional basis by birds from the SPA / Ramsar site. The species occurring in numbers considered by Natural England to be significant (>1% of the Humber Estuary population) are Lapwing, Curlew and Golden Plover. The number present and frequency of records suggests that these birds use the site occasionally, almost certainly as part of the wider matrix of arable land in the area surrounding this part of the Humber estuary focussed on Paull Holme Strays. The data shows that the birds favour the southern part of the Hedon Haven site with significant numbers only recorded on one occasion in the northern (HAV2) part (2,000 Golden Plover). This record was related to the birds feeding while the field was being ploughed. This number was therefore not typical of that particular field and could reasonably be expected to occur in any arable field in the area which was being ploughed.

The proposed development of the Hedon Haven site would cause the loss of part of the functional habitat used by birds from the adjacent areas of the Humber estuary SPA / Ramsar site. Due to the variability in both space and time of the bird usage of the functional land within the wider area it is difficult to conclude with any scientific certainty what effect the loss of this land could have on the birds which are features of the Humber estuary SPA / Ramsar. However it is possible that it could effect the distribution of birds in this part of the estuary and that this could be contrary to the Conservation Objective for the SPA which states that:

'Subject to natural change, to maintain or restore:

¹⁷ Kromp B. (1999) Carabid beetles in sustainable agriculture: a review on pest control efficacy, cultivation impacts and enhancement. *Agriculture, Ecosystems & Environment*, 74, 187-228

- *the extent and distribution of the qualifying features within the site.'*

Therefore an adverse effect upon the integrity of the site, as a result of allocating 240ha of land in this location, cannot be ruled out. With this conclusion it is necessary to consider how this potential adverse effect could be mitigated, and how the draft policy could be revised to avoid the Proposed Submission Local Plan having an adverse impact on the integrity of the Humber Estuary SPA/Ramsar site.

5. Mitigation

A HRA Stage 2 Appropriate Assessment has been undertaken of the East Riding of Yorkshire Local Development Plan to establish if there is an adverse effect on the integrity on the Humber Estuary international sites. This has been completed on Policy S6, Part B, as drafted in the Draft Strategy Document. The HRA Stage 1 Screening deemed that part B of Policy S6 alone has the potential for a likely significant effect on of the Humber Estuary SAC, SPA and Ramsar.

Policy S6 will be implemented through the Allocations Document and associated documents and plans. In accordance with the Habitats Regulations, all land use plans that are not necessary for site management and/or its interest features must be subject to the HRA process. As such East Riding of Yorkshire Council is committed to completing the necessary stages of the HRA process on the Allocations and any other plans through which development may be delivered.

The Local Plan Strategy Document provides the policy for how developments will be assessed at a lower level. Policy ENV4 of the Local Plan Strategy Document (see below) ensures that any development which may have a likely significant effect on an international site will be subject to the HRA process as outlined in section 1.3 of this assessment.

Policy ENV4: Conserving and Enhancing Biodiversity and Geodiversity

A. Proposals that are likely to have a significant effect on an international site will be considered in the context of the statutory protection which is afforded to the site.

B. Proposals that are likely to have an adverse effect on a national site (alone or in-combination) will not normally be permitted, except where the benefits of the development clearly outweigh both the impact on the site and any broader impacts on the wider network of national sites.

C. Development which would result in loss or significant harm to a Local Site or habitats or species supported by Local Sites, whether directly or indirectly, will only be supported if it can be demonstrated that there is a need for the development in that location and that the benefit of the development outweighs the loss or harm. Where loss or harm cannot be prevented or adequately mitigated, as a last resort, compensation for the loss/harm must be agreed. Development will be refused if loss or significant harm cannot be prevented, adequately mitigated against or compensated for.

D. Proposals should implement the *East Riding of Yorkshire Biodiversity Action Plan* (ERYBAP) and further the aims of designated Nature Improvement Areas (NIAs) and other landscape scale biodiversity initiatives. To optimise opportunities to enhance biodiversity and geodiversity, proposals should seek to achieve a net gain in biodiversity and will be supported where they:

1. Conserve, restore, enhance or re-create biodiversity and geological interests including those Local Sites and Priority Habitats and Species as identified in the ERYBAP.
2. Safeguard, enhance, create and connect habitat networks in order to:
 - i. Protect, strengthen and reduce fragmentation of habitats;
 - ii. Create a coherent ecological network that is resilient to current and future pressures;
 - iii. Conserve and increase populations of species; and
 - iv. Promote and enhance green infrastructure.

Policy ENV4 Part 1 B ensures that the plan does not support any development which would have an adverse effect upon the integrity on a international site.

This Stage 2 Appropriate Assessment has identified that the 240ha of land at Hedon Haven is used as functional land by birds associated with the SPA/Ramsar. The use of this area of the functional land is however, not continuous or regular as it forms part of a much larger extent of functional land in this part of the estuary which the birds use. It is therefore considered that the loss of the whole of the 240 ha could have an impact upon the local distribution of birds on the adjacent estuary. This would be contrary to the conservation objective to maintain the distribution of features with the Humber Estuary SPA. Therefore it cannot be concluded that the development of the whole 240ha of land at Hedon Haven would not have an adverse effect on the integrity of the Humber Estuary SPA / Ramsar. In order to be confident that there will not be an adverse effect upon integrity it is therefore necessary to mitigate for the loss of the functional land.

Mitigation for the loss of functional land was agreed as part of the Paull LDO. The bird data gathered for HAV1/2 shows that a significant number of golden plover were recorded only once in the HAV2 site with limited numbers of lapwing and no records of curlew. Indeed, the only significant record for golden plover was recorded in the area identified for avoidance measures within the Paull LDO indicating that the HAV2 site is of limited value for birds associated with the SPA although the wider HAV1/2 does offer some value to the birds. The additional numbers of birds using the wider site are not considered to be significantly greater than for the LDO site (HAV1). It is therefore considered that the mitigation agreed for LDO will also be sufficient to avoid Policy S6 part B having an adverse impact upon the integrity of the Humber estuary SPA/Ramsar. The mitigation will provide alternative habitat for curlew, golden plover and lapwing.

The rationale as to the size and type of avoidance measures for each site is given below.

5.1. Hedon (Newton Garth)

This site was chosen for mitigation measures as it is in close proximity to the Humber Estuary, and adjacent to open farmland on the south side. This maintains access to the flight path to the important high tide roost site at Paull Holme Strays, which is circa 1.5km to the south. The site is also located away from potential source of disturbance such as public footpaths.

The site will deliver 36.7 hectares of enhanced habitat of which 32 hectares will be grassland. This comprises a core area of 8 hectares plus a 150 m buffer zone. The buffer zone is there to provide the birds with good views of any approaching ground predators. This area of land is in excess of the minimum effective field size of 10 hectares preferred by curlew and golden plover and the 16 hectares preferred by Lapwing (Kirby etc al, 2000). On the western side of the mitigation area an area of 4.7 hectares with the outer 60m of the 150m buffer will be hard standing for industrial uses with low disturbance to birds. These permitted uses include storage of components and material with minimal use of personnel on foot. The residential properties and land at Newton Garth comprise 1 hectare, which is within the 150m buffer but, not counted in the figures for enhanced habitat. The residential area will be fenced off from the mitigation area to prevent potential intrusion by people or dogs which could cause disturbance to birds.

As the site is within the ownership of ABP the securing and delivery of the avoidance measures can be achieved. The management of the site will enhance the habitat for wintering birds and ensure that sufficient carrying capacity is achieved. Wet grassland (converted from arable farmland) will be created through management to provide habitat for feeding and roosting curlew, golden plover and lapwing throughout the winter months.

The management of the mitigation sites will be secured to ensure that the key conditions in terms of sward height, hydrology and lack of disturbance are maintained at a favourable level. Through the LDO process the detailed scheme for the site is currently in development. It has been established that the current drainage within the site can be altered to facilitate the creation of wet grassland. The scheme is therefore considered to be technically feasible and is expected to be delivered during 2014.

The site was chosen in preference to an estuary fronting site in HAV1 due to the current levels of disturbance from the footpath on top of the flood embankment. This currently has a high level of usage for dog walking and it is not considered that this activity can be adequately controlled or mitigated for.

5.2. Hedon Haven

This site was chosen for avoidance measure as it is immediately adjacent to Salt End mudflat complex and is in close proximity to the land lost. It will provide and maintain feeding and roosting sites which are directly connected to the adjacent area of mudflats which are covered at high tide. The site will deliver circa 2.5 hectares of wet grassland adjacent to an area of former intertidal lagoons, mudflat and upper saltmarsh. The site will be specifically managed for high tide roosting with some enhancement for feeding waders.

5.3. Policy S6

The original iteration of Policy S6 stated that:

240 hectares of land will also be allocated at Hedon Haven through the Allocations Document or a Neighbourhood Development Plan to cater for the expansion of the Port of Hull.

As identified using the precautionary principle the land is considered to offer some value as functional land to birds associated with the Humber Estuary SPA/Ramsar site and therefore should the full 240 hectares be allocated an adverse effect on integrity cannot be ruled out. Therefore Policy S6 has been amended to state that a minimum of 39 hectares of land will be required for mitigation. The area of land allocated for Employment land use under Policy S6 part B is modified to 205ha with 4.7 hectares of this being only for low disturbance uses within the outer buffer of the mitigation area.

Policy S6 therefore also includes for the following:

205 hectares of land will also be allocated at Hedon Haven through the Allocations Document or a Neighbourhood Development Plan to cater for the expansion of the Port of Hull. The provision of at least 39ha of enhanced habitat will be required to mitigate the impact of development on the adjacent Humber Estuary Special Protection Area and Ramsar Site. In addition, proposals must also ensure that they have no adverse effects on the integrity of the Humber Estuary Special Area of Conservation.

On this basis, it is concluded that Policy S6 part B of the Proposed Submission Strategy Document will have no adverse effect on the integrity of the Humber Estuary SPA/Ramsar.

6. Assessment of In Combination Effects

In the Stage 1 screening assessment the consultation with the surrounding authorities identified other projects or plans which have or are going through the HRA process as they were considered to have the potential to cause adverse effects on the three international sites.

The assessment of In Combination Effects in this Stage 2 Appropriate Assessment considers only those plans and projects which could have an effect in combination with Policy S6 part B. It is therefore limited to plans and projects which could affect the Humber estuary. The in-combination assessment is made with regard to the policy after it has been amended and mitigation included. The in combination assessment is needed at this stage for the consideration of any residual impacts after the adverse impact of the policy alone has been mitigated for.

There are currently no other plans or projects than those outlined in Table 8, which have been identified as having the potential to cause a likely significant effect or adverse effects upon the integrity of Humber Estuary SAC, SPA or Ramsar.

Table 8 summarises the projects and plans identified and whether there is an anticipated in combination effect with the Local Plan Strategy Document Policy S6 part B.

Table 8. HRAs Undertaken for Other Policies and Plans Included in this Appropriate Assessment

Statutory Body	Title of HRA	Findings of HRA	In-Combination Assessment
Hull City Council & East Riding of Yorkshire Council	Waste Recycling Group. Energy from Waste facility, Saltend.	The Appropriate Assessment screening identified construction phase disturbance as the only likely significant effect which would be mitigated through standard construction practices.	The Appropriate Assessment screening identified construction phase disturbance as the only likely significant effect, such as noise and vibration which will be of a short term and temporary in nature and therefore no 'in combination' impacts are expected
Hull City Council	Hull Quay 2	The Appropriate Assessment screening identified construction phase disturbance as the only likely significant effect, which would be mitigated through standard construction practices.	The Appropriate Assessment screening identified construction phase disturbance as the only likely significant effect, such as noise and vibration which will be of a short term and temporary in nature and therefore no 'in combination' impacts are expected
	Local Transport Plan 3	Potential impacts arising from the Plan included water quality, tidal area, breeding and feeding areas for birds and also disturbance to birds. However, the objectives were assessed as being unlikely to have a significant effect. Individual HRAs will be undertaken for projects where the site is within 2 km of an International site or there is a	The East Riding of Yorkshire Local Plan Strategy Document policy S6 will lead to potential impacts at Hedon Haven associated with the loss of functional land. The local transport plan 3 also identified potential impacts associated with the loss of functional land, however, both the strategy document and the transport

		potential pollution pathway and measures recommended to avoid the above impacts upon the International sites.	plan provide protection to the international sites therefore no in-combination effects are anticipated.
	Holderness Road Corridor Area Action Plan Appropriate Assessment Screening	A potential recreational impact was identified due to the areas proximity to the Humber Estuary SAC, SPA and Ramsar site. However, the closest stretch suitable for recreation is 3 km from the area and already has facilities to manage recreational pressures. Overall it was concluded that there would be no likely significant effects.	The Holderness Road Corridor Area action Plan appropriate assessment only identified recreation as a potential impact. Policy S6 will lead to development of employment land at Hedon Haven and both sites are over 3km apart, therefore there is no potential for in combination effects.
East Riding of Yorkshire Council	Swinefleet Flood Defence Improvement Scheme Appropriate Assessment	The Appropriate Assessment found that with suitable mitigation there would be no likely significant effects to international sites.	Swinefleet is over 30km from Hedon Haven and will include appropriate mitigation therefore no in-combination effects are anticipated.
	Paull LDO Habitats Regulations Assessment Ref: 47062982	The assessment concluded that with the implementation of avoidance measures which was the creation of habitats for birds that there would be no likely significant effects.	The Paull LDO is included within the area identified in the strategy at Hedon Haven and therefore there is no potential for in-combination effects are anticipated.
North East Lincolnshire Council	Grimsby Town Football Club	Mitigation required as the site of the new football stadium is used by SPA and Ramsar birds associated with the Humber Estuary. Mitigation to take the form of a Section 106 agreement or planning condition with the developers to provide an area of land 37 hectares in size within 1 km of the development site and a management plan to be agreed by North East Lincolnshire Council and Natural England (NE).	There are no in-combination effect as the adverse effects from constructing the new stadium have been mitigated.
	Humber Quays Development (Phase 2)	Likely significant effect through potential noise, vibration and visual disturbance to water birds using the Humber Estuary SPA and Ramsar site during construction and operational phases of development. It would also lead to the loss of terrestrial habitat outside the designated area. It was agreed with NE that there is no potential to directly impact upon habitats within the boundary of the Humber Estuary SAC, SPA and Ramsar site. Precautionary mitigation measures commensurate with the potential impacts have been	Mitigation will be implemented at Humber Quays and for all employment development arising from the Plan, where it is deemed necessary, in order to reduced noise, vibration and visual impacts to acceptable levels in each location, meaning that 'in combination' effects are not likely.

		put in place to minimise the impacts upon water birds and habitats (i.e. qualifying features of the SPA/SAC/Ramsar site).	
	Vireol Bioethanol Plant	The Appropriate Assessment found that after mitigation there would be no likely significant effects to international sites and planning permission was granted.	Policy S6 will lead to the loss of potential functional land, however, mitigation measures will be implemented to avoid these impacts. Therefore no in-combination effects are anticipated.
	Abengoa Bioethanol Plant	The Appropriate Assessment found that after mitigation there would be no likely significant effects to international sites and planning permission was granted.	Policy S6 will lead to the loss of potential functional land, however, mitigation measures will be implemented to avoid these impacts. Therefore, no in-combination effects are anticipated.
	North Moss Lane Industrial Estate	Application for a mixed industrial development (B1, B2 and B8). The HRA screening found that after mitigation there would be no likely significant effects to international sites and planning permission was granted.	No likely significant effects identified were identified and therefore no in-combination effects are anticipated.
	Magna Holdings, Queen's Road, Business Park	Application for a mixed industrial development B1, B2 and B8 business park with ancillary A3 A4 and A5 use. The Appropriate Assessment found that after mitigation there would be no likely significant effects to the Humber Estuary international sites and planning permission was granted.	Given the distance between the sites and the implementation of mitigation no in-combination effects are anticipated.
	Helius, Hobson Way, Biomass Power Station	Application for a Biomass electricity generating station. The Appropriate Assessment found that after mitigation there would be no likely significant effects to the Humber Estuary international sites and planning permission was granted	The East Riding of Yorkshire Hedon Haven is located over 10km from Hobson Way. Given the distance between the site and the implementation of mitigation no in-combination effects are anticipated.
	Katoenatie industrial complex	The Appropriate Assessment found that after mitigation there would be no likely significant effects to the Humber Estuary international sites and planning permission was granted.	The East Riding of Yorkshire Hedon Haven is located over 10km from Katoenatie industrial complex. Given the distance between the site and the implementation of mitigation no in-combination effects are anticipated.
East Lindsey District Council	Louth Canal Wind Energy Development	The assessment concluded that the Development will not adversely affect the integrity of the Golden Plover feature of the Humber Estuary SPA, either alone or in-combination with	The assessment found no affects on the Humber Estuary SPA alone or in combination. Hedon Haven will result in the loss of potential functional land, however, due to the distance

		other plans and projects.	between the sites no in-combination effects are anticipated.
North Lincolnshire Unitary Authority	Fulseas Pumping Station	There are likely to be significant effects on the Humber Estuary international sites but these will be mitigated for by a precautionary method of working.	The East Riding of Yorkshire Hedon Haven is located over 15km from Fulseas Pumping Station. Given the distance between the site and the implementation of mitigation there will be no in-combination effects are anticipated.
	North Lincolnshire Council: Core Strategy Submission Draft (May 2010) Habitats Regulations Assessment: Stage 1 – Screening and Assessment: Stage 2 – Appropriate Assessment, December 2010	The assessment concluded that with the implementation of the mitigation measures identified there would be not lead to adverse effects on integrity of the Humber Estuary SAC, SPA or Ramsar site or the Thorne Moor SAC, the Hatfield Moor SAC or the Thorne and Hatfield Moors SPA.	Although adverse effects were identified at Stage 2 appropriate amendments were made to the strategy policy wording to ensure robust protection to international sites. The East Riding of Yorkshire Local Plan Strategy Document provides protection to international sites. Therefore no in-combination effects are anticipated.
	Lincolnshire Lakes Area Action Plan Options Habitats Regulations Assessment March 2013	The assessment concluded that none of Options A, B, C or D of the Lincolnshire Lakes AAP would lead to likely significant effects on the Humber Estuary SAC, SPA or Ramsar site. However, in order to provide adequate confidence in Option A recommendations should be included within the Area Action Plan. These included restriction of public access, construction noise assessments, inclusion of building screening and avoidance of light spillage.	The adverse effects identified in the Lincolnshire Lakes plan was of disturbance related issues. Policy S6 will result in the loss of potential functional land. Lincolnshire Lakes is also in excess of 25km from Hedon Haven and therefore no potential for in-combination effect as no adverse effects.
	Housing and Employment Allocation Land Development Plan Document (Submission Draft) Habitat Regulations Assessment: Stage 1 (Screening) and Stage 2 (Appropriate Assessment) November 2010	None of the housing sites were predicted to have adverse effects on the Humber Estuary SPA, SAC and Ramsar. With mitigation (Mitigation Strategy Delivery Plan) none of the employment allocations would have an effect on the international sites.	Only one policy was found to have a potential affect on the integrity ofthe Humder Estuary SAC/SPA/Ramsar. This was mitigated through the Humber Mitigation Strategy Delivery Plan which seeks to provide development. Although development at Hedon Haven will also result in the loss of potential functional land the effects associated with the North Lincs allocation and development plan will have been mitigated. Therefore no in-combination effects are anticipated.
	Able UK Area F 2008	As for Fulseas Pumping Station above.	Hedon Haven is located over 7km from Able UK. Given the

			distance between the site and the implementation of mitigation there will be no in-combination effects are anticipated.
	Able UK 2002 URSA Glass wool Factory	As for Fulseas Pumping Station above.	Hedon Haven is located over 7km from Able UK. Given the distance between the site and the implementation of mitigation there will be no in-combination effects are anticipated.
	North Linsley Oil Refinery Car Park.	The results of this HRA are the same as the above although mitigation is also required in relation to the Humber Estuary SAC.	Strategy Policy S6 has been screened as resulting the loss of functional land at Hedon Haven associated with the Number Estuary SPA and Ramsar site and not the SAC. Therefore no in-combination effects are anticipated.
	Able UK 2006	See above including effects relating to the SAC.	Hedon Haven is located over 7km from Able UK. Given the distance between the site and the implementation of mitigation there will be no in
	Able UK 2005	See above including effects relating to the SAC.	Hedon Haven is located over 7km from Able UK. Given the distance between the site and the implementation of mitigation there will be no in

7. Conclusions

This Habitats Regulations Assessment (HRA) Stage 2: Appropriate Assessment has been carried out by Atkins Limited (Atkins) on behalf of East Riding of Yorkshire Council for the Local Plan Strategy Document.

The appropriate assessment concluded that Draft Policy S6 part B, which related to 240 hectares of land at Hedon Haven would result in the loss of land that is used as functional habitat by birds from adjacent Humber Estuary SPA/Ramsar. The appropriate assessment could not conclude that the policy as originally proposed would not have an adverse effect upon the integrity of the international sites due to the potential to affect the distribution of the birds in the adjacent part of the estuary which would be contrary to the conservation objective to maintain the distribution of the features of the SPA.

In order to be able to conclude no adverse upon integrity it is therefore necessary to mitigate for the loss of the functional land. Mitigation measures have been identified in the form of enhanced habitat at Newton Garth and Hedon Haven. These sites will provide wet grassland which is of a higher value as functional land than the arable land which is being lost. The Proposed Submission Local Plan policy S6 part B and its supporting text has been amended to reduce the size of the allocation from 240 hectares to 205 hectares (including the low impact use in the mitigation buffer). The supporting text for the policy is also modified to recognise the need for the provision of the mitigation area. This appropriate assessment can therefore conclude that the Proposed Submission Policy S6 part B, with the delivery of the appropriate mitigation specified, will not have an adverse effect upon the integrity of the Humber Estuary SPA/Ramsar.

Atkins Ltd
Chadwick House
Birchwood Park
Cheshire
WA3 6AE

Email
Telephone
Fax

alex.watson@atkinsglobal.com
01925 238000
01925 238500

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