



# Humber Flood Risk Management Plan

## Habitats Regulations Assessment

December 2022

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

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# 1. Non-Technical Summary

## Introduction

- 1.1 This is the Habitats Regulations Assessment (HRA) of the Humber River Basin District (RBD) Flood Risk Management Plan (FRMP). The HRA has been undertaken in accordance with The Conservation of Habitats and Species Regulations (The Habitat Regulations) 2017 (as amended) and considers the potential implications of the FRMP on designated European conservation sites. These sites contain species and habitats that are important at a European scale.
- 1.2 The FRMP, covering the years between 2021 and 2027, seeks to manage significant flood-related issues in the Humber RBD, including 37 specifically identified Flood Risk Area. It covers an area of 26,100km<sup>2</sup> and extends from the West Midlands in the south, northwards to North Yorkshire and from Staffordshire in the west to part of Lincolnshire and the Humber Estuary in the east. The Humber FRMP seeks to reduce a range of flooding threats, including from rivers, the sea, surface water, groundwater and sewers / canals / reservoirs.
- 1.3 The need for protecting human receptors should be viewed in the context of the environmental challenges present in the Humber RBD. Many geographic areas in the RBD are experiencing growth and need to mitigate climate change. Therefore, many freshwater and coastal habitats in the RBD, important in sustaining wintering wildfowl, fish populations and terrestrial species (e.g. otters), are subject to a wide range of human impacts, such as recreational pressure, reduced water flow / level, declining water quality and coastal squeeze. This HRA assesses the potential for the Humber FRMP to result in Likely Significant Effects (LSEs) and, where applicable, adverse effects on the integrity of European sites (i.e. the ability of those sites to achieve their conservation objectives).

## Methodology

- 1.4 The Habitats Regulations 2017 (as amended) set out the specific assessment steps required for the HRA process.
- 1.5 The first step in the sequence of tests, often referred to as HRA screening, establishes whether a more detailed analysis known as Appropriate Assessment is required. The purpose of HRA screening is to determine, in view of the best available scientific knowledge, whether a plan or project, either alone or in-combination with other plans or projects, could result in LSEs on European sites in view of their Conservation Objectives. If the Competent Authority determines that no LSEs are present (both alone and in-combination), then no further assessment is necessary.

## Test of Likely Significant Effects

- 1.6 All measures included in the Humber RBD were assessed for LSEs on the European sites across and within 10km of the RBD. None of the measures were identified to result in LSEs on any European site for a range of reasons, including that they are too non-specific to assess meaningfully, already being implemented (thus having undergone HRA previously), being subjected to a separate consenting process (as applies to Local Flood Risk Management Plans, Shoreline Management Plans (SMP's) and Coastal Strategies), desk-based and involving no physical activity on the ground, remote from vulnerable sites or worded such they are about 'investigating', 'reviewing' and 'identifying opportunities'.
- 1.7 One group of measures was found to commit to physical work on the ground by 'delivering' or 'implementing' flood management interventions, such as coastal defence structures or natural flood management approaches. The broad location of some measures, is known, enabling a broad assessment of their proximity to European sites and potential linking impact pathways. However, detailed HRA (including Appropriate Assessment) was deferred to either lower-tier plans or the planning application stage when details on the nature of proposals are available. This approach was adopted to account for the strategic (and thereby necessarily non-specific) nature of the FRMP, while also identifying the measures with the highest impact potential on European sites.
- 1.8 This document also identified that a range of measures in the Humber FRMP have the potential to improve the hydrological condition of European sites across the RBD, particularly in the River Derwent SAC in terms of restoring natural flows and River Derwent SPA / Ramsar, which is increasingly subject to prolonged winter flooding, as well as the River Mease SAC in terms of improving water quality and restoring natural flows. Overall, it was shown that the FRMP represents a positive framework that will help achieve the Conservation Objectives of SAC / SPA / Ramsar in the region.

## Other Plans and Projects

- 1.9 The potential for the FRMP to result in LSEs on European sites in-combination with (i.e. when considered alongside) other plans and projects was also assessed. Many such plans are proposed across the RBD, which are associated with their own impact potential. For example, local authorities are proposing a minimum of 610,000 new dwellings and as well as employment land within the timescales of their current Local Plans and Core Strategies. There is also a potential for cumulative impacts with Drought Orders and Permits, the Environment Agency National Draught Plan and SMPs.
- 1.10 Potential in-combination LSEs with Local Plan development were excluded due to most measures not being negatively linked to European sites, the fact that some measures are only included for completeness being driven by entirely separate plan processes, and the strategic nature of the FRMP, meaning that those measures with

potential interactions with European sites depend upon considerable further development before the presence of any impact pathways can be clearly identified.

## Conclusion

- 1.11 LSEs of the FRMP on all European sites, both alone and in-combination, were excluded for all measures and an Appropriate Assessment was not required. This was based on various factors, including some measures being carried over from the cycle 1 FRMP (which would have been subject to the statutory consenting process, including HRA), already implemented, not associated with impact pathways linking to European sites or too non-specific (either in terms of specific location, their nature or both) to allow for a detailed, meaningful assessment.
- 1.12 Notably, 25 measures were screened out at the strategic FRMP level but recommended for down-the-line HRA since the measures are sufficiently broadly expressed that they could be delivered without adverse effects but this will need to be reassessed as actual schemes are developed. As the details of potential schemes are developed towards the planning application stage, the HRA process will ensure that adequate mitigation measures, where relevant, are incorporated and the integrity of European sites will be protected.

## 2. Introduction and Approach to Assessment

### Background and Description of the Humber River Basin District

2.1 The Humber River Basin District is 1 of 10 river basin districts across England. This river basin district covers an area of 26,100 square kilometres and extends from the West Midlands in the south, northwards to North Yorkshire and from Staffordshire in the west to part of Lincolnshire and the Humber Estuary in the east. It ranges from the upland areas of the Peak District, South Pennines and the North York Moors with their internationally important peat lands, across the Derbyshire and Yorkshire Dales and the fertile river valleys of the Trent and Ouse, to the free-draining chalk of the Yorkshire and Lincolnshire Wolds. There are 16 management catchments that make up the river basin district which include many interconnected rivers, lakes, groundwater and coastal waters.

2.2 In total more than 12.3 million people live and work in towns, cities and villages within the district. The population is split between the large urban conurbations of the great cities of the Midlands and West Yorkshire and small communities within very rural areas. The main urban centres in the district include:

- Birmingham
- Leeds
- Bradford
- Sheffield
- Hull
- Grimsby
- Derby
- Leicester
- Nottingham

2.3 The Humber RBD has a rich diversity of wildlife and habitats, supporting many species of global and national importance. There are 31 Special Areas of Conservation (SAC) sites, 9 Special Protection Areas (SPA) and 4 Ramsar sites (Designated wetlands sites). These include the Humber Estuary, Lower Derwent Valley, Derbyshire, Malham Tarn and Midland Meres and Mosses.

2.4 Within the Humber RBD there are:

- 38 FRAs for significant risk of flooding from main rivers and the sea
- 12 FRAs for significant risk of flooding from surface water
- 2 SAs for significant risk of flooding mainly from main rivers and the sea



2.5 The Environment Agency leads development of the Flood Risk Management Plans (FRMP) for River Basin Districts in England and delivery of flood warning services. The draft second cycle FRMP is a plan to manage significant flood risks in designated flood risk areas (FRAs). The ambition is that the FRMP is a strategic, place-based plan which shows what is happening in flood risk management across the River Basin District. FRMPs focus on the more significant areas of flooding and describe the risk of flooding now and in the future. These plans will help:

- identify actions that will reduce the likelihood and consequences of flooding update plans to improve resilience whilst informing the delivery of existing flood programmes
- work in partnership to explore wider resilience measures, including nature-based solutions for flood and water
- set longer-term, adaptive approaches to help improve the nation's resilience

2.6 This document forms the Habitats Regulations Assessment (HRA) for the Humber FRMP. This document considers the potential effects of the draft FRMP on Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites, either alone or in combination with other plans or projects, and in view of best scientific knowledge.

## Legislative context

2.7 The National Site Network of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) is protected via the Conservation of Habitats and Species Regulations 2017 (as amended, most recently in 2019 to reflect Brexit). These regulations also set out the process for assessing potential adverse effects on such sites, known as HRA (HRA). Paragraph 181 of the National Planning Policy Framework<sup>1</sup> clarifies that, in England, the HRA process is also applied to another category of internationally important wildlife site called Ramsar sites.

2.8 The legislative basis for HRA is set in the Conservation of Habitats and Species Regulations 2017 (as amended). This states that 'A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site'.

2.9 The competent authority that carries out the HRA (in this case the Environment Agency) is required to apply the precautionary principle to European sites and can only adopt a plan once it has been ascertained that it will not adversely affect the integrity of the site concerned. However, even if significant adverse effects on the designated site are predicted, and in the absence of a suitable alternative solution, the plan can still be adopted in exceptional circumstances where there are deemed sufficient imperative reasons of over-riding public interest (IROPI). In such cases, however, compensatory measures must be implemented.

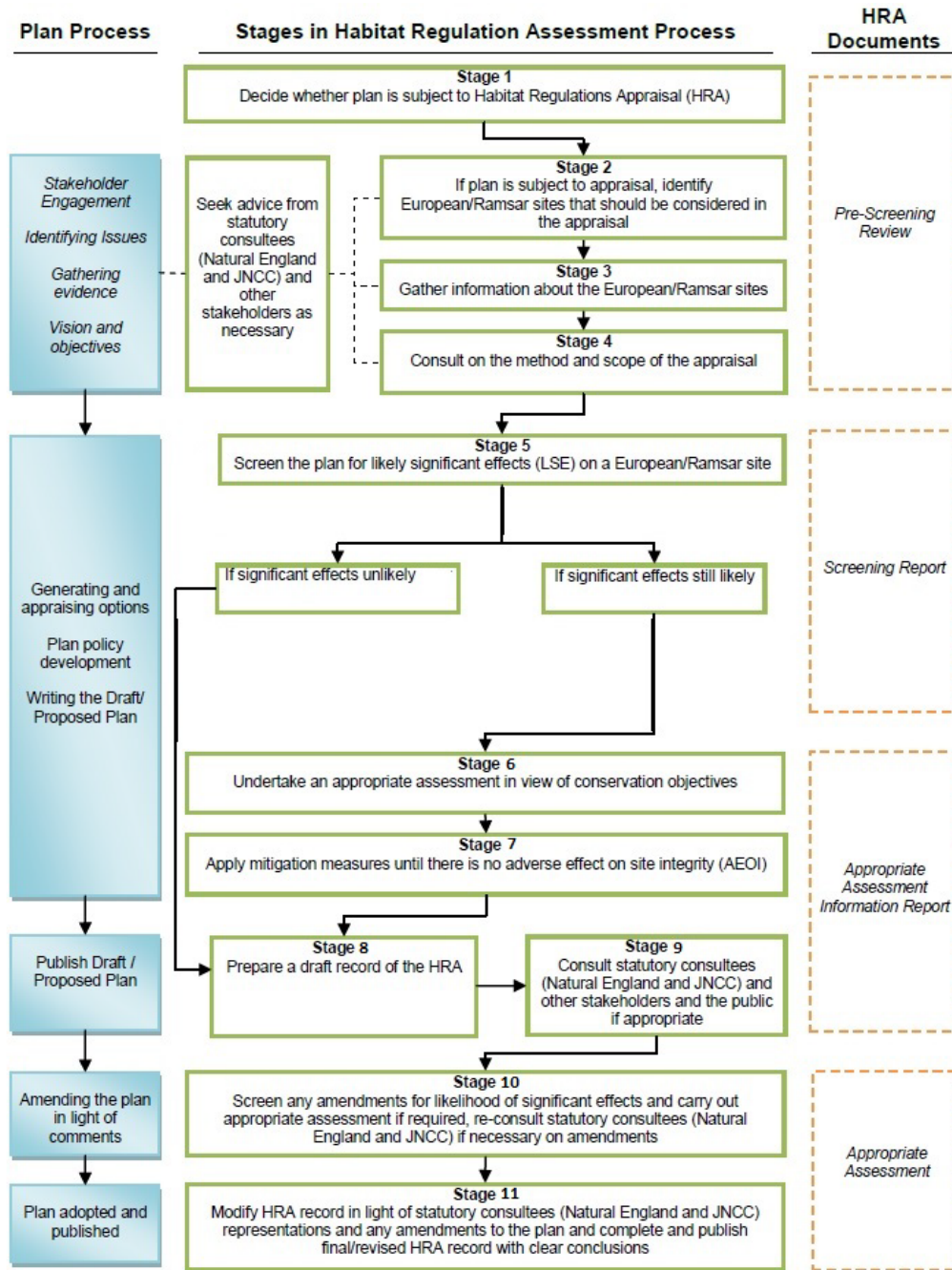
## Overview of HRA process

- 2.10 The Habitats Regulations do not prescribe a particular methodology for carrying out an appraisal of plans or projects. However, it does set out the specific assessment steps involved. In February 2021 the government provided broad guidance on the HRA process<sup>2</sup>. The most detailed guidance on the HRA process in the UK has been produced by Scottish Natural Heritage (now NatureScot). They outline a series of thirteen steps. However, with cognisance of recent case law (refer to Table 1) clarifying when mitigation can be taken into account in the HRA process, the process has been revised to constitute eleven stages (see Figure 1).
- 2.11 A four-stage methodology for HRA would therefore include:
- HRA Stage 1 – screening (including a ‘likely significant effect’ judgement)
  - HRA Stage 2 – appropriate assessment
  - HRA Stage 3 – assessment of alternative solutions
  - HRA Stage 4 – assessment where no alternative solutions exist and where adverse effects remain (i.e. consideration of Imperative Reasons of Overriding Public Interest (IROPI)) and identification of compensatory measures.
- 2.12 The first step in the sequence of tests is to establish whether an appropriate assessment is required. This is often referred to as HRA screening. The purpose of HRA screening is to determine, in view of best available scientific knowledge, whether a plan or project, either alone or in combination with other plans or projects, could have likely significant effects (LSE) on a European site, in view of that site’s conservation objectives.
- 2.13 For this purpose and as a result of case law ‘likely’ means ‘possible’, while a ‘significant’ effect is one which could undermine the Conservation Objectives of a European site. To this end the HRA process applies the ‘Precautionary Principle’<sup>3</sup> to European sites. If the competent authority determines that there are no LSE (including ‘in combination’ effects from other plans or projects), then no further assessment is necessary and the plan or project can, subject to any other issues, be taken forward. If, however, the competent authority determines that there are LSE, or if there is reasonable scientific doubt, then the next step in the process must be initiated and a detailed appropriate assessment undertaken. The purpose of the appropriate assessment is to carry out sufficient scientific investigation to ascertain whether the plan or project, alone or in combination with other plans or projects, will not adversely affect the integrity of European sites, in view of their conservation objectives and considering any design modifications or mitigation (but not compensatory measures, which can only be considered in exceptional circumstances when requirements for the above HRA Stages 3 and 4 have been met). While a judgment over likely significant effects must be precautionary, the court in *R (Boggis) v Natural England* [2009] EWCA Civ 1061 also noted that there must be a ‘real’, rather than a hypothetical, risk to European sites.
- 2.14 This is relevant to the assessment of the FRMP measures; while many measures commit to the production, update and/or delivery of other plans (such as Water Level

Management Plans, WLMPs), or the assessment of options for, or a general commitment to, flood risk management assets in certain locations, the ability to identify 'real' rather than hypothetical impacts is constrained by the fact that considerable further work is needed at lower tiers to develop the plans or schemes in question before specific impact pathways can be identified with any confidence. For example, whether a given WLMP poses a likely significant effect on a given European site will depend entirely on the proposals it contains, which are not set by FRMP measures that commit to updating WLMPs. Similarly, the potential for likely significant effects to arise from 'implementing flood risk management improvements' will vary significantly depending on what is proposed and how it is to be delivered, which may not be determined at the FRMP level; a set-back flood embankment or a flood relief channel may have no implications for a given European site compared to sheet piling in the river.

- 2.15 Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the European site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network. To ascertain whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the plan or project in question:
- 2.16 Over time the term HRA has come into wide currency to describe the overall process set out in the Regulations from screening through to IROPI. This has arisen in order to distinguish the process from the individual stage described in the law as an 'Appropriate Assessment'.
- 2.17 The HRA has been carried out being mindful of the implications of European case law in 2018, notably the Holohan ruling and the People over Wind ruling, both discussed below.

**Figure 1. Stages of the HRA process (adapted from SNH (2015))**



**Figure 1 accessible description**

Figure 1 shows the plan process, stages in Habitat Regulation Assessment process and HRA documents involved in the HRA process.

The first part of the plan process involves stakeholder engagement, identifying issues, gathering evidence and the vision and objectives. Advice may be needed from statutory consultees, such as Natural England and JNCC, and other stakeholders as necessary. The stages include:

1. Decide whether the plan is subject to Habitat Regulations Appraisal.
2. If the plan is subject to appraisal, identify European and Ramsar sites that should be considered in the appraisal.

3. Gather information about European sites and Ramsar sites.
4. Consult on the method and scope of the appraisal.

A pre-screening review document is needed for stages 1 to 4.

The second part of the plan process involves generating and appraising options, planning policy development and writing the draft/proposed plan. The stages include:

5. Screen the plan for likely significant effects (LSE) on a European or Ramsar site. If the significant effects are unlikely, then move on to stage 8. If significant effects are likely, then continue to stage 6.
6. Undertake an appropriate assessment in view of conservation objectives.
7. Apply mitigation measures until there is no adverse effect on site integrity (AEOI).

A screening report is needed for stage 5 and appropriate assessment information report is needed for stage 6 to 9.

The third part of the plan process involves publishing the draft or proposed plan. The stages include:

8. Prepare a draft record of the HRA.
9. Consult statutory consultees (Natural England and JNCC), other stakeholders and the public if appropriate.

The fourth part of the plan process involves amending the plan in light of comments. This includes stage 10:

10. Screen any amendments for likelihood of significant effects and carry out appropriate assessment if required, re-consult statutory consultees (Natural England and JNCC) if necessary, on amendments.

An appropriate assessment document is needed for stage 10 and 11 of the plan process.

In the fifth and final part of the process the plan is adopted and published. This includes stage 11:

11. Modify HRA record in light of statutory consultees (Natural England and JNCC) representations and any amendments to the plan and complete and publish final/revised HRA record with clear conclusions.

## Relevant case law

2.18 As a consequence of the UK's exit from the EU, it was necessary for various amendments to be made to the Habitats Regulations. These changes were required to ensure that England and Wales (and Scotland through separate regulations) continue to maintain the same standard of protection afforded to European sites. The Habitats Regulations remain in force, including the general provisions for the protection of European sites and the procedural requirements to undertake HRA. The changes made were only those necessary to ensure that they remain operable following the UK's exit from the EU.

2.19 Although the UK is no longer part of the EU, a series of prior rulings of the Court of Justice of the European Union (CJEU) are relevant and have been considered when preparing this document. These rulings and their implications for this HRA are summarised in Table 1.

**Table 1. Case law relevant to the HRA of the FRMP**

Case	Ruling	Relevance to the HRA of the FRMP
<p>People Over Wind and Sweetman v Coillte Teoranta (C-323/17)</p>	<p>The ruling of the CJEU in this case requires that any conclusion of 'no likely significant effect' on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of likely significant effects should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the appropriate assessment.</p>	<p>NatureScot has published guidance on the implications of this ruling for HRA (SNH, 2019). It will be necessary to distinguish between those measures which are intended to avoid or reduce harmful effects on a European site and those elements of the flood management plan that may incidentally provide some degree of mitigation, but which are intrinsic or essential parts of the plan itself. SNH advises that intrinsic parts of a plan can be considered at the screening stage of HRA. If it can be concluded that the Flood management plan area will have no adverse effect on any European site, in the absence of mitigation, it will be possible to conclude 'no likely significant effects', and the need for further detailed appropriate assessment will be 'screened out'.</p>
<p>Waddenzee (C-127/02)</p>	<p>The ruling in this case clarified that appropriate assessment must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn.</p> <p>The Waddenzee ruling also provided clarity on the definition of 'significant effect', which would be any effect from a plan or project which is likely to undermine the conservation objectives of any European site.</p>	<p>Adopting the precautionary principle, a 'likely' effect in this HRA is interpreted as one which is 'possible' and cannot be objectively ruled out.</p> <p>The test of significance of effects has been conducted with reference to the conservation objectives of relevant European sites.</p>

Case	Ruling	Relevance to the HRA of the FRMP
Holohan and Others v An Bord Pleanála (C-461/17)	<p>The conclusions of the Court in this case were that consideration must be given during appropriate assessment to:</p> <ul style="list-style-type: none"> <li>• effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives, and</li> <li>• effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.</li> </ul>	<p>This relates to the concept of 'functionally-linked habitat', i.e. areas outside of the boundary of a European site which supports its qualifying feature(s). In addition, consideration must be given to non-qualifying features upon which qualifying habitats and/or species rely.</p>
T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12)	<p>The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.</p>	<p>Compensation can only be considered at the relevant stage of HRA and not during appropriate assessment. Compensation must be delivered when appropriate assessment concludes that there will be adverse effects on site integrity.</p>

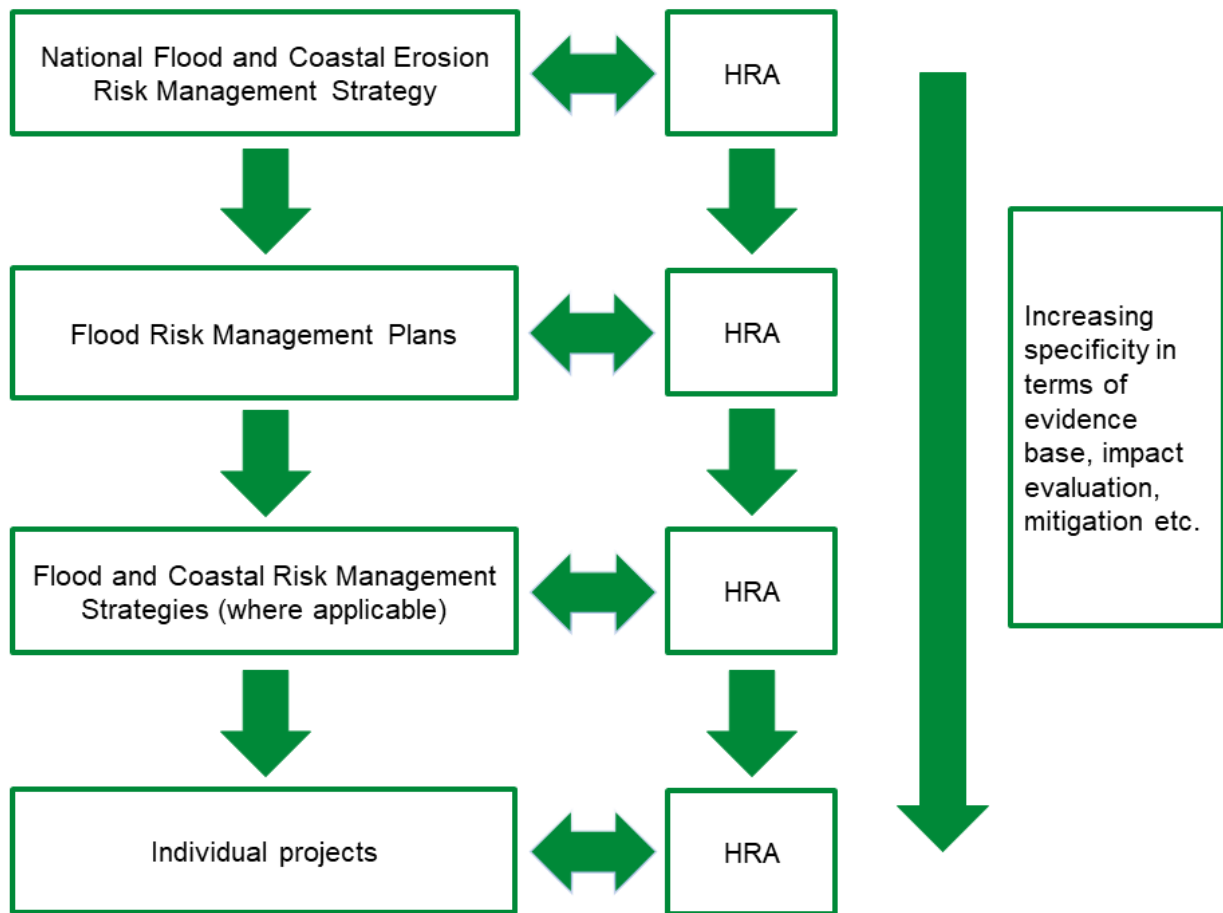
## Purpose of this document

2.20 This document forms the HRA of the Humber FRMP. It has been prepared with regard to best scientific knowledge and an examination of potential impacts of the Flood Risk Management Plan on European Sites.

2.21 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of effects. In other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.

2.22 However, there is a tacit acceptance that HRA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers as illustrated in Figure 2 below. Note that some measures in the FRMPs come from other plans and are reflected in the FRMP for consistency and completeness.

**Figure 1. Tiering in HRA of Land Use Plans**



2.23 In any strategic plan, there are numerous measures for which there is a limit to the degree of assessment that is possible at this plan level. This is because either:

- the measure in question does not contain any specific details describing what will be delivered or where so literally cannot be assessed in detail at the plan level.
- development of a specific type is identified but the nature of the potential impacts are dependent on exactly how the development will be designed and constructed and therefore cannot be assessed in detail at the plan level but rather at the scheme level

2.24 For example, NatureScot has published guidance<sup>4</sup> that indicates a measure or initiative in a higher tier plan can be screened out without further analysis if:

- a. they are intended to protect the natural environment
- b. they will not themselves lead to development or other change
- c. they make provision for change but could have no conceivable effect on a European site
- d. they make provision for change but could have no significant effect on a European site
- e. effects on any particular European site cannot be identified because the measures are too general or lack any spatial definition



- 2.25 Similarly, the Habitats Regulations Assessment Handbook<sup>5</sup> sets out three criteria in section F.10.1.5, that it considers would make it reasonable to defer further assessment to a lower tier plan or project:
- a. The higher level plan assessment cannot reasonably predict any effect on a European site in a meaningful way.
  - b. The lower level plan or project, which will identify more precisely the nature, timing, duration, scale or location of the measure, and thus its potential effects, will have the necessary flexibility over the exact nature, timing, duration, scale and location of the measure to enable an adverse effect on site integrity to be avoided.
  - c. The HRA of the lower tier plan or project is required as a matter of law or government policy.
- 2.26 In these cases, the HRA focusses on setting down-the-line requirements for more detailed assessment at the scheme level that can be included in the plan to ensure that whatever proposals come forward will not result in adverse effects on integrity. On these occasions the advice of Advocate-General Kokott<sup>6</sup> should be considered. She commented that: 'It would ...hardly be proper to require a greater level of detail in preceding plans [rather than planning applications] or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure'.
- 2.27 Similarly, published EU guidance on HRA states: 'Where one or more specific projects are included in a plan in a general way but not in terms of project details, the assessment made at plan level does not exempt the specific projects from the assessment requirements of Article 6(3) at a later stage, when much more details about them are known.'<sup>7</sup>
- 2.28 It is also important to consider the approach taken regarding coastal defence schemes and strategies. The stance throughout all FRMP HRAs is that, provided measures are already covered by the SMP/Coastal Strategy process or another HRA process, then these measures are effectively included in the FRMPs for completeness. The FRMPs are not the source plans for these schemes and they are already committed elsewhere. The SMP and Coastal Strategies will be updated as part of their normal cycle and that will include revision to their HRAs which will take account of any changes in evidence. Each scheme will also have its own HRA before it is consented. In these cases, the DTA handbook states that plan elements can be screened out if they have, or will be subject to, HRA under another plan and this plan (the FRMP) would not materially change if they were omitted.
- 2.29 This is the approach taken in the HRA of the FRMP to avoid confusing the FRMP with other plan processes (such as Shoreline Management Plan (SMP) and Coastal Strategy processes) that have their own separate HRA, or the individual schemes that are referenced in the FRMP and will be taken forward subject to significant further work including outline design, detailed design, securing of funding, community

consultation and securing of necessary consents and permits. The fact that a scheme is referenced in the FRMP does not prejudice the down-the-line permitting processes.

## The 'in Combination' Scope

2.30 It is a requirement of the Habitats Regulations that the impacts and effects of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.

2.31 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation, i.e. to ensure that those projects or plans which in themselves have minor impacts are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in combination assessment is therefore of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. The overall approach is to exclude the risk of there being unassessed likely significant effects in accordance with the precautionary principle. This was first established in the seminal Waddenzee<sup>8</sup> case.

2.32 For the purposes of this HRA, in-combination assessment is focussed on the plans and projects identified in the Strategic Environmental Assessment (SEA) Environmental Report of the FRMP. The plans and projects were identified in the SEA as having a significant interaction with the FRMP for biodiversity, flora and fauna and required consideration. The key relevant plans and projects with a potential for in-combination effects are:

## Local Development Plan documents for the following Local Authorities

- North Yorkshire County
- Richmondshire District
- Craven District
- Harrogate Borough
- Hambleton District
- Scarborough Borough
- Selby District
- Ryedale District
- East Riding of Yorkshire
- City of Kingston upon Hull
- City of York
- Leeds City
- City of Bradford Metropolitan District.
- Metropolitan Borough of Calderdale
- Kirklees Metropolitan Borough

- Wakefield Metropolitan Borough
- Barnsley Metropolitan Borough
- Sheffield City
- Rotherham Metropolitan Borough
- Doncaster Metropolitan Borough
- North Lincolnshire
- Lincolnshire County
- East Lindsey District
- West Lindsey District
- Nottinghamshire County
- Bassetlaw District
- Mansfield District
- Newark and Sherwood District
- Gedling Borough
- Ashfield District
- Broxtowe Borough
- Nottingham City
- Rushcliffe Borough
- Leicester County
- City of Leicester
- Charnwood Borough
- Melton Borough
- Harborough District
- Oadby and Wigston Borough
- Blaby District
- Hinckley and Bosworth Borough
- North West Leicestershire District
- Derbyshire County
- High Peak Borough
- Derbyshire Dales District
- North East Derbyshire District
- Chesterfield Borough
- Bolsover District
- Amber Valley Borough
- Erewash Borough

- South Derbyshire District
- Derby City
- Staffordshire County
- Staffordshire Moorlands District
- East Staffordshire Borough
- Lichfield District
- Tamworth Borough
- Cannock Chase District
- South Staffordshire District
- Stoke-on-Trent City
- Stafford Borough
- Newcastle-under-Lyme Borough
- Warwickshire County
- Rugby Borough
- Nuneaton and Bedworth Borough
- North Warwickshire Borough
- Metropolitan Borough of Solihull
- Birmingham City
- Metropolitan Borough of Walsall
- Metropolitan Borough of Sandwell
- City of Wolverhampton

### **River Basin Management Plans (RBMP)**

- Humber draft RBMP 2021

### **Shoreline Management Plans (SMP)**

- SMP 2 The Tyne to Flamborough Head
- SMP 3 Flamborough Head to Gibraltar Point

### **Flood and Coastal Erosion Risk Management Strategies**

- National Flood and Coastal Erosion Risk Management Strategy for England
- Humber Flood Risk Management Strategy 'Planning for the Rising Tides' (published in 2008)
- Warwickshire Surface Water Management Plan (SWMP) 2014
- Warwickshire Local Flood Risk Management Strategy 2016
- Shropshire and Staffordshire Local Flood Risk Management Strategy 2015
- Derbyshire Local Flood Risk Management Strategy 2015

- Leicestershire Local Flood Risk Management Strategy 2015
- Nottinghamshire Local Flood Risk Management Strategy 2016
- Lincolnshire Joint Lincolnshire Flood Risk and Water Management Strategy 2019
- North Yorkshire draft Flood Risk Management Strategy (draft 2022)
- Birmingham City Council Local Flood Risk Management Strategy 2017

## **Water Resource Management Plans (WRMP) and Drought Plans**

- Yorkshire Water WRMP 2020 – 2070
- Yorkshire Water draft Drought Plan 2022
- Anglian Water WRMP 2019 (2020 – 2045)
- Anglian Water draft Drought Plan 2022
- Severn Trent Water WRMP 2019
- Severn Trent Water draft Drought Plan 2021
- South Staffs Water WRMP 2019
- South Staffs Water draft Drought Plan 2021

## **National Infrastructure Projects**

- Lagoon Hull
- The Northern Powerhouse
- High Speed 2
- Humber Low Carbon Pipelines
- South Humber Bank Energy Centre
- Yorkshire and Humber CCS Cross Country Pipeline
- River Humber Gas Pipeline Replacement Project.
- Immingham Eastern Ro-Ro Terminal

2.33 The potential for ‘in combination’ effects between these plans and projects and the FRMP are discussed later in this document.

## 3. Pathways of Impact

### Direct habitat loss

- 3.1 Any permanent, irreversible, habitat loss from a designated site that will result in the loss of qualifying habitats and / or species, or habitats that support the designated species, will be adverse, although to affect the integrity of the site (the coherence of its structure and function) the loss must be sufficiently adverse that it materially impairs the achievement of the Conservation Objectives for the site.
- 3.2 Various developments can result in the loss of habitat in European Sites, either temporary or permanent. Temporary habitat loss (e.g. such as due to the need for a construction period footprint to encroach on a site) is potentially reversible depending on what the site is designated for, and there is also potential for deploying mitigation measures to avoid adverse effects on site integrity. In contrast, the permanent loss of designated habitat will result in a reduction of coverage of a potentially very rare ecosystem, with potential knock-on impacts on dependent qualifying species.
- 3.3 Plans or projects that result in the loss of land from a SAC can be approved in certain situations (please see Defra (2012)<sup>9</sup>, even if the loss is sufficient to adversely affect the integrity of an SAC, if three sequential tests are met:
- no feasible alternative solutions to the plan or project exist that are less damaging
  - imperative reasons of overriding public interest (IROPI)
  - compensatory measures secured to ensure that the overall coherence of the European Site network is maintained

### Inappropriate Coastal Management Including Coastal squeeze

- 3.4 Inappropriate coastal management covers any coastal management activities that would interfere with natural coastal processes to such an extent that they would potentially interfere with the ability of European sites to achieve their conservation objectives. Examples of inappropriate coastal management include:
- reduced sediment supply to adjacent frontages, resulting in loss of habitat area. For example, defending the Holderness Coast in East Yorkshire results in a reduction in the amount of longshore sediment that would otherwise be transported into the Humber Estuary SAC/SPA/Ramsar site and this in turn could affect the persistence of features that require a continued supply of sediment, such as Spurn Point
  - presence of flood risk management defences causing habitat erosion seawards of those defences due to wave reflection. This is more of an issue with some types of defence (such as sheet metal piling) than with other types of defence
  - restriction of the area of intertidal habitat in front of the flood risk management defences

- coastal squeeze

- 3.5 Coastal squeeze is defined by government as ‘the loss of natural habitats or deterioration of their quality arising from anthropogenic structures or actions, preventing the landward transgression of those habitats that would otherwise naturally occur in response to sea level rise in conjunction with other coastal processes. Coastal squeeze affects habitat on the seaward side of existing structures.’<sup>10</sup>
- 3.6 Measures which involve a ‘Hold the Line’ approach by establishing a hard structure or maintaining the existing standard of protection by improving the defences, have the potential to result in the loss of seaward habitats as a consequence of coastal squeeze. The process of coastal squeeze prevents the landward transgression of habitats in response to climate change and resulting sea level rise. Over time, unmitigated coastal squeeze would inevitably lead to the cumulative loss of designated habitats and supporting functionally-linked habitats. Coastal squeeze impacts due to measures have already been fully explored and mitigation or compensation quantified if necessary through the SMP and Coastal Strategy process and their HRAs, and through the Flood and Coastal Erosion Risk Management (FCERM) National Strategy 2021 and compensation delivered in the form of the Habitat Compensation Programme. Therefore, coastal squeeze is scoped out of this HRA.
- 3.7 All the FRMPs contain measures which refer to implementing or updating Shoreline Management Plans or Coastal Strategies or flood and coastal erosion risk management schemes that are contained within those documents. In commenting on the draft version of the HRA, Natural England advised the SMP Health Check documents will include detail on what changes to SMP HRAs will be required to account for (for example) changes in sea level rise predictions. However, these reports have not yet been completed or published, and as such this information is not yet available.
- 3.8 The approach taken throughout all FRMP HRAs is that, provided such schemes are already covered by the SMP/Coastal Strategy process or another HRA process, these measures are effectively included in the FRMPs for completeness. The FRMPs are not the source plans for these schemes and they are already committed elsewhere. The SMP and Coastal Strategies will be updated as part of their normal cycle and that will include revision to their HRAs which will take account of any changes in evidence. Each scheme will also have its own HRA before it is consented.

## Disturbance

- 3.9 Flood risk management construction works can result in noise or visual disturbance of qualifying species in European sites, both during the construction and operational periods. For example, noise and visual disturbance arising from construction may result in temporary behavioural changes in otters (e.g. disturbance in holts, displacement from specific stretches of the river). Piling noise during construction of defences could displace over wintering or breeding birds for which an SPA is designated. Three of the most important factors determining the magnitude of

disturbance from construction schemes appear to be species sensitivity, proximity of the disturbance source and timing / duration of the disturbance.

## Birds

- 3.10 Development schemes (such as those for flood risk management assets) can result in the disturbance of qualifying SPA / Ramsar bird species in European sites or functionally linked habitats and this can apply whatever activity the bird is undertaking, whether nesting, foraging, loafing or roosting. Noise and visual disturbance arising from construction activities may result in behavioural changes (e.g. flight from the nest, cessation of foraging) in birds. Furthermore, post-construction disturbance from site usage, road traffic and operational lighting might also arise. Three of the most important factors determining the magnitude of disturbance appear to be species sensitivity, proximity of the disturbance source and timing / duration of the disturbance. Generally, the most disturbing visual and auditory stimuli are likely to involve irregular, infrequent, unpredictable loud noise events, movements or vibrations. Birds are least likely to be disturbed by activities that involve regular, predictable and quiet patterns of sound or movement. The further any activity is from the birds, the less likely it is to result in disturbance.
- 3.11 An increasing amount of research on visual and noise disturbance of waterfowl from construction (and other activities) is now available. Both visual and noise stimuli may elicit disturbance responses, potentially affecting the fitness and survival of waterfowl and waders. Noise is a complex disturbance parameter requiring the consideration of multiple parameters, including the fact that it is not described on a linear scale, its nonadditive effect and the source-receptor distance. A high level of noise disturbance constitutes a sudden noise event of over 60dB or prolonged noise of over 72dB. Bird responses to high noise levels include major flight or the cessation of feeding, both of which might affect the survival of birds if other stressors are present (e.g. cold weather, food scarcity).
- 3.12 Generally, research has shown that above noise levels of 84 dB waterfowl show a flight response, while at levels below 55dB there is no effect on their behaviour<sup>11</sup>. These two thresholds are therefore considered useful as defining two extremes. The same authors have advised that regular noise levels should be below 70 dB at the bird, as birds will habituate to noise levels below this level<sup>12</sup>. The Waterbird Disturbance Mitigation Toolkit published by the Institute of Estuarine & Coastal Studies in 2013, summarises the key evidence base relating to the noise disturbance impact pathway<sup>13</sup>. Generally, noise is attenuated by 6 dB with every doubling of distance from the source. Impact piling, the noisiest construction process of approx. 110 dB at 0.67m from source, will therefore reduce to 67-68dB by 100m away from the source. The loudest construction noise should therefore have fallen to below disturbing levels by 100m, and certainly by 200m, away from the source even without mitigation. Note that this is a rule of thumb and does not obviate the need for application-level noise modelling. However, comparison with baseline noise levels will also be important in any assessment rather than purely using comparison with the 70 dB metric (see paragraph below).



- 3.13 An alternative approach to assessment is to consider the relative change in the noise levels experienced by birds, rather than an absolute noise threshold. There are no formal guidelines that define a change threshold that is deemed disturbing to waterfowl and waders, but they are thought to have hearing comparable to humans. For humans a change of 3 dB defines the threshold for a change in noise to be perceptible (in other words, a change of 1 or 2 dB cannot be detected by the human ear). However, there is a significant difference between being able to notice that a noise has gotten louder and finding the increase in noise to be sufficiently intolerable that it causes displacement or otherwise significantly disrupts activity. Therefore, 3 dB may be an excessively precautionary threshold to use for judging disturbance. Due to the logarithmic nature of the decibel scale a change of 5 dB increase at the receptor is approximately a 50% increase in perceived loudness while a 10 dB increase is a doubling in perceived loudness or sound intensity. It is reasonable to assume that an increase of 10 dB would run a high risk of causing adverse impacts to bird behaviour such as flushing, for the duration of exposure.
- 3.14 Visual disturbance is generally considered to have a higher impact than noise disturbance as, in most instances, visual stimuli will elicit a disturbance response at much greater distances than noise<sup>14</sup>. For example, a flight response is triggered in most species when they are approached to within 150m across a mudflat. Visual disturbance can be exacerbated by workers operating equipment outside machinery, undertaking sudden movements and using large machinery. Some species are particularly sensitive to visual disturbance<sup>15</sup>, including curlew (taking flight at 275m), redshank (at 250m), shelduck (at 199m) and bar-tailed godwit (at 163m). With specific regard to the Humber Estuary the Environment Agency and Natural England have agreed a precautionary distance of 300m for the purposes of assessment of bird disturbance.

## **Fish / Marine Mammals**

- 3.15 Fish use sound for vital life functions, requiring it for completion of their life cycle as well as maintaining productivity. A review of 115 primary studies (66 of which were investigating fish species) highlights that noise disturbance leads to a wide range of impacts in fish, including their development, anatomy, physiology, stress levels and behaviour<sup>16</sup>. A study comparing the foraging behaviour of perch and roach, found that both species showed significantly fewer feeding attempts when exposed to motorboat noise<sup>17</sup>. For roach, which are better hearing than perch, no habituation to noise occurred over time. In a study of pink snappers (similar to many other commercial species such as tuna, cod and haddock), it was determined that a single seismic air gun with a source noise level of 222.6dB re 1uPa resulted in extensive damage to the ears, with no apparent recovery after 58 days<sup>18</sup>. The impacts of noise may not be immediately visible, as demonstrated by a noise playback experiment on perch, carp and gudgeon. Exposure of the fish to underwater ship noise, resulted in cortisol increases of between 81% to 120% compared to control values<sup>19</sup>. Notwithstanding this evidence, it is important to note that extrapolations from noise impact studies to different settings or species should be made with caution.

3.16 Construction noise also presents a significant threat (both regarding injury and mortality) to marine mammals, including harbour porpoise and grey seals. For example, the density of harbour porpoise has been shown to be significantly reduced for several kilometres surrounding seismic surveys and impact piling activities<sup>20 21</sup>. Cetaceans produce and receive sound over a great range of frequencies for use in communication, orientation, predator avoidance and foraging. Interference with these important behaviours has the potential to result in significant negative impacts. Harbour porpoise are high frequency cetaceans that have low sensitivity thresholds to impulsive sound sources. Anthropogenic sound has the potential to result in direct effects on the hearing ability of mammals (among other impacts, such as behavioural responses and masking of other underwater sounds), including Permanent Threshold Shifts (PTS) and Temporary Threshold Shifts (TTS)<sup>22</sup>. Some construction works within the marine environment may require Unexploded Ordnance (UXO) detonation, which involves impulsive sound elements stretching over tens of kilometres. In practice, it is typically not known whether such works will be required. Guidance from the Joint Nature Conservation Committee (as utilised for example in the HRA of the South-West England Marine Plan) confirms that a likely significant effect via underwater noise could affect European sites up to 50km distant depending on the nature of the works.

## Hydrology

- 3.17 The water level, its flow rates and the mixing conditions are important determinants of the condition of European sites and their qualifying features. Hydrological processes are critical in influencing habitat characteristics in wetlands and coastal waters, including current velocity, water depth, dissolved oxygen levels, salinity and water temperature. In turn these parameters indirectly determine the short- and long-term viability of plant and animal species, as well as overall ecosystem composition.
- 3.18 Many animal species are directly sensitive to hydrological changes, including the drying and excessive flooding of habitat. For example, many species (partially) restricted to the aquatic environment are sensitive to periodic or permanent drying, because this reduces the extent of supporting habitat available. This includes species such as the great-crested newt, southern damselfly, white-clawed crayfish and a diverse array of fish (e.g. Atlantic salmon, river lamprey, sea lamprey). In contrast, excessive flooding can result in sub-optimal water levels for foraging birds, such as small waders. If water is too deep, some species may not be able to access their primary prey species, with potential implications for foraging efficiency.
- 3.19 Wetland, riverine, estuarine and coastal habitats rely on hydrological connections with other surface water systems. A supply of water within natural limits is fundamental to maintaining the ecological integrity of sites. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause the water level to be outside of the required range of plant and animal species. This might lead to the loss of the structure and function of aquatic habitats.
- 3.20 FRMPs generally propose measures to reduce the magnitude and impacts of potential flooding events. This may involve a wide range of interventions, such as

flood defences and natural flood management techniques. If any such measures are delivered in the proximity to hydrology-dependent European sites, they may have implications for the water level in designated site boundaries. For example, a natural flood management intervention delivered immediately upstream of a designated floodplain or waterbody, while intended to restore the hydrological regime to a natural baseline, could reduce the volume of freshwater input to and flooding regime in that downstream European site.

## Pollution

3.21 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- Eutrophication - the enrichment of water with nutrients, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In freshwater ecosystems, plant growth is primarily determined by phosphorus concentrations, which are determined by a wide range of sources, including treated sewage effluent from Wastewater Treatment Works and urban surfaces such as roads.
- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.

3.22 There is an obligation for flood risk protection, management and resilience schemes to consider water quality impacts. Under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and the Environmental Permitting (England and Wales) Regulations 2016, it is illegal to pollute watercourses. Individual planning proposals will undergo Preliminary Ecological Appraisal (PEA) or Environmental Impact Assessment (EIA), if identified as Schedule 1 or Schedule 2 proposals by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. As such, water quality protection measures must by law be introduced on any scheme that could affect the water quality of the river or coastal environment, irrespective of whether part of that environment is designated as an SAC or SPA.

## Functionally-Linked Land

3.23 While most European sites have been geographically defined in order to encompass the key features that are necessary for coherence of their structure and function, this is not the case for all such sites. Due to the highly mobile nature of waterfowl, it is

inevitable that areas of habitat of crucial importance to the maintenance of their populations are outside the physical limits of the European site for which they are an interest feature. However, this area will still be essential for maintenance of the structure and function of the interest feature for which the site was designated and land use plans that may affect this land should still therefore be subject to further assessment. This has been underlined by a recent European Court of Justice ruling (C-461/17, known as the Holohan ruling<sup>23</sup>) which in paragraphs 37 to 40 confirms the need for an appropriate to consider the implications of a plan or project on habitats and species outside the European site boundary provided that those implications are liable to affect the conservation objectives of the site.

3.24 Certain management approaches, while positive for coastal processes, could result in the loss of landward habitats, such as coastal grazing marsh, grassland, reedbeds and arable land. Birds are mobile species and are also dependent on sites outside of formal designations and rely on the availability of a network of feeding and roosting resources over the winter period.

## **Spread of invasive non-native species**

3.25 Invasive non-native species can have detrimental impacts on native species and habitats. Their spread can occur during construction and operation of a development, and via multiple pathways (for example via watercourses or on the treads of construction machinery).

3.26 Under the Wildlife and Countryside Act 1981, as amended, and the Invasive Alien Species (Enforcement and Permitting) Order 2019, it is an offence to cause any plant to spread or grow in the wild outside of its native range. Appropriate biosecurity measures will therefore also be implemented during works carried out during both the construction and operational phases of any scheme to prevent the spread of invasive non-native species, irrespective of whether there are European sites in the vicinity.

## 4. Test of Likely Significant Effects

- 4.1 When seeking to identify relevant European sites, consideration has been given primarily to identified impact pathways and the source-pathway-receptor approach, rather than adopting a purely 'zones'-based approach. The source-pathway-receptor approach is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no possibility for an effect to occur. Furthermore, even where an impact is predicted to occur, it may not result in significant effects (i.e. those which undermine the conservation objectives of a European site). Briefly defined, pathways are routes by which a change in activity can lead to a significant effect upon a European site.
- 4.2 The likely zone of impact (also referred to as the likely 'zone of influence') of a plan or project is the geographic extent over which significant ecological effects are likely to occur. The zone of influence of a plan or project will vary depending on the specifics of a particular proposal and must be determined on a case-by-case basis with reference to a variety of criteria, including:
- the nature, size / scale and location of the plan
  - the connectivity between the plan and European sites, for example through hydrological connections or because of the natural movement of qualifying species
  - the sensitivity of ecological features under consideration
  - the potential for in-combination effects
- 4.3 There is no geographical limit beyond which plans need not be considered by HRA. However, as a first step in identifying European sites which may be relevant, a search was made for sites within the River Basin District, or within 10km of the River Basin District. Consideration was then given to their hydrological sensitivity and the potential for them to be connected to flood risk management measures. The European sites identified within this search area is given in Table 2. Note that there are numerous European sites within the River Basin District or within 10km of it which are not hydrologically sensitive or likely to be affected by flood defences or are hydrologically sensitive but would not be linked to potential flood risk management activities. These are not listed below as they are scoped out of the HRA process.

### Freshwater European sites

- 4.4 The major freshwater sites in the Humber RBD (in terms of extent) are River Derwent SAC, Lower Derwent Valley SPA/Ramsar site and River Mease SAC. Spread across the RBD are a range of smaller wetland sites as well as upland bog, wet heath and meadow sites which include but are not limited to: Malham Tarn SAC, Midlands Meres & Mosses SAC, Cannock Extension Canal SAC, Ensor's Pool SAC, Fen Bog SAC and Thorne and Hatfield Moors (SACs and SPAs).
- 4.5 None of the measures have been identified to result in likely significant effects on any hydrologically sensitive freshwater sites. This is generally because the measures are:

- too non-specific to assess meaningfully
- already being implemented
- already subjected to a separate HRA process (e.g. a Coastal Strategy or a SMP will have its own HRA process)
- essentially desk-based
- remote from European sites, or
- worded such that they are about 'investigating' or 'reviewing' or 'identifying opportunities for' interventions, rather than committing to any specific interventions or actions the ground. Any specific schemes that subsequently emerge from the investigation/review will be subject to their own down-the-line HRA process.

4.6 One group of measures goes beyond 'investigating', 'reviewing' or 'identifying' by committing to 'delivering' or 'implementing' flood management interventions, making it clear that physical work on the ground will occur. In some instances, particularly for Management Catchment measures, the broad (and, occasionally, specific) location for these measures is known, while details of their implementation are not. Given the absence of details at the FRMP level, and in line with the approach to tiering of HRA set out in Section 2, HRA (including Appropriate Assessment as necessary) must be deferred to later scheme development, lower tier plans, the outline business case and/or the planning application stage. Measures where this screening outcome applies have been categorised as 'No Likely Significant Effect, but down-the-line HRA required'. This approach has been adopted to account for the strategic (and thereby necessarily non-specific) nature of the FRMP, while also identifying the measures with the highest impact potential on European sites.

4.7 One broader matter requiring consideration as part of the Likely Significant Effects process is the extent to which any measures, through committing to the *status quo*, may be contributing to the exacerbation or persistence of an existing water-related problem at European sites. However, for the Humber region no specific measures have been identified that contain proposals that would reinforce a negative situation, subject to down-the-line HRA for any schemes that may emerge from the numerous studies committed to in the FRMP.

4.8 Although not technically within the remit of HRA, it is nonetheless noted that there are several measures that present opportunities for improving the hydrological situation at European sites in affected areas, particularly as applied to the key foci for hydrologically sensitive European sites in the Humber RBD. This is discussed in the following sections within the context of the current hydrological vulnerability of relevant freshwater European sites.

4.9 Although non-specific, the following broad measures applicable to the River Basin District could give rise to initiatives and opportunities to improve European site hydrology:

- 'Carry out large scale tree planting and potentially the creation of other habitats (peatland, wetlands etc) in various places in the Environment Agency West Midlands Area of the Trent catchment to capture carbon, reduce the risk of

flooding, enhance the environment and public access, and provide associated benefits for mental and physical wellbeing'. This could be used to benefit the West Midlands Mosses SAC.

- 'Develop and carry out an evidence review of the people and wildlife benefits of the Transforming the Trent Valley project in the Trent valley and the Dove Valley to quantify the benefits of the project'. This could be used to benefit the entire Trent Valley and thus flows into downstream European sites, as well as the Peak District Dales SAC with regard to the River Dove.
- 'Severn Trent Water will develop and deliver a programme of retrofit sustainable drainage systems and blue green infrastructure schemes in STW wastewater catchments to deliver natural and social capital (measured by the CIRIA B&ST tool) to increase flood resilience in the Humber River Basin District'.
- 'Severn Trent Water will enhance the natural environment and biodiversity as part of our Great Big Nature Boost campaign in STW wastewater catchments to revive acres of land, plant trees, restore rivers, which will contribute to increased flood resilience'.
- 'Identify and investigate locations highlighted by the Natural Flood Management opportunity mapping in Nottinghamshire, Derbyshire, Leicestershire to support flood prevention activities in 'Communities at Risk''. This could be adapted to benefit both the Peak District Dales SAC and River Mease SAC.
- 'The Environment Agency and Moors for the Future will investigate and implement where feasible Natural Flood Management opportunities across moorlands in The High Peak and Derbyshire Dales to understand the potential impact for flood risk management in downstream Communities at Risk'. This could also be used to improve hydrology and habitat resilience at Peak District Dales SAC.
- 'Identify and investigate new opportunities for natural flood management in Leicestershire to manage flood risk and create environmental benefits'. The River Mease SAC is in western Leicestershire and this measure could therefore be used to restore natural flows to that site.
- 'Support a partnership approach to investigating and delivering nature based solutions, including natural flood management, in the Mease catchment to provide multiple benefits including reducing flood risk, improving water quality, enhancing biodiversity value and better land management'. Given it is in the Mease catchment this could also be used to improve water quality in and restore natural flows to the River Mease SAC.
- 'Investigate and deliver working with nature initiatives as part of wider flood risk management works in York District to reduce flood risk by implementing Natural Flood Management measures'. York District includes both the River Derwent and the Lower Derwent Valley SPA/Ramsar site and this measure could therefore be used to restore natural hydrology and a more appropriate flood regime at both sites.

4.10 River Mease SAC is designated for white-clawed crayfish and bullhead. Since both species prefer relatively shallow water (as identified in the Supplementary Advice on the Conservation Objectives for River Mease SAC) it is understood that Natural England have an aspiration to reduce flow levels in the River Mease SAC to restore them to a more natural level compatible with its international interest features. This is

reflected in the SAC target (associated with the Supplementary Advice on the Conservation Objectives) to 'Restore the natural flow regime of the river, with daily flows as close to what would be expected in the absence of abstractions and discharges (the naturalised flow)'. Related to this, and improvement in phosphate levels in the River Mease SAC, the Environment Agency has undertaken a detailed groundwater and surface water modelling exercise for the River Mease and has an intention to relocate the discharge from Packington WTW on the Gilwiskaw Brook out of the River Mease SAC catchment.

- 4.11 One of the most significant issues raised in the Site Improvement Plan for River Derwent SAC is 'Agricultural floodplain drainage has increased the supply of fine sediment. Construction of flood embankments has removed connectivity with the floodplain for sediment deposition. Channelisation has changed the natural river system and created vertical bank profiles subject to failure. There are also six major in-channel structures in the SAC. The structures create a barrier to fish passage directly impacting upon migratory species such as lamprey. They restrict upstream movement of non-migratory fish and prevent natural sediment transfer. They impound the water, further restricting the natural processes of the river. Downstream of the weir structures higher flow does create pools and riffles favoured by the SAC species. It is considered that their removal where possible would restore a more natural system'. This is reflected in the Supplementary Advice on the Conservation Objectives which repeatedly refers to the Derwent as an 'impacted river'. Any flood management works that inadvertently impeded lamprey passage upstream from the Humber Estuary could adversely affect this SAC which is partly designated for breeding sea and river lamprey. However, none of the measures are sufficiently detailed that the commit to such works on the River Trent or River Derwent between the estuary and the SAC. Related to this, there is the potential for impacts upon natural flow regime of the tidal influenced reaches of the River Derwent SAC, especially in relation to sediment transport, water quality and flood extent associated with the the operation of Barmby Barrage. A more natural regime would improve lower reach geomorphology and ecology.
- 4.12 In places the River Derwent expands into the Lower Derwent Valley SPA and SAC and Ramsar site. The Site Improvement Plan for the SPA/SAC notes that 'Prolonged spring and summer flooding threatens both botanical and bird features, through loss of, and changes to suitable habitat. The effects of climatic change may be exacerbated by river levels related to the operation of the Barmby Barrage' and identifies an objective to review the operating protocols of the barrier. The Supplementary Advice on Conservation Objectives notes that 'Flooding within the SPA is difficult to control as it is largely a gravity fed system with few water control structures. The site is therefore largely at the vagaries of climatic and river conditions'. In addition to the SPA itself, the Lower Derwent Valley provides a mosaic of habitats; including; periodically flooded wet grassland, fens, marsh and swamp vegetation together with standing and flowing open water. The continued persistence of all of these habitats and ensuring that neither excessive drying or excessive flooding (in terms of depth or duration) occur is also fundamental to maintenance or restoration of the SPA bird populations.



- 4.13 The Peak District Dales SAC Site Improvement Plan identifies the following issue, also with dams and weirs ‘The impact of artificial structures is particularly relevant to the River Dove and to a lesser extent the Lathkill. Artificial structures such as weirs impede the natural flow regime and ability of the river to ‘self-cleanse’, resulting in reduced natural habitat variability, potential silt accumulations, slow flows and reductions in suitable areas for fish spawning and reduced species diversity (invertebrates, fish, macrophytes etc). Increased siltation results in increased potential for retention of pollutants, impacts on gravel beds, reduction in spawning grounds for fish and impacts upon invertebrate diversity’. The Supplementary Advice on the Conservation Objectives expands on this issue, specifically relating it to problems with the white-clawed crayfish population of the SAC.
- 4.14 With regard to wet heathland, bog and moorland sites (such as Cannock Chase SAC, South Pennine Moors SAC, North Pennine Moors SAC, North York Moors SAC and Thorne & Hatfield Moors SAC), the wet heathland and bog habitats are more associated with direct rainfall input, watersheds from areas further upland or differences in hydrology of superficial deposits and therefore less likely to be affected by flood defence measures. For more low lying sites such as Thorne and Hatfield Moors SAC, the impacts on lowland flood risk management in the wider lowland catchment is also of relevance. In all cases, climate change is likely to make sustaining these habitats more difficult. As the North York Moors SAC Site Improvement Plan states ‘Wetter winters and drier summers are likely to impact the condition of interest features of the North York Moors SAC and SPA, particularly as the site is at a relatively low altitude for some interest features’.
- 4.15 The Site Improvement Plan (SIP) for the North Pennine Moors SAC notes that ‘past drainage (‘moor-gripping’) has caused hydrological changes within blanket peat and some other water-dependent features such as alkaline fens. The effects on blanket bog are severe and widespread, potentially also resulting in impacts on breeding waders. Although mechanisms are underway in many areas to address the effects, through grip blocking, this work is not complete throughout the North Pennines Natura 2000 sites.’ The SIP for South Pennine Moors SAC/SPA raises similar issues and identifies a long list of initiatives likely to be required to address the issue. The Site Improvement Plan for the Cannock Chase SAC states that ‘There has been a reduction in the extent of the valley mire and changes in the vegetation in the Sher Brook Valley which indicate a move towards a drier wetland vegetation. Investigations are needed into why this is happening and what can be done to rectify it’.

## Coastal European sites

- 4.16 Most of the Humber RBD is inland but hydrologically sensitive coastal European sites (specifically the Humber Estuary SAC, SPA and Ramsar site) occupies the entire coastline that does sit within the RBD, up to the tidal limit. As with River Derwent SAC any flood management works that inadvertently impeded lamprey passage upstream from the Humber Estuary could adversely affect the Humber Estuary SAC which is partly designated for breeding sea and river lamprey. Upstream dispersion of river

and sea lamprey in the River Trent is considered to be severely limited by 2.6m high 100m broad Cromwell Weir (located on the main River Trent at grid reference SK 80931 61141), which is impassable to both species. There is a consented proposal to install two eel passes which would also be passable to lamprey. Fish can only migrate upstream if water velocity is equal to or less than the fish's swimming ability. Therefore, fish passage should ensure the water velocity is not greater than the natural stream velocity. Changes in depth would also potentially affect lamprey passage upstream and thus the Humber Estuary SAC and Ramsar site. However, none of the measures are sufficiently detailed that they commit to such works on the River Trent or River Derwent between the estuary and the SAC.

- 4.17 There are numerous measures in the Humber FRMP which refer to implementing or reviewing Coastal Strategies and SMPs. Such plans and strategies present considerable potential for impacts on sensitive coastal sites as set out in Section 3, particularly coastal squeeze, direct habitat loss from coastal defence footprints and (depending on use of land outside SPA boundaries by qualifying wildfowl and waders) loss of functionally-linked land.
- 4.18 However, the FRMP does not decide the content of either SMP's or Coastal Strategies (including the package of underlying schemes) as these are subject to their own independent development and assessment processes, including HRA. The FRMP's are essentially referencing these strategies and plans to create a complete picture of flood risk management in coastal areas. Therefore, despite the potential SMPs and Coastal Strategies possess for affecting European sites, the FRMP measures relating to those plans will not result in likely significant effects.
- 4.19 Measures that commit to 'reviewing' SMP's or Coastal Strategies do contain within them the potential to also commit to shaping those plans with a view not simply to managing flood risk to human assets but also positively influencing persistence and/or recovery of coastal habitats. For example, in the case of Spurn Point in the mouth of the Humber Estuary, how it is treated in coastal defence terms has major implications for the movement and persistence of the structure. This is not strictly an HRA consideration, since HRA is fundamentally about identifying whether given measures will interfere with the ability of European sites to achieve their conservation objectives, rather than shaping them to positively contribute towards achievement of those objectives. However, those measures could be amended to include reference to shaping the next generation of SMP's and Coastal Strategies to not only take account of the latest sea level rise projections but also opportunities to improve achievement of conservation objectives for the European sites on the relevant frontage.

**Table 2. European sites within 10km of the Humber River Basin District and that are potentially linked to local flood risk management measures**

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Asby Complex SAC	<p>Calcium-rich nutrient-poor lakes, lochs and pools, European dry heaths, dry grasslands and scrublands on chalk or limestone, purple moor-grass meadows, calcium-rich fen dominated by great fen sedge, hard-water springs depositing lime, calcium-rich spring water fed fens, limestone pavements, geyer's whorl snail, slender green feather-moss.</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Crosby Gill SSSI</li> <li>• Crosby Ravensworth Fell SSSI</li> <li>• Ewefell Mire SSSI</li> <li>• Great Asby Scar SSSI</li> <li>• Sunbiggin Tarn &amp; Moors and Little Asby Scar SSSI</li> <li>• The Clouds SSSI</li> </ul>	<p>The site is 4.5 km west of RBD and although hydrologically sensitive, the fact it is in a separate River Basin District indicates measures within the Humber RBD would not affect it.</p>
Cannock Chase SAC	<p>Wet heathland with cross-leaved heath, European dry heaths.</p> <p>Underlying SSSIs:</p> <p>Cannock Chase SSSI: c.90% Unfavourable-Recovering, c.6% Unfavourable-Declining, c.3% Unfavourable-No change, c. 1% Favourable.</p>	<p>Cannock Chase SAC is within the RBD and is partially designated for hydrologically sensitive habitats.</p>

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Craven Limestone Complex SAC	<p>Calcium-rich, nutrient poor lakes lochs and pools, grasslands on soils rich in heavy metals, dry grasslands and scrublands on chalk or limestone, purple moor-grass meadows, active raised bogs, hard-water springs depositing lime, calcium-rich spring water fed fens, limestone pavements, mixed woodland on base-rich soils associated with rocky slopes, white-clawed crayfish, bullhead, lady's-slipper orchid</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Malham-Arncliffe (Cool Pasture) SSSI: 100% Favourable</li> <li>• Bastow Wood SSSI: 100% Unfavourable – Recovering</li> <li>• Malham-Arncliffe SSSI: c.67 Unfavourable – Recovering, c. 27% Favourable, c.5% Unfavourable - No change, less than 0.5% Unfavourable-Declining</li> <li>• Kilnsey Flush SSSI: 100% Favourable</li> <li>• Conistone Old Pasture SSSI: c. 66% Unfavourable – Recovering, c.34% Favourable</li> </ul>	Craven Limestone Complex SAC is within the RBD and is partially designated for hydrologically sensitive habitats or species which rely on hydrologically sensitive habitats.
Fen Bog SAC	Very wet mires often identified by an unstable `quaking` surface.	The site is 2 km southwest of RBD and although hydrologically sensitive, the fact it is in a separate River Basin District indicates measures within the Humber RBD would not affect it.
Flamborough and Filey Coast SPA	Black-legged kittiwake (breeding)	Coastal site forming the boundary of the RBD but not hydrologically sensitive given its dry cliff face nature

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Flamborough Head SAC	<p>Reefs, vegetated sea cliffs of the Atlantic and Baltic coasts, submerged or partially submerged sea caves.</p> <p>Underlying SSSIs:</p> <p>Flamborough Head SSSI: c.67% Favourable, c.29% Unfavourable-Declining, c.4% Unfavourable – Recovering</p>	<p>Flamborough Head SAC is within the RBD and is partially designated for hydrologically sensitive habitats.</p>

<p>Greater Wash SPA</p>	<p>Red throated diver, common scoter, little gull (non-breeding), sandwich tern, common tern, little tern (breeding)</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• North Norfolk Coast SSSI: c.98% Favourable, c. 2% Unfavourable- Recovering</li> <li>• The Wash SSSI: c.68% Favourable, c.32% Unfavourable – Recovering</li> <li>• Gibraltar Point SSSI: c.60% Favourable, c. 31% Unfavourable – Recovering, c.8% Unfavourable – Declining; Chapel Point –</li> <li>• Wolla Bank SSSI: 100% Favourable</li> <li>• Saltfleetby - Theddlethorpe Dunes SSSI (Unit 1 within the SPA is favourable, Unit 163 is Unfavourable - Declining</li> <li>• The Lagoons SSSI 100% Unfavourable - No change; Beeston Cliffs SSSI: 100% Unfavourable – Recovering</li> <li>• Dimlington Cliff SSSI: 100% Favourable</li> <li>• East Runton Cliffs SSSI 100% Favourable</li> <li>• Happisburgh Cliffs SSSI: 100% Favourable</li> <li>• Humber Estuary - 2000480 SSSI : c.91% Unfavourable – Recovering, c.8% Favourable, c.1% Unfavourable – Declining, less than 1% Unfavourable - No change</li> <li>• Hunstanton Cliffs SSSI : 100% Favourable</li> <li>• Morston Cliff SSSI : 100% Unfavourable – Recovering</li> <li>• Mundesley Cliffs SSSI : 100% Favourable; Overstrand Cliffs SSSI : 100% Favourable</li> <li>• Sidestrand and Trimmingham Cliffs SSSI : c.87% Favourable, c.13% Unfavourable – Declining</li> <li>• West Runton Cliffs SSSI : 100% Favourable</li> </ul>	<p>Greater Wash SPA is a marine site that lies on the eastern boundary of RBD and is designated species which rely on hydrologically sensitive habitats.</p>
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Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
	<ul style="list-style-type: none"> <li>• Weybourne Cliffs SSSI : 100% Favourable</li> <li>• Winterton-Horsey Dunes SSSI : c.68% Favourable, c. 22% Unfavourable - No change, c.10% Unfavourable – Recovering</li> <li>• Withow Gap, Skipsea SSSI: 100% Favourable</li> </ul>	
Hatfield Moor SAC	Degraded raised bogs still capable of natural regeneration Underlying SSSI: Hatfield Moors SSSI: c.92% Unfavourable – Recovering, c.7% Unfavourable - No change, c.1% Favourable	Hatfield Moor SAC is within the RBD and is designated for hydrologically sensitive habitats.
Hornsea Mere SPA	Mute swan, gadwall (non-breeding) Underlying SSSI: Hornsea Mere SSSI: c.51% Unfavourable - No change, c.44% Favourable, c.6% Unfavourable - Recovering	Hornsea Mere SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Humber Estuary Ramsar	<p>The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. The site supports a breeding colony of grey seals at Donna Nook. The dune slacks at Saltfleetby-Theddlethorpe support breeding natterjack toad. The Estuary supports sea lamprey, and river lamprey. The site supports wintering waterfowl assemblages of international importance and wintering common shelduck, European golden plover, red knot, dunlin, black-tailed godwit, bar-tailed godwit, common redshank.</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Humber Estuary - 2000480 SSSI : c.91% Unfavourable – Recovering, c.8% Favourable, c.1% Unfavourable – Declining, less than 1% Unfavourable - No change</li> <li>• North Killingholme Haven Pits SSSI : c. 74% Favourable, c. 26% Unfavourable-No change</li> <li>• Saltfleetby - Theddlethorpe Dunes SSSI : c. 79% Favourable, c. 21% Unfavourable-Recovering</li> <li>• The Lagoons SSSI: 100% Unfavourable - No change</li> </ul>	<p>Humber Estuary Ramsar is within the RBD and is designated for hydrologically sensitive habitats and species which rely on hydrologically sensitive habitats.</p>



Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Humber Estuary SAC	<p>Subtidal sandbanks, estuaries, intertidal mudflats and sandflats, coastal lagoons, glasswort and other annuals colonising mud and sand, Atlantic salt meadows, embryonic shifting dunes, shifting dunes with marram, dune grassland, dunes with sea-buckthorn, sea lamprey, river lamprey, grey seal.</p> <p>Underlying SSSIs:</p> <p>Humber Estuary - 2000480 SSSI : c.91% Unfavourable Recovering, c.8% Favourable, c.1% Unfavourable – Declining, less than 1% Unfavourable - No change</p>	<p>Humber Estuary SAC is within the RBD and is designated for hydrologically sensitive habitats and species which rely on hydrologically sensitive habitats.</p>
Humber Estuary SPA	<p>Great bittern, common shelduck, Eurasian marsh harrier, hen harrier pied avocet, European golden plover, red knot, dunlin, ruff, black-tailed godwit, bar-tailed godwit, common redshank, little tern, waterfowl assemblage.</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Humber Estuary - 2000480 SSSI : c.91% Unfavourable – Recovering, c.8% Favourable, c.1% Unfavourable – Declining, less than 1% Unfavourable - No change</li> <li>• North Killingholme Haven Pits SSSI : c. 74% Favourable, c. 26% Unfavourable-No change</li> <li>• Saltfleetby - Theddlethorpe Dunes SSSI : c. 79% Favourable, c. 21% Unfavourable-Recovering</li> <li>• The Lagoons SSSI: 100% Unfavourable - No change</li> </ul>	<p>Humber Estuary SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.</p>

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Ingleborough Complex SAC	Juniper on heaths or calcareous grasslands, dry grasslands and scrublands on chalk or limestone, purple moor-grass meadows, blanket bogs, hard-water springs depositing lime, calcium-rich spring water fed fens, plants in crevices in base-rich soils associated with rocky slopes.	The site is 4 km west of RBD and although hydrologically sensitive, the fact it is in a separate River Basin District indicates measures within the Humber RBD would not affect it.
Lower Derwent Valley Ramsar	<p>Traditionally managed species-rich, alluvial flood-meadow, riverine habitats and flood meadows. The site has a rich assemblage of wetland invertebrates, including up to 16 species of damselfly and dragonfly, the most notable being <i>Erythromma najas</i>. Eight rare Red Data Book wetland species: beetles <i>Panagaeus cruxmajor</i>, <i>Hydraena palustris</i>, <i>Carpelimus obesus</i>, <i>Selatosomus nigricornis</i>, two empid flies <i>Ramphomyia physoprocta</i> and <i>Hilara merula</i>, a snail <i>Lymnaea glabra</i>, and the snail-killing fly <i>Sciomyza dryomyzina</i>. Also of note is the leafhopper <i>Cicadula ornata</i> for which the only known British site is the Lower Derwent Valley. Staging area for passage birds in spring: ruff and Eurasian whimbrel. Wintering waterfowl and wader assemblages: Teal, wigeon, Bewick's swan, golden plover, shoveler, and pochard.</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Brighton Meadows SSSI : 100% Favourable</li> <li>• Derwent Ings SSSI: c.60% Favourable, c. 49% Unfavourable-Recovering, less than 1% Unfavourable-Declining</li> <li>• Melbourne and Thornton Ings SSSI : c.58% Unfavourable-Recovering, c. 42% Favourable</li> <li>• Newton Mask SSSI: 100% Favourable</li> </ul>	Lower Derwent Valley Ramsar is within the RBD and is designated for hydrologically sensitive habitats and species which rely on hydrologically sensitive habitats.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Lower Derwent Valley SAC	<p>Lowland hay meadows, alder woodland on floodplains, otter.</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Brighton Meadows SSSI : 100% Favourable</li> <li>• Derwent Ings SSSI: c.60% Favourable, c. 49% Unfavourable-Recovering, less than 1% Unfavourable-Declining</li> <li>• Melbourne and Thornton Ings SSSI : c.58% Unfavourable-Recovering, c. 42% Favourable</li> <li>• Newton Mask SSSI: 100% Favourable</li> </ul>	<p>Lower Derwent Valley SAC is within the RBD and is designated for hydrologically sensitive habitats and species which rely on hydrologically sensitive habitats.</p>
Lower Derwent Valley SPA	<p>Bewick's swan, Eurasian wigeon, Eurasian teal, European golden plover, ruff (non-breeding), northern shoveler (breeding), waterbird assemblage</p> <p>Underlying SSSIs:</p> <ul style="list-style-type: none"> <li>• Brighton Meadows SSSI: 100% Favourable</li> <li>• Derwent Ings SSSI: c.60% Favourable, c. 49% Unfavourable-Recovering, less than 1% Unfavourable-Declining</li> <li>• Melbourne and Thornton Ings SSSI : c.58% Unfavourable-Recovering, c. 42% Favourable</li> <li>• Newton Mask SSSI: 100% Favourable</li> <li>• River Derwent SSSI: c.94% Unfavourable – Recovering, c.6% Favourable, c.1% Unfavourable-No change</li> </ul>	<p>Lower Derwent Valley SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.</p>

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Malham Tarn Ramsar	<p>Open water, fen, raised bog, soligenous mire and a calcareous stream. Important communities of rare plant species and wetland</p> <p>invertebrates. The Tarn is the highest marl lake in Britain (lying at an altitude of 380m), whilst the unusual combination of acidophilous bog with calcicolous fen and soligenous mire, provides a range of mire vegetation unparalleled elsewhere in Britain in areas of similar size. The site holds the nationally rare <i>Bartsia alpina</i> and <i>Calamagrostis stricta</i>, <i>Potentilla tabernaemontani</i>, <i>Carex capillaris</i>, <i>C. appropinquata</i>, <i>Epipactis atrorubens</i>, <i>Hornungia petraea</i>, <i>Andromeda polifolia</i> and <i>Salix myrsinifolia</i>. An assemblage of rare wetland invertebrates including <i>Agrypnia crassicornis</i> Other Red Data Book wetland invertebrate species: <i>Hydrothassa hannoveriana</i>, <i>Macrolea appendiculata</i>, <i>Coenosia paludis tiensuu</i> and <i>Maro lepidus casemir</i>. A significant number of rare non-wetland invertebrates also occur. Supports breeding waterfowl and breeding twite</p> <p>Underlying SSSI: Malham-Arncliffe SSSI: c.86% Unfavourable-recovering, c.27% Favourable, c.5% Unfavourable-No change, less than 1% Unfavourable-Declining</p>	Malham Tarn Ramsar is within the RBD and is designated for hydrologically sensitive habitats.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Midland Meres and Mosses Phase 1 Ramsar	<p>The site comprises a diverse range of habitats from open water to raised bog.</p> <p>Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).</p> <p>Underlying SSSIs within the RBD: Chartley Moss SSSI : 100% Unfavourable – Recovering;</p>	Midland Meres and Mosses Phase 1 Ramsar is within the RBD and neighbouring Severn RBD, and North West RBD. It is designated for lowland wetland habitats, including open water and raised bog. These habitats (and associated wetland invertebrates) are hydrologically sensitive and inherently linked to the River Basin District.
Midland Meres and Mosses Phase 2 Ramsar	<p>The site comprises a diverse range of habitats from open water to raised bog.</p> <p>Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane <i>Cicuta virosa</i> and, elongated sedge <i>Carex elongata</i>. Also present are the nationally scarce bryophytes <i>Dicranum affine</i> and <i>Sphagnum pulchrum</i>.</p> <p>Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth <i>Glyphipteryx lathamella</i>, the caddisfly <i>Hagenella clathrata</i> and the sawfly <i>Trichiosoma vitellinae</i>.</p> <p>Underlying SSSIs within the RBD: Cop Mere SSSI: c.51% Unfavourable-No change, c.47% Unfavourable-Recovering, c.2% Favourable</p>	The Midland Meres and Mosses Phase 2 Ramsar is within the RBD and neighbouring Severn RBD, North West RBD, and Dee RBD. It is designated for lowland wetland habitats, including open water and raised bog. Furthermore, faunal and floral wetland specialists are present, including bryophytes, moths, caddisflies and sawflies. These habitats (and associated wetland invertebrates) are hydrologically sensitive and inherently linked to the River Basin District.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
North Pennine Dales Meadows SAC	Purple moor-grass meadows, mountain hay meadows.	North Pennine Dales Meadows SAC is within the RBD and is designated for hydrologically sensitive habitats.
North Pennine Moors SAC	Wet heathland with cross-leaved heath, European dry heaths, juniper on heaths or calcareous grasslands, grasslands on soils rich in heavy metals, montane acid grasslands, dry grasslands and scrublands on chalk or limestone, blanket bogs, hard-water springs depositing lime, calcium-rich spring water fed fens, acidic scree, plants in crevices in base-rich rocks and plants in crevices on acid rocks.	North Pennine Moors SAC is within the RBD and is designated for hydrologically sensitive habitats.
North Pennine Moors SPA	Hen harrier, merlin, peregrine falcon, and golden plover (breeding).	North Pennine Moors SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.
North York Moors SAC	Wet heathland with cross-leaved heath, European dry heaths, blanket bogs.	North York Moors SAC is within the RBD and is designated for hydrologically sensitive habitats.
North York Moors SPA	Merlin and golden plover.	North York Moors SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.
Pasturefields Saltmarsh SAC	Inland saltmarshes	Pasturefields Saltmarsh SAC is within the RBD and is designated for hydrologically sensitive habitats.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
Peak District Dales SAC	European dry heaths, grasslands on soils rich in heavy metals, dry grasslands and scrublands on chalk or limestone, calcium-rich spring water fed fens, base-rich scree, plants in crevices in base-rich rocks, mixed woodland on base-rich soils associated with rocky slopes, white-clawed crayfish, brook lamprey, bullhead.	Peak District Dales SAC is within the RBD and is designated for hydrologically sensitive habitats.
Peak District Moors (South Pennine Moors Phase 1) SPA	Merlin, European golden plover, short-eared owl (breeding)	Peak District Moors SPA is within the RBD and is designated for species which rely on hydrologically sensitive habitats.
River Derwent SAC	Rivers with floating vegetation often dominated by water-crowfoot, sea lamprey, river lamprey, bullhead, otter.	River Derwent SAC is within the RBD and is designated for hydrologically sensitive habitats and for species which rely on hydrologically sensitive habitats.
Rutland Water SPA	Gadwall, northern shoveler (non-breeding), waterbird assemblage	The site is 1.5 km south of RBD and although hydrologically sensitive, the fact it is in a separate River Basin District indicates measures within the Humber RBD would not affect it.
Skipwith Common SAC	Wet heaths with cross-leaved heath, European dry heaths	Skipworth Common SAC is within the RBD and is designated for hydrologically sensitive habitats.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website <sup>24</sup> )	Summary of connectivity with the River Basin District
South Pennine Moors Phase 2 SPA	Merlin (breeding), golden plover (breeding) and breeding bird assemblage	South Pennine Moors Phase 2 SPAs I is located within the RBD and the neighbouring North West RBD and is designated for species which rely on hydrologically sensitive habitats.
South Pennine Moors SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i> ; Wet heathland with cross-leaved heath. European dry heaths. Blanket bogs. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface. Old sessile oak woods with Ilex and Blechnum in the British Isles.	South Pennine Moors SAC is located within the RBD and the neighbouring North West RBD and is designated for habitats which rely on hydrologically sensitive habitats.
Strensall Common SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i> ; Wet heathland with cross-leaved heath. European dry heaths	Strensall Common SAC is within the RBD and is designated for hydrologically sensitive habitats.
Thorne & Hatfield Moors SPA	<p>Degraded raised bogs still capable of natural regeneration</p> <p>Underlying SSSI:</p> <p>Hatfield Moors SSSI: c.92% Unfavourable – Recovering, c.7% Unfavourable - No change, c.1% Favourable</p> <p>Thorne, Crowle and Goole Moors SSSI: c.92 Unfavourable – Recovering, c.4% Favourable, c. 3% Unfavourable-No change, c. 1% Unfavourable-Declining</p>	Thorne & Hatfield Moors SPA is within the RDB and is designated for hydrologically sensitive habitats
West Midlands Mosses SAC	Natural dystrophic lakes and ponds; Acid peat-stained lakes and ponds and transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface	West Midlands Mosses SAC is within the RBD and neighbouring North West RBD, Severn RBD



- 4.20 Having identified the European sites within 10km that are likely to be hydrologically linked to flood risk management activities, consideration was next given to the potential impact sources from the FRMP at all stages and pathways to European sites (including those located at distances of more than 10km if there is connectivity) by which effects could arise on qualifying features.
- 4.21 Based on all possible impacts, pathways, and receptors, the Test of Likely Significant Effects for each measure in the FRMP is undertaken in the following tables.

**Table 3. Screening table showing the Test of Likely Significant Effects results for Lead Local Flood Authority (LLFA) national measures contained within all Flood Risk Management Plans**

Measure ID	Measure	Likely Significant Effects on European sites
0299999007	Act as a consultee for major planning applications in their area	No likely significant effect – This measure describes the role of LLFAs
0299999011	Designate third party flood risk assets and maintain a register of designated flood risk assets in their area	No likely significant effect – Designating assets and maintaining a register will not affect European sites
0299999003	Implement relevant government guidance on taking climate change into account where necessary for flood risk decision making in their area	No likely significant effect – Taking climate change into account will not affect European sites
0299999018	Investigate local flood events where appropriate and necessary in their area	No likely significant effect – Investigating local flood events will not affect European sites
0299999002	Maintain, keep under review, apply and monitor a local flood risk management strategy in their area	No likely significant effect – The production of a local flood risk management strategy will not itself affect European sites
0299999015	Plan flood risk management projects to achieve wider environmental benefits where appropriate in their area	No likely significant effect – Ensuring that flood risk projects achieve wider environmental benefits will not negatively affect European sites
0299999006	Provide information to inform spatial and infrastructure planning, development and regeneration in their area	No likely significant effect – The provision of information will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0299999013	Regulate the condition of, and third party activity on, ordinary watercourses and review new works on ordinary watercourses in their area	No likely significant effect – Regulating activities and works will not affect European sites
0299999004	Start implementing steps to work towards net zero carbon in their area	No likely significant effect – Implementing net zero carbon will not affect European sites
0299999016	Support communities to increase their resilience to flooding in their area	No likely significant effect – Supporting communities to increase resilience to flooding will not affect European sites
0299999017	Support emergency response partners and communities to plan, prepare and exercise for future flood scenarios in their area	No likely significant effect – Supporting planning for emergency response to flooding will not affect European sites
0299999012	Take a risk based approach to develop and maintain a register of flood risk assets/features in their area	No likely significant effect – Maintaining a register of assets will not affect European sites
0299999005	Work in partnership with other risk management authorities to reduce the risk of flooding from all sources in their area	No likely significant effect – This is a wide-ranging measure and the details include that by 2027, risk management authorities will have developed and/or delivered a programme of flood risk management capital schemes and/or maintenance to reduce risk of flooding and coastal change and its adverse consequences for human health and wellbeing. Individual capital schemes may have an effect on European sites depending on what and where they are and how they are to be delivered. However, developing a programme of capital schemes will not itself lead to likely significant effects on European sites. Any individual capital schemes will need to be subject to HRA before being consented, in order to comply with legislation.

Measure ID	Measure	Likely Significant Effects on European sites
0299999009	Work with other flood asset owners and riparian landowners to raise awareness of, and where necessary enforce, maintenance responsibilities in their area	No likely significant effect – specific maintenance measures could have an adverse effect on European sites (although they are unlikely to be approved measures if so) but a requirement to raise awareness of, and enforce where required, necessary flood asset maintenance will not adversely affect European sites.
0299999010	Work with other risk management authorities to identify a programme of nature based approaches in their area	No likely significant effect – this is a generic national measure and the general principle of working with other authorities to identify a programme of nature-based approaches will not adversely affect European sites.
0299999008	Work with other risk management authorities to provide information where necessary to update flood maps in their area	No likely significant effect – providing information will not adversely affect European sites.
0299999014	Work with other risk management authorities to support the delivery of flood projects in their area	No likely significant effect – providing support to other authorities will not adversely affect European sites.
0299999019	Work with others to support communities through the recovery phase of a significant flood event in their area	No likely significant effect – supporting communities will not adversely affect European sites.

**Table 4. Screening table showing the Test of Likely Significant Effects results for Environment Agency national measures contained within all Flood Risk Management Plans**

Measure ID	Measure	Likely Significant Effects on European sites
0299999041	Continue to review flood events to improve and develop flood services in England	No likely significant effect – reviewing flood events will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999025	Designate flood risk assets where necessary in England	No likely significant effect – designating flood risk assets will not adversely affect European sites.
0299999046	Drive down carbon emissions and deliver the required flood risk management outcomes when planning and carrying out flood risk management works in England	No likely significant effect – driving down carbon emissions will not adversely affect European sites.
0299999030	In its strategic overview role, work with risk management authorities, including facilitating effective partnerships in local places in England	No likely significant effect – working with risk management authorities will not adversely affect European sites.
0299999044	Invest in flood risk management projects to contribute to improving the natural, built and historic environments	No likely significant effect – investing in projects will not adversely affect European sites.
0299999035	Issue and maintain guidance on taking climate change into account for flood risk decision making in England	No likely significant effect – issuing guidance will not adversely affect European sites.
0299999026	Maintain and update a database of its flood risk assets in England	No likely significant effect – maintaining a database will not adversely affect European sites.
0299999020	Monitor weather, tidal, rainfall and river conditions to provide flood forecasts in England	No likely significant effect – monitoring will not adversely affect European sites.
0299999042	Plan all flood risk management projects in England to achieve biodiversity net gain and wider environmental benefits	No likely significant effect – planning for biodiversity net gain will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999043	Plan all flood risk management projects in England to help achieve river basin management plan objectives	No likely significant effect – this measure is about achieving the environmental objectives of river basin management plans. This will not adversely affect European sites.
0299999033	Provide quality and timely planning advice to help avoid inappropriate development in areas at risk of flooding in England	No likely significant effect – provision of planning advice will not adversely affect European sites.
0299999031	Regulate large, raised reservoirs in England	No likely significant effect – regulating reservoirs to reduce the risk of flooding from dam and reservoir failures will not adversely affect European sites.
0299999028	Regulate new works to main rivers and sea defences in England	No likely significant effect – regulating new works to reduce the likelihood of flooding will not adversely affect European sites.
0299999039	Respond to flood events and support other emergency responders in England	No likely significant effect – responding to flood events to reduce the consequences of flooding will not adversely affect European sites.
0299999040	Support communities to increase their resilience to flooding in England	No likely significant effect – supporting communities to help them increase their resilience will not adversely affect European sites.
0299999023	Take a risk based approach to inspect, maintain and operate assets in England	No likely significant effect – adopting a risk based approach will not adversely affect European sites.
0299999027	Take targeted enforcement action where there are blockages or unpermitted structures in England	No likely significant effect – taking enforcement action regarding blockages or unpermitted structures will not adversely affect European sites.
0299999024	Understand the long term needs of its assets and plan for their whole life management in England	No likely significant effect – developing an understanding of long-term asset needs will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999045	Work with catchment partnerships, communities and other risk management authorities to maximise the use of nature based solutions in England	No likely significant effect - this is a generic national measure and the general principle of working with other authorities to identify a programme of nature-based approaches will not adversely affect European sites.
0299999021	Work with emergency response partners to issue appropriate flood warnings in England	No likely significant effect – issuing flood warnings will not adversely affect European sites.
0299999022	Work with emergency response partners to plan, prepare and exercise for future flood scenarios in England	No likely significant effect – preparing for flood scenarios will not adversely affect European sites.
0299999032	Work with local planning authorities, developers and other place makers in England	No likely significant effect – working with other authorities to ensure all new development is resilient to flooding will not adversely affect European sites.
0299999029	Work with research partners and the wider scientific community in England	No likely significant effect – working with research partners into new approaches to reduce risk of flooding will not adversely affect European sites.
0299999036	Work with risk management authorities and other partners to implement the National Flood and Coastal Erosion Risk Management Strategy in England	No likely significant effect – individual proposals within the National Flood and Erosion Risk Management Strategy may pose likely significant effects to European sites but the Strategy has been subject to its own HRA. The measure concerns working with other authorities to implement the Strategy, which will not itself adversely affect European sites.
0299999038	Work with risk management authorities to identify a programme of future flood risk management projects in England	No likely significant effect – a commitment to identify a programme of future projects will not adversely affect European sites. Individual schemes and projects may have an effect on European sites depending on what and where they are and how they are to be delivered. However, all schemes will need to be subject to HRA before being consented, in order to comply with legislation.

Measure ID	Measure	Likely Significant Effects on European sites
0299999034	Work with risk management authorities to maintain and update where necessary flood maps in England	No likely significant effect – maintaining and updating flood maps will not adversely affect European sites.
0299999037	Work with risk management authorities to support the delivery of flood risk management projects in England	No likely significant effect – supporting risk management authorities in delivering flood risk management projects will not itself adversely affect European sites. Individual schemes and projects may have an effect on European sites depending on what and where they are and how they are to be delivered. However, all schemes will need to be subject to HRA before being consented, in order to comply with legislation.

**Table 5. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the RBD**

Measure ID	Measure	Likely Significant Effects on European sites
0203804003	Between 2021 and 2027, the Environment Agency will carry out large scale tree planting and potentially the creation of other habitats (peatland, wetlands etc) in various places in the Environment Agency West Midlands Area of the Trent catchment to capture carbon, reduce the risk of flooding, enhance the environment and public access, and provide associated benefits for mental and physical wellbeing in the Humber River Basin District.	No likely significant effect, but down-the-line HRA required – measure likely to be positive or neutral towards hydrologically sensitive European sites, depending where individual schemes are located and the exact nature of the works, which is not detailed within the measure. The measure is too broad, lacking the detail needed to fully assess impacts at this stage and therefore all schemes will need to be subject to individual HRA before being consented, in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.



Measure ID	Measure	Likely Significant Effects on European sites
0203804124	Between 2021 and 2025, Severn Trent Water will co-operate and collaborate with Lead Local Flood Authority led Section 19 flood investigations in STW wastewater catchments to better understand flood risk and develop joint programmes of work in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804045	Between 2021 and 2027, the Environment Agency will complete a review of where trash screens on Main Rivers should be improved, added or removed, and progress delivery of the outcomes of that review in the Environment Agency West Midlands Area to reduce flood risk in the Humber River Basin District.	No likely significant effect, but down-the-line HRA required – the act of reviewing trash screens will not in itself cause an adverse effect upon European sites. On the ground works delivering additional trash screens or removing them, may potentially have an adverse impact depending on what, where and how the works were completed, which is not specified within the measures. Therefore, the measure is too broad to fully assess at this stage. All schemes will need to be subject to HRA before being consented, in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure. This measure includes areas outside of the RBD
0203804106	Between 2021 and 2025, Severn Trent Water will deliver a programme of Property Flood Resilience (PFR) measures in STW wastewater catchments to reduce the consequences of sewer flooding to properties in the Humber River Basin District.	No likely significant effect – there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804105	Between 2021 and 2025, Severn Trent Water will deliver a programme of schemes to accommodate additional wastewater from new developments in STW wastewater catchments to provide sufficient capacity in the sewer network to accommodate new homes and businesses, and therefore mitigate against increased flood risk, in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804104	Between 2021 and 2025, Severn Trent Water will deliver a programme of schemes to reduce capacity related sewer flood risk by increasing sewer capacity and managing runoff into sewers in STW wastewater catchments to reduce internal sewer flooding incidents in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0213704053	Between 2021 and 2027, Nottinghamshire County Council and the Environment Agency will deliver multiple Natural Flood Management Schemes in Nottinghamshire to provide homes better protected and reduce flood risk in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0212904007	Between 2021 and 2027, North East Lincolnshire Council and all North East Lincolnshire Risk Management Authorities and key stakeholders will deliver the key aims and objectives as outlined in the Flood Risk Management Strategy in North East Lincolnshire to manage flood risk from all sources in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.

Measure ID	Measure	Likely Significant Effects on European sites
0201004045	Between 2021 and 2027, the Environment Agency will develop a capital programme using the 'Communities at Risk' dataset in Nottinghamshire, Derbyshire, Leicestershire to ensure that 'Communities at Risk' are prioritised and the objectives Local Outcome Plan are implemented through investment decisions in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0203804024	By 2027, the Environment Agency will develop and carry out an evidence review of the people and wildlife benefits of the Transforming the Trent Valley project in the Trent valley and the Dove Valley to quantify the benefits of the project in the Humber River Basin District.	No likely significant effect – the measure is to carry out a review, there is no on the ground works. As there is no on the ground works, there will be no adverse impact upon European sites.
0203804108	Between 2021 and 2025, Severn Trent Water will develop and deliver a programme of retrofit sustainable drainage systems and blue green infrastructure schemes in STW wastewater catchments to deliver natural and social capital (measured by the CIRIA B£ST tool) to increase flood resilience in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804107	Between 2021 and 2025, Severn Trent Water will develop and deliver a programme of schemes with other risk management authorities to reduce flood risk from multiple sources, including sewer flooding in STW wastewater catchments to reduce flood risk to properties and areas in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804116	By 2022, Severn Trent Water will develop and publish the next cycle of our Climate Change Adaptation Report in STW wastewater catchments to show how we are planning for and adapting to climate change in the Humber River Basin District.	No likely significant effect – publishing a report will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804113	Between 2021 and 2023, Severn Trent Water will develop the first cycle of Drainage and Wastewater Management Plans (DWMP) in consultation with other risk management authorities in STW wastewater catchments to inform long term plans and provide the evidence base for future investment to manage flood risk from sewers and drainage systems in the Humber River Basin District.	No likely significant effect – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0201004043	Between 2021 and 2027, the Environment Agency will develop whole life asset management plans for strategically important assets in Nottinghamshire, Derbyshire, Leicestershire to understand condition of the asset base, develop a proactive maintenance and inspection programme, ensure a standard of service and optimise asset management delivery in the Humber River Basin District.	No likely significant effects – the measure is to develop asset management plans. The measure does not commit to undertaking any on the ground works. Therefore, no adverse impacts on European sites will occur. Additionally, this measure is already being implemented and therefore to comply with legislation, any potential impact would have to have had an HRA undertaken and should have concluded that no adverse effects would occur for the measure to be consented.
0203804121	Between 2021 and 2025, Severn Trent Water will engage with communities affected by flooding including Flood Action Groups, and do this in collaboration with other risk management authorities in STW wastewater catchments to mitigate and manage the impacts of flooding to people and properties in the Humber River Basin District.	No likely significant effects – the measure commits to engaging with communities affected by flooding. The measure does not commit to on the ground works and therefore there will be no adverse effect on European sites. Additionally, this measure is already being implemented and therefore to comply with legislation, any potential impact would have to have had an HRA undertaken and should have concluded that no adverse effects would occur for the measure to be consented. This measure includes areas outside of the RBD

Measure ID	Measure	Likely Significant Effects on European sites
0288804022	Between 2021 and 2027, the Environment Agency will engage with operators of Environmental Permitting Regulations sites and facilities that are registered under Control of Major Accident Hazards Regulations to raise awareness of flood risk and encourage preparedness in Humber River Basin District to reduce the potential impact of flooding on the environment in the Humber River Basin District	No likely significant effects – the measure commits to engaging with operators to raise awareness and encourage preparedness. The measure does not commit to any on the ground works and therefore there will be no adverse impacts on European sites.
0203804125	Between 2021 and 2025, Severn Trent Water will enhance existing ways of sharing FCERM information, including risk locations and programmes amongst risk management authorities in STW wastewater catchments to better understand flood risk and develop joint programmes of work in the Humber River Basin District.	No likely significant effects – the measure commits to enhancing existing ways of sharing information. The measure does not commit to any on the ground works and therefore there will be no adverse effects on European sites.
0203804114	Between 2021 and 2027, Severn Trent Water will enhance the natural environment and biodiversity as part of our Great Big Nature Boost campaign in STW wastewater catchments to revive acres of land, plant trees, restore rivers, which will contribute to increased flood resilience in the Humber River Basin District.	No likely significant effect – this measure will have a positive or neutral effect on European sites as it is a measure to enhance the natural environment and biodiversity within the RBD.
0203804117	By 2030, Severn Trent Water will deliver net zero carbon emissions and the use of 100% renewable energy use in our operations in STW wastewater catchments to mitigate against climate change in the Humber River Basin District.	No likely significant effects – this measure commits to using renewable energy and reducing carbon. The measure does not commit to any on the ground works and therefore there will be no adverse impact on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0201004041	Between 2021 and 2027, the Environment Agency will Expand the coverage of Flood Warning Service to communities at risk of flooding where No service is currently offered in Nottinghamshire, Derbyshire, Leicestershire to enable communities to be better prepared and more resilient for flood incidents in the Humber River Basin District.	No likely significant effects – this measure commits to extending the coverage of flood warning services. The measure does not commit to any on the ground works and therefore there will be no adverse impact on European sites.
0201004042	Between 2021 and 2027, the Environment Agency will identify and investigate locations highlighted by the Natural Flood Management opportunity mapping in Nottinghamshire, Derbyshire, Leicestershire to support flood prevention activities in 'Communities at Risk' in the Humber River Basin District.	No likely significant effects – this measure commits to investigating locations and supporting flood prevention activities, rather than implementing on the ground works. Any schemes for implementing works would down the line require a project level HRA to be undertaken to ensure that the scheme is legally compliant.  However, this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have conclude that no adverse effects would occur for the works to be consented.

Measure ID	Measure	Likely Significant Effects on European sites
0203804046	<p>Between 2021 and 2027, the Environment Agency will identify opportunities to decommission Environment Agency maintained assets where long term maintenance of current level of protection is uneconomical in the Environment Agency West Midlands Area to ensure available public funding to maintain assets is invested where it will maximise the value of the benefits in the Humber River Basin District.</p>	<p>No likely significant effects, but down-the-line HRA required – this measure may or may not have adverse impacts upon sensitive European sites. The decommissioning of flood prevention assets may change the hydrology linked to sensitive sites. However, the impacts could only be assessed when details on where, when and how these assets would be decommissioned are included. This measure is too broadly defined to give enough information to assess at this stage. Therefore, all schemes will need to be subject to HRA before being consented, in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.</p> <p>This measure includes areas outside of the RBD</p>
0216504073	<p>Between 2021 and 2027, Staffordshire County Council and Stoke-on-Trent City Council and Staffordshire Civil Contingencies Unit will improve local flood risk community support in Staffordshire to reduce local flood risk in the Humber River Basin District.</p>	<p>No likely significant effects, but down-the-line HRA required – this measure commits to improving local flood risk community support rather than any on the ground works. Improving community support will not in itself cause an adverse impact on European sites. Any on the ground works down the line, resulting from this measure will require a project level HRA before being consented, in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.</p>
0216504074	<p>Between 2021 and 2027, Staffordshire County Council will install community small flood resilience schemes in Staffordshire to reduce flood risk to residential and commercial properties in the Humber River Basin District.</p>	<p>No likely significant effects – there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.</p>

Measure ID	Measure	Likely Significant Effects on European sites
0203804112	Between 2021 and 2025, Severn Trent Water will install permanent monitors in the sewer network in STW wastewater catchments to help prevent flooding incidents before they occur in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0201004044	Between 2021 and 2027, the Environment Agency will maintain a prioritised programme of mapping and modelling in Nottinghamshire, Derbyshire, Leicestershire to ensure our flood risk information remains up to date and fit for purpose in the Humber River Basin District.	No likely significant effects – this measure commits to ensuring mapping and modelling is maintained to ensure information is up to date. No on the ground works are committed to in this measure and therefore will not cause adverse impacts on European sites. This measure includes areas outside of the RBD
0201004047	Between 2021 and 2027, the Environment Agency will maintain and update data concerning strategically important assets in Nottinghamshire, Derbyshire, Leicestershire to ensure our flood risk and asset data is correct, maintained and assured to enable effective evidence based decision making in the Humber River Basin District.	No likely significant effects – this measure commits to maintaining and updating data on strategically important assets. No on the ground works are committed to in this measure and therefore will not cause adverse impacts on European sites.
0216504072	By 2022, Staffordshire County Council will map funding and external partnership opportunities in Staffordshire to provide and maximise opportunities for flood risk protection in the Humber River Basin District.	No likely significant effects – this measure commits to mapping funding an external partnership opportunity. No on the ground works are committed to in this measure and therefore will not cause adverse impacts on European sites.



Measure ID	Measure	Likely Significant Effects on European sites
0216504070	Between 2021 and 2024, Staffordshire County Council will map, model and work with others to create surface water reduction plans in Staffordshire to reduce local flood risk in the Humber River Basin District.	No likely significant effects, but down-the-line HRA required – this measure commits to mapping and modelling to create surface water reduction plans. This measure does not commit to on the ground works. Any on the ground works resulting from this measure will be required to undergo a down the line project level HRA, to ensure compliance with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0203804030	Between 2021 and 2027, the Environment Agency will monitor the effectiveness of natural flood management interventions in the Environment Agency West Midlands Area to build a comprehensive evidence base and share knowledge to justify further investment in natural flood management interventions in the future in the Humber River Basin District.	No likely significant effects – this measure commits to monitoring the effectiveness of natural flood management interventions. It does not commit to any on the ground works and therefore will not cause an adverse effect on European sites.
0216504067	Between 2021 and 2023, Staffordshire County Council and Stoke-on-Trent City Council will produce Community Flood Risk Assessments and multi-agency plans in Staffordshire to use to prioritise future actions within Staffordshire in the Humber River Basin District.	No likely significant effect – this measure commits to creating plans and does not commit to any on the ground works and therefor will not cause an adverse effect on European sites.
0216504068	Between 2021 and 2027, Staffordshire County Council and Stoke-on-Trent City Council and Staffordshire Civil Contingencies Unit will produce Tactical Flood Plans in Staffordshire to make communities more resilient to flooding in the Humber River Basin District.	No likely significant effect – this measure commits to creating plans and does not commit to any on the ground works and therefor will not cause an adverse effect on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0216504066	By 2022, Staffordshire County Council will produce a refreshed Local Flood Risk Management Strategy that aligns with Staffordshire County's Strategic Plan in Staffordshire County to deliver Local Flood Risk Management Strategy Outcomes in the Humber River Basin District.	No likely significant effect, but down-the-line HRA required – this measure commits to producing a plan, rather than committing to deliver the specific actions of that plan. As the measure does not commit to undertake these actions there is no on the ground works and so no adverse impact to European sites. Additionally, the management strategy will be required to undergo a HRA itself for any schemes that it produces, before being consented, to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0203804111	Between 2021 and 2025, Severn Trent Water will provide education to raise awareness of, and promote action against, disposing fats, oils, grease and un-flushable materials into the sewer network in STW wastewater catchments to help reduce incidents of preventable sewer flooding in the Humber River Basin District.	No likely significant effect – this measure commits to providing education around the impacts putting great, fat, oil and un-flushable material into the sewage systems. This measure includes areas outside of the RBD
0216504069	Between 2021 and 2027, Staffordshire County Council will research and work with partners and Non Governmental Organisations to identify planning & development risks and opportunities in Staffordshire to reduce flood risk in the Humber River Basin District.	No likely significant effect – this measure is a desk based research and planning measure, which does not commit to any on the ground works. As no on the ground works are committed to there will be no adverse effect on European sites.
0203804122	Between 2021 and 2025, Severn Trent Water will respond to incidents of sewer flooding including working with local resilience forums and Civil Contingencies Act Category 1 and 2 responders in STW wastewater catchments to mitigate and manage the impacts of flooding to people and properties in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD

Measure ID	Measure	Likely Significant Effects on European sites
0203804115	Between 2021 and 2025, Severn Trent Water will review and comment on planning applications (using a prioritised risk based approach) and engage with developers in STW wastewater catchments to help manage the impact of increased flows to the sewer network and encourage the sustainable management of surface water in the Humber River Basin District.	No likely significant effect – this measure commits to reviewing and commenting on planning applications. It does not commit to any on the ground works and therefore there will be no adverse impact on European sites. This measure includes areas outside of the RBD
0201004040	Between 2021 and 2027, the Environment Agency will Review hydrometric monitoring networks in relation to flood warnings, and revise flood warning areas and trigger levels in Nottinghamshire, Derbyshire, Leicestershire to improve accuracy and resolution of flood warning as a strategic option to reduce the impact of future increased flows and tide levels in the Humber River Basin District.	No likely significant effect – this measure commits to reviewing monitoring networks to improve accuracy and resolution of flood warning systems. No on the ground works are committed to in this measure and therefore there will be no adverse impact on European sites.
0216504071	By 2023, Staffordshire County Council will standardise procedures for flood events and create tools, processes and/or systems for knowledge sharing and cooperation in Staffordshire to improve flood event preparedness & partnership working in the Humber River Basin District.	No likely significant effect – this measure commits to standardising procedures and create tools, processes and/or systems for knowledge sharing. No on the ground works are committed to in this measure and therefore will be no adverse impact on European sites.
0203804119	Between 2021 and 2025, Severn Trent Water will support Lead Local Flood Authorities develop, maintain, apply and review local flood risk management strategies in STW wastewater catchments to manage local flood risk in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD

Measure ID	Measure	Likely Significant Effects on European sites
0203804120	Between 2021 and 2025, Severn Trent Water will support Lead Local Flood Authorities to develop and deliver Surface Water Management Plans in STW wastewater catchments to manage local flood risk in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804123	Between 2021 and 2025, Severn Trent Water will support risk management authorities (RMAs) to develop and deliver RMA led flood alleviation schemes in STW wastewater catchments to reduce the risk of flooding in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0201004039	Between 2021 and 2027, the Environment Agency will undertake a prioritised programme of hydrometry and telemetry improvements in Nottinghamshire, Derbyshire, Leicestershire to which may include creating new assets, or increasing the life or performance of existing assets. This work will support our flood forecasting, warning and response activities. in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0213704055	Between 2021 and 2027, Nottinghamshire County Council will undertake a programme of countywide Property Flood Resilience installation in Nottinghamshire to make homes more resilient and better prepared for flooding in the Humber River Basin District.	No likely significant effects – there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804110	Between 2021 and 2025, Severn Trent Water will undertake activities to maintain the sewer network to reduce the blockages in STW wastewater catchments to reduce sewer blockages in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804109	Between 2021 and 2025, Severn Trent Water will undertake proactive and reactive risk prioritised maintenance and repair activities of the sewer network in STW wastewater catchments to to reduce internal and external sewer flooding incidents caused by blockages, collapses and equipment failures on the sewer network in the Humber River Basin District.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. This measure includes areas outside of the RBD
0203804002	Between 2021 and 2027, the Environment Agency will work with regional groups and other partners to identify opportunities, develop and if possible deliver joint water management solutions in the Environment Agency West Midlands Area to improve flood resilience and to support the environment and economic growth in the Humber River Basin District.	No likely significant effects, but down the line HRA – this measure commits to identifying opportunities and developing solutions which as they are a desk based activity would not cause an adverse impact upon European sites. Additionally, the measure commits to delivering, if possible, the solutions. Therefore, there is potential for an adverse impact for these schemes. These impacts would depend on what, where, when and how these schemes were delivered which is unavailable at this strategic stage. Therefore, all the joint water management solutions bought forward under this measure would require a down the line project level HRA, to ensure compliance with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure. This measure includes areas outside of the RBD.

Measure ID	Measure	Likely Significant Effects on European sites
0201004038	Between 2021 and 2027, the Environment Agency will work with the Local Resilience Forum and communities to develop a flood plan and support flood warden schemes in Nottinghamshire, Derbyshire, Leicestershire to enable communities to be better prepared and more resilient for flood incidents in the Humber River Basin District.	No likely significant effects – Developing a flood plan and supporting flood warden schemes is a desk-based activity that will not affect European sites.
0203804404	By 2027, the Environment Agency will continue to work with partners to further engage with businesses and local communities to improve awareness and promote action that delivers multiple benefits in Environment Agency West Midlands and East Midlands Areas to reduce flood risk, improve the environment and contribute to climate resilience in the Humber River Basin District.	No likely significant effect – engagement with businesses and local communities to improve awareness would not affect European sites.

**Table 6. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Aire and Calder Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0211404086	By 2027, Leeds City Council and the Environment Agency will collaborate with partner organisation to ensure that the Flood Alleviation Schemes incorporate environmental benefits wherever possible in Leeds to contribute to achieving wider environmental benefits in the Aire and Calder Management Catchment.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.  This measure mentioned achieving wider environmental benefits and as such the activities and schemes that fall out of this measure could be positive for European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0204204016	By 2027, the Environment Agency and Bradford Metropolitan District Council will continue investigations into all sources of flooding in Bradford District to better understand the local flood risk and develop associated plans in the Aire and Calder Management Catchment.	No likely significant effect – this measure is committing to continue with investigations into sources of flooding. There are no works to be undertaken and therefore no adverse impact to European sites.
0206404029	By 2027, Calderdale Council and the Environment Agency will continue reviews and maintenance of existing critical assets which have an impact on flood risk in Calder Valley to maintain flood protection operations in the Aire and Calder Management Catchment.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0206404026	By 2027, Calderdale Council and the Environment Agency will continue to work with communities to encourage ownership of flood risk, promote property flood resilience and support local flood groups/wardens in Calder Valley to help members of the community take ownership to reduce their flood risk and be better prepared during a flood event in the Aire and Calder Management Catchment.	No likely significant effects – this measure commits to encouraging the community to be better prepared and to reduce their own flood risk. The measure does not commit to on the ground works and therefore there will be no adverse impact on European sites.
0204204015	By 2027, the Environment Agency and Bradford Metropolitan District Council will continue to work with the local communities to increase their understanding and preparedness of flooding in Bradford District to improve personal, business and community flood resilience in the Aire and Calder Management Catchment.	No likely significant effects – this measure commits to working with communities to increase understanding and preparedness of flooding. The measure does not commit to on the ground works and therefore there will be no adverse impact on European sites.
0204204082	By 2027, the Environment Agency and Leeds City Council will continue to work with the local communities to increase their understanding and preparedness of flooding in Leeds to improve personal, business and community flood resilience. in the Aire and Calder Management Catchment.	No likely significant effects – this measure commits to working with communities to increase understanding and preparedness of flooding. The measure does not commit to on the ground works and therefore there will be no adverse impact on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0218004111	By 2027, Wakefield Council and the Environment Agency will continue to work with the local communities to increase their understanding, preparedness and resilience of flooding in Wakefield District to reduce the impact of flooding in the Aire and Calder Management Catchment.	No likely significant effects – this measure commits to working with communities to increase understanding and preparedness of flooding. The measure does not commit to on the ground works and therefore there will be no adverse impact on European sites.
0204204013	By 2027, the Environment Agency and Bradford Metropolitan District Council will deliver Natural Flood Management as part of wider flood alleviation schemes in Bradford District to deliver multiple benefits including environment, economic, social and wellbeing improvements in the Aire and Calder Management Catchment.	No likely significant effects – the urban areas of Bradford are relatively remote from, and unconnected to, hydrologically sensitive European sites and natural flood management is environmentally positive.
0204204081	By 2027, Yorkshire Water Services and other risk management authorities will develop and implement a Drainage and Wastewater Management Plan in Leeds to improve drainage and environmental water quality. in the Aire and Calder Management Catchment.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0204204007	By 2027, the Environment Agency and Bradford Metropolitan District Council (including Yorkshire Water) will develop flood risk improvement options on the Worth in Keighley and Stockbridge to reduce the risk of flooding in the Aire and Calder Management Catchment.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0211004078	By 2027, Kirklees Council and the Environment Agency will engage with landowners in rural areas to embrace land management techniques and natural processes to help to reduce the rate of surface water run-off in Kirklees to reduce flood risk in the Aire and Calder Management Catchment.	No likely significant effects - this measure commits to engaging with landowners and encouraging them to embrace natural processes to reduce surface water runoff.



Measure ID	Measure	Likely Significant Effects on European sites
0204204008	By 2027, the Environment Agency and Bradford Metropolitan District Council will explore environmental options within future capital schemes in Bradford District to enhance the environment whilst also reducing flood risk in the Aire and Calder Management Catchment.	No likely significant effects – the measure commits to exploring option, rather than any on the ground works and therefore will be no adverse impact on European sites.
0204104108	By 2027, the Environment Agency and Wakefield Council will explore feasibility of upgrading assets on existing Castleford flood alleviation scheme in Castleford to reduce the risk of flooding in the Aire and Calder Management Catchment.	No likely significant effects – exploring the feasibility of upgrading assets is a desk based activity and therefore no adverse impacts on European sites.
0211004073	By 2027, Kirklees Council and Environment Agency (including Yorkshire Water) will explore integrated solutions to deliver multiple benefits for Kirklees to reduce flood risk and look to improve economic, social and environmental benefits in Kirklees to create multiple benefits with schemes in the Aire and Calder Management Catchment.	No likely significant effects, but down the line HRA required – exploring integrated solutions is a desk based activity and will therefore in itself will not create an adverse effect on European sites, however, any on the ground solutions that come out of this measure have the potential to affect European sites. Therefore, all solutions will require a down the line HRA, to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure. This measure mentioned improving environmental benefits and as such the activities and schemes that fall out of this measure could be positive for European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0204204009	By 2027, the Environment Agency and Bradford Metropolitan District Council will explore integrated solutions to deliver multiple benefits in Bradford District to reduce flood risk whilst enhancing economic, social and environmental benefits in the Aire and Calder Management Catchment.	No likely significant effects, but down the line HRA – exploring integrated solutions is a desk based activity and will therefore in itself will not create an adverse effect on European sites, however, any on the ground solutions that come out of this measure have the potential to affect European sites. Therefore, all solutions will require a down the line HRA, to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure. This measure mentioned improving environmental benefits and as such the activities and schemes that fall out of this measure could be positive for European sites.
0218004106	By 2027, Wakefield Council and the Environment Agency will explore opportunities for delivering flood risk improvement options in Wakefield District to reduce the risk of flooding in the Aire and Calder Management Catchment	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented. Moreover, this measure is simply a commitment to explore opportunities without committing to specific initiatives, and, with the exception of Denby Grange Colliery Ponds SAC which given their location and nature are unlikely to be associated with flood risk issues, Wakefield District is relatively remote from hydrologically sensitive European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204104105	Explore opportunities for working with nature as part of flood risk improvement works in Wakefield District to provide environmental benefits	No likely significant effects – with the exception of Denby Grange Colliery Ponds SAC which given their location and nature are unlikely to be associated with flood risk issues, Wakefield District is relatively remote from hydrologically sensitive European sites and exploring opportunities to work with nature to provide environmental benefits will generally be positive for European sites.
0206404027	Explore surface water management improvements in Calder Valley to reduce flood risk from surface water	No likely significant effects – the hydrologically sensitive European sites in Calderdale are upland and therefore managing surface water flood risk (i.e. flood risk due to excessive rainfall and limited drain capacity) in the Calder Valley will not present mechanisms to affect European sites.
0204104028	Further develop options and opportunities to implement nature based solutions in the upper catchment in Calder Valley to reduce peak flood flows	No likely significant effects – nature based solutions may have a positive or negative affect on hydrologically sensitive European sites within the Calder Valley Catchment. However, the measure is too broadly designed at this stage to provide meaningful assessment. Therefore, further assessment will be required when details are present.
0204104071	Identify and develop flood risk improvements in Kirklees to reduce the risk of fluvial flooding in Kirklees	No likely significant effects – there are no European sites in or around Kirklees that would be affected by measures to address fluvial flooding in that district. Moreover, this measure is simply a general commitment to identify and develop a package of measures.

Measure ID	Measure	Likely Significant Effects on European sites
0211004070	Identify and develop flood risk improvements in Kirklees to reduce the risk of surface water flooding in Kirklees	No likely significant effects – the hydrologically sensitive European sites in Kirklees are upland and therefore managing surface water flood risk (i.e. flood risk due to excessive rainfall and limited drain capacity) will not present mechanisms to affect European sites. Moreover, this measure is simply a general commitment to identify and develop a package of measures.
0204204079	Identify and develop flood risk management measures in Leeds District in Leeds to reduce the risk of flooding	No likely significant effects – it is understood that this measure relates to a review of the River Aire Catchment Flood Management Plan. There are no European sites within or close to Leeds that would be affected by River Aire flood management in that authority (the Humber Estuary European sites are 27km distant). Moreover, this measure is simply a general commitment to identify and develop a package of measures.
0211404080	Identify and develop flood risk management measures, studies and improvements in Leeds to reduce the risk of flooding in Leeds	No likely significant effects – it is understood that this measure relates to a review of the Local Flood Risk Management Plan. There are no European sites within or close to Leeds that would be affected by flood management in that authority (the Humber Estuary European sites are 27km distant). Moreover, this measure is simply a general commitment to identify and develop a package of measures.
0204104107	Improve understanding of flood risk within Wakefield District using modelling and historic evidence in Wakefield District to enhance preparedness for flood events	No likely significant effect – a commitment to improving understanding of flood risk will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0204104020	Invest in flood risk improvement schemes in Calder Valley to reduce the risk of flooding and manage coastal change	No likely significant effect – this measure applies to the Calder Valley in Calderdale District. The hydrologically sensitive European sites in Calderdale are upland and therefore managing flood risk in the Calder Valley will not present mechanisms to affect European sites. Moreover, this measure is simply a commitment to invest in a programme of such schemes without specifically committing to any individual schemes.
0204104022	By 2027, the Environment Agency and Calderdale Council will invest in flood risk improvement schemes in Sowerby Bridge to reduce the risk of flooding and manage coastal change in the Aire and Calder Management Catchment.	No likely significant effect – this measure applies to Calderdale District. The hydrologically sensitive European sites in Calderdale are upland and therefore managing flood risk in the Calder Valley will not present mechanisms to affect European sites. Moreover, this measure is simply a commitment to invest in a programme of such schemes without specifically committing to any individual schemes.
0204104110	Investigate opportunities for flood risk improvements associated with Horbury Bridge in Horbury to reduce the risk of flooding	No likely significant effect - with the exception of Denby Grange Colliery Ponds SAC which given their location and nature are unlikely to be associated with flood risk issues, Wakefield District is relatively remote from hydrologically sensitive European sites. Moreover, this measure is simply a general commitment to explore opportunities without any commitment to particular initiatives.
0204104075	Work in collaboration with key partners to progress and develop options for Dewsbury and Batley to reduce the risk of flooding	No likely significant effect – there are no European sites in or around Kirklees that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to develop a package of measures.

Measure ID	Measure	Likely Significant Effects on European sites
0204104074	Work in collaboration with key partners to progress and develop options for Spen to reduce the risk of flooding in Spen to reduce flood risk	No likely significant effect – there are no European sites in or around Kirklees that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to develop a package of measures.
0204204012	Work in collaboration with key partners to progress and develop options in Worth Valley and its tributaries in Bradford District to reduce flood risk	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to develop a package of measures.
0204204019	Work in collaboration with key partners to progress and develop options on the River Aire in Bradford District to reduce flood risk	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to develop a package of measures.
0211004072	Work with the local communities to increase their understanding and preparedness of flooding for Kirklees to improve personal, business and community flood resilience in Kirklees to improve flood resilience	No likely significant effect – working with local communities to increase understanding of flooding will not affect European sites

**Table 7. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Derwent Derbyshire Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0207904065	Continue to work with local communities to increase understanding, preparedness and ownership of flood risk in Derbyshire to reduce the impact of flooding	No likely significant effect – working with local communities to improve understanding will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0201004021	Develop and implement options where feasible for the River Wye in Ashford-in-the-Water and Bakewell to improve management of flood risk for the community	No likely significant effect – these two settlements are 1-3km from the nearest hydrologically sensitive European site (Peak District Dales SAC) and flood risk management measures in these settlements will not affect that European site. Moreover, this measure doesn't commit to any specific schemes and states that options would only be implemented where feasible. Options that would adversely affect European sites would by definition not be feasible.
0207904063	Introduce a real time surface water flood alert system in Derbyshire to provide a greater level of resilience to communities and asset owners	No likely significant effect – introducing a flood alert system will not affect European sites.
0201004028	Between 2021 and 2027, the Environment Agency and Moors for the Future will investigate and implement where feasible Natural Flood Management opportunities across moorlands in The High Peak and Derbyshire Dales to understand the potential impact for flood risk management in downstream Communities at Risk in the Derwent Derbyshire Management Catchment.	No likely significant effect, but down-the-line HRA required – the South Pennine Moors SAC/Peak District Moors SPA lies within the area subject to this measure. However, this measure doesn't commit to any specific schemes and states that options would only be implemented where feasible. Options that would adversely affect European sites would by definition not be feasible and the involvement of Moors for the Future <sup>25</sup> is likely to ensure that the need to preserve and enhance the hydrological function of the moors will be a key consideration. Nonetheless down-the-line HRA will be required before any schemes can be permitted. Depending on the schemes and how they are delivered, it is possible that they could benefit the European sites by retaining water on the moors. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0207904066	Investigate options to develop potential flood risk management scheme in Matlock to reduce flood risk to people, properties and businesses	No likely significant effect, but down-the-line HRA required – Matlock does lie within 1km of Peak District Dales SAC which has hydrologically sensitive components. However, this measure doesn't commit to specific initiatives and there are numerous ways flood risk in Matlock could be managed without affecting European sites. Moreover, this measure is simply a commitment to developing options. Since none are specified down-the-line HRA will be needed before any are consented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

**Table 8. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Derwent Humber Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0288804029	Continue to deliver targeted modelling studies in North Yorkshire to better understand flood risk and identify potential improvements	No likely significant effect – a commitment to continue with modelling studies will not affect European sites.
0288804030	Continue to identify opportunities to improve flood resilience in North Yorkshire to ensure a better prepared and resilient community	No likely significant effect – this measure is simply a general commitment to continue with an ongoing exercise of identifying opportunities for improved flood resilience.
0288804031	Continue to update and refresh the North Yorkshire Flood Risk Strategy in North Yorkshire to ensure understanding and the management of flood risk	No likely significant effect – this measure simply commits to updating the existing North Yorkshire Flood Risk Strategy.



Measure ID	Measure	Likely Significant Effects on European sites
0288804032	Continue to use investigations of sources of flooding collaboratively to inform future capital and revenue programming in North Yorkshire to better understand the local flood risk and develop associated strategies and plans	No likely significant effect – continuing to use investigations to inform capital programming will not affect European sites.
0288804028	Continue to work with the local communities to increase their understanding and preparedness of flooding in North Yorkshire to improve personal, business and community flood resilience	No likely significant effect – working with communities to increase their understanding will not affect European sites
0288804033	Enhance the flood forecasting system, using the latest evidence and modelling in North Yorkshire to improve flood warning quality and community resilience	No likely significant effect – improving flood forecasting will not affect European sites
0288804036	Improve the understanding of catchment wide flood mechanisms and management opportunities in North Yorkshire to ensure that the impact on the whole river system is understood and can be addressed while working with landowners in the upstream areas to provide benefits for those downstream	No likely significant effect – improving understanding of flood mechanisms and management opportunities will not affect European sites
0288804035	Work in partnership with risk management authorities and other organisation to explore flood risk improvement options that also have environment and socio economic benefits in North Yorkshire to ensure solutions are holistic and provide wider benefits	No likely significant effect – exploring flood risk improvement options that also have environmental benefits to ensure solutions are holistic will be positive or neutral for European sites
0288804034	Work with communities, landowners and businesses to inform of the maintenance responsibilities relating to flood risk assets in North Yorkshire to ensure owners are aware of their existing asset responsibilities and the necessary maintenance is clear	No likely significant effect – ensuring landowners are aware of their responsibilities will not affect European sites

**Table 9. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Don and Rother Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0204004031	By 2027, the Environment Agency and Doncaster Metropolitan Borough Council will continue collaborative local and catchment based modelling and assessment to better understand flood and climate risk from rivers and sea in Doncaster to better understand the flood risk in South Yorkshire and the Lower Don catchment to identify potential improvements in the Don and Rother Management Catchment.	No likely significant effect – a commitment to continue modelling will not affect European sites
0204704005	Continue investigations into all sources of flooding in Barnsley to better understand the local flood risk and develop associated plans	No likely significant effect – a commitment to investigate sources of flooding will not affect European sites
0208104033	By 2027, Doncaster Metropolitan Borough Council and the Environment Agency will continue investigations into all sources of flooding in Doncaster to better understand current and future flood risk posed by climate change and develop associated plans to adapt, mitigate and build resilience in the Don and Rother Management Catchment.	No likely significant effect – a commitment to investigate sources of flooding will not affect European sites
0214904002	Continue maintenance and refurbishment of flood risk management assets in Rotherham to reduce the risk of flooding	No likely significant effect – Rotherham is remote from hydrologically sensitive European sites and this is simply an ongoing general commitment to maintaining and refurbishing defences
0204004003	Continue the Dearne Washlands Optimisation Study in Barnsley to better understand the flood risk in South Yorkshire and identify potential improvements	No likely significant effect – a commitment to continue with a study will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204004040	By 2027, Danvm Drainage Commissioners, Black Drain Internal Drainage Board, Dempster Internal Drainage Board, Cowick and Snaith Internal Drainage Board, Reedness & Swinefleet Internal Drainage Board, Rawcliffe Internal Drainage Board and Environment Agency (including Doncaster Metropolitan Borough Council and other risk management authorities such as Yorkshire Water) will continue to work with key stakeholders on the management and operation of assets which provide flood risk and land water level management benefits in Doncaster to reduce the risk of flooding in the Don and Rother Management Catchment.	No likely significant effect – Doncaster is c. 8km from the Humber Estuary SAC/SPA/Ramsar site and upstream of them. However, this measure is simply a general commitment to continue the management and operation of existing assets
0208104032	By 2027, Doncaster Metropolitan Borough Council and the Environment Agency will continue to work with local communities in Doncaster to increase their understanding and preparedness for flooding while also improving the overall personal, business and community resilience to flooding in the Don and Rother Management Catchment.	No likely significant effect – a commitment to work with local communities to aid their understanding of flooding will not affect European sites
0204004004	Continue to work with the local communities to increase their understanding and preparedness of flooding in Barnsley to improve personal, business and community flood resilience	No likely significant effect – a commitment to work with local communities to aid their understanding of flooding will not affect European sites
0204004041	By 2027, Environment Agency and Doncaster Metropolitan Borough Council will ensure planning and development control will take account of all forms of flood risk and minimise development which could increase flood risk in Doncaster to reduce the risk of flooding in the Don and Rother Management Catchment.	No likely significant effect – ensuring flood risk is taken into account in planning decisions and that development which could exacerbate flooding is minimised will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204004039	By 2027, Environment Agency and Doncaster Metropolitan Borough Council will explore flood risk improvement options which are sustainable and contribute to carbon reductions in Doncaster to provide environmental benefits while reducing the risk of flooding in the Don and Rother Management Catchment.	No likely significant effect – a commitment to explore sustainable options over unsustainable ones will not adversely affect European sites and could be of benefit to them. A scheme which adversely affected the integrity of a European site would not be sustainable.
0204104109	Explore the feasibility of delivering a flood alleviation scheme in South Elmsall to reduce the risk of flooding	No likely significant effects – South Elmsall in Wakefield is remote from European sites and this measure is simply a commitment to explore the feasibility of a scheme.
0214904021	Continue to progress the delivery of the proposed flood risk management improvements in Herringthorpe to reduce the risk of flooding	No likely significant effects – Herringthorpe in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904004	Continue to progress the delivery of the proposed flood risk management improvements on A633/A6123 Highways Resilience Works in Parkgate to reduce the risk of flooding	No likely significant effects – Parkgate in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904006	Continue to progress the delivery of the proposed flood risk management improvements on Broom & Clifton Flood Alleviation Scheme in Broom and Clifton to reduce the risk of flooding	No likely significant effects – Broom & Clifton in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904007	Continue to progress the delivery of the proposed flood risk management improvements on Catcliffe Pumping Station in Catcliffe to reduce the risk of flooding	No likely significant effects – Catcliffe in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.

Measure ID	Measure	Likely Significant Effects on European sites
0214904012	Continue to progress the delivery of the proposed flood risk management improvements on Kilnhurst Flood Alleviation Scheme in Kilnhurst to reduce the risk of flooding	No likely significant effects – Kilnhurst in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904003	Continue to progress the delivery of the proposed flood risk management improvements on Parkgate and Rawmarsh Flood Alleviation Scheme in Parkgate to reduce the risk of flooding	No likely significant effects – Parkgate in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904013	Continue to progress the delivery of the proposed flood risk management improvements on Rotherham Culvert Renewal Programme in Rotherham to reduce the risk of flooding	No likely significant effects – Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904005	Continue to progress the delivery of the proposed flood risk management improvements on Rotherham Renaissance Flood Alleviation Scheme in Rotherham to reduce the risk of flooding	No likely significant effects – Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904008	Continue to progress the delivery of the proposed flood risk management improvements on Swinton Flood Alleviation Scheme in Swinton to reduce the risk of flooding	No likely significant effects – Swinton in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0214904009	Continue to progress the delivery of the proposed flood risk management improvements on Todwick Flood Alleviation Scheme in Todwick to reduce the risk of flooding	No likely significant effects – Todwick in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.

Measure ID	Measure	Likely Significant Effects on European sites
0214904010	Continue to progress the delivery of the proposed flood risk management improvements on Whiston Flood Alleviation Scheme in Whiston to reduce the risk of flooding	No likely significant effects – Whiston in Rotherham is remote from European sites and this measure is simply a commitment to continue with an existing scheme that has already been consented.
0204004002	Identify and develop flood risk improvements in Barnsley to reduce the risk of flooding	No likely significant effect – all the urban/significant residential areas of Barnsley are remote from European sites and ultimately this is simply a general commitment to identify and develop some improvements in the borough.
0204004030	By 2027, the Environment Agency and Doncaster Metropolitan Borough Council (including other risk management authorities such as Yorkshire Water) will identify and develop flood risk management improvements in Doncaster to reduce risk of flooding and explore adaptive pathways to increasing risk from climate change in the Borough in the Don and Rother Management Catchment.	No likely significant effect – Doncaster is c. 8km from the Humber Estuary SAC/SPA/Ramsar site and upstream of them. However, this measure is simply a general commitment to identify and develop some improvements in the borough.

Measure ID	Measure	Likely Significant Effects on European sites
0204004034	By 2027, Environment Agency, Doncaster Metropolitan Borough Council and other risk management authorities (including Yorkshire Water) will identify locations for Natural Flood Management/ Nature Based Solutions in the Borough and seek investment to implement these measures in Doncaster to support flood risk management and climate emergency activity in the Borough in the Don and Rother Management Catchment.	No likely significant effect, but down the line HRA required – Doncaster is c. 8km from the Humber Estuary SAC/SPA/Ramsar site and upstream of them. Nature based solutions may have positive or negative effects on hydrologically sensitive sites. However, this measure is too broadly defined at this stage to provide meaningful assessment as well as only being a general commitment to identify locations for nature based solutions and seek funding for them. However, any schemes identified within this measure will require further assessment down the line when further details have been devised. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0288804046	Investigate opportunities to implement solutions for working with nature in Barnsley to reduce the risk of flooding	No likely significant effect – all the urban/significant residential areas of Barnsley are remote from European sites and ultimately this is simply a general commitment to identify some opportunities.
0204004019	Investigate opportunities to implement solutions for working with nature in Rotherham to reduce the risk of flooding	No likely significant effect – Rotherham is remote from European sites and ultimately this is simply a general commitment to identify some opportunities.
0215404102	Investigate opportunities to implement solutions for working with nature in Upper Don to reduce flood risk	No likely significant effect – This measure applies to Sheffield. The western part of the borough does contain a hydrologically sensitive European site (South Pennine Moors SAC) but the SAC is not connected to the River Don and ultimately this is simply a general commitment to identify some opportunities.

Measure ID	Measure	Likely Significant Effects on European sites
0204004103	Investigate potential flood risk improvements through management of reservoirs in Upper Don to reduce flood risk	No likely significant effect – it is understood this measure is related to (for example) identifying opportunities to reduce flood risk by reducing risk of dam and reservoir failures. This will not adversely affect European sites and the measure is simply an investigation with no commitment to implement anything.
0288804016	Investigate, assess and mitigate flood risk from surface water flooding in Sheffield to reduce flood risk	No likely significant effect – The western part of the borough does contain a hydrologically sensitive European site (South Pennine Moors SAC) but this is a rural upland site while the measures to tackle surface water flooding will apply to lower altitude more urban/residential parts of the borough.
0214904018	Investigate, assess and reduce risk of surface water flooding in Rotherham to better understand the flood risk in Rotherham, identify potential improvements and to reduce the risk of flooding	No likely significant effect – Rotherham is remote from European sites and ultimately this is simply a general commitment to identify some opportunities to reduce surface water flooding.
0204004006	Work in partnership with risk management authorities to address flood risk in Lundwood and Low Valley in Barnsley to protect properties, prevent flooding and enhance the environment	No likely significant effect – These areas of Barnsley are remote from European sites and ultimately this is simply a general commitment to address flood risk.
0214904020	Work locally to improve community resilience across the borough in Rotherham	No likely significant effect – Rotherham is remote from European sites and this measure is concerned with community resilience to flooding (i.e. preparedness and reducing the impacts of any flooding that does occur) rather than engineering works are the point of overtopping or flooding.



Measure ID	Measure	Likely Significant Effects on European sites
0204004104	By 2027, the Environment Agency and Sheffield City Council (including City of York Council) will work with the Yorkshire Pathfinder project in Upper Don to reduce flood risk in the Don and Rother Management Catchment.	No likely significant effect – the Yorkshire Property Flood Resilience (PFR) Pathfinder project is an existing initiative that aims to increase the number of properties that effectively use property-level flood resilience (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) to make them less vulnerable to flooding. As such this is a commitment to an existing initiative that poses no risk to European sites.

**Table 10. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Dove Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0203804015	Create/update computer hydraulic models or carry out associated work in accordance with its modelling programme including in Ashbourne and Uttoxeter, and for the Upper Churnet and Rolleston Brook to update the evidence base and inform future work, forecasting and warning	No likely significant effect – producing hydraulic models will not affect European sites
0216504077	Deliver a flood alleviation scheme in Rolleston to reduce flood risk to residential properties	No likely significant effect – Rolleston on Dove is 13km from the nearest hydrologically sensitive European site (River Mease SAC) and as such a FAS at this settlement will not affect European sites. Moreover, it is understood this FAS is already under construction.
0203804039	Expand the flood warning service and engage with communities to encourage sign up in Cheddleton to reduce the impact of flooding	No likely significant effect – expanding flood warning services will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0203804047	Investigate and progress, if viable, flood risk management schemes in Uttoxeter, Marchington, Leek, Ashbourne, and Rolleston (Rolleston Brook) to reduce fluvial flood risk	No likely significant effect – some of these settlements are within 5km of hydrologically sensitive European sites (for example, Ashbourne is 4.5km south of Peak District Dales SAC). However, this is a general commitment to investigate flood risk management schemes and progress them if viable without committing to particular schemes. By definition, a scheme that had adverse effects on European sites would not be viable.
0216504080	Investigate and, if viable, deliver the Village Brook Flood Alleviation Scheme in Endon, Staffordshire to reduce flood risk to residential properties	No likely significant effect – Endon is remote from the European sites and as such a FAS at this settlement will not affect European sites. Moreover, it is understood this FAS is already under construction.
0207904086	Investigate, and if viable implement, measures in Scropton, South Derbyshire to reduce surface water flood risk to properties and roads	No likely significant effect – Scropton is 15km from the nearest European site. Moreover, this is a general commitment to investigate flood risk management schemes and progress them if viable without committing to particular schemes. By definition, a scheme that had adverse effects on European sites would not be viable.

**Table 11. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Esk and Coast Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
No measures found		

**Table 12. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Hull and East Riding Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0208504048	Continue investigations into all sources of flooding in East Riding to better understand the local flood risk and develop or update associated plans and strategies	No likely significant effect – undertaking studies to understand local flood risk and enable updates to Local Flood Risk Management Plans will not affect European sites.
0204304123	By 2027, the Environment Agency and Hull City Council will continue modelling, research and investigations to improve flood risk understanding and capital investment needs in Hull to increase flood risk understanding in the Hull and East Riding Management Catchment.	No likely significant effect – continuing modelling and investigations will not affect European sites
0204304045	Continue to deliver modelling studies and monitoring programmes to better understand the flood risk in East Riding to help identify potential improvements and enhance preparedness for flood events	No likely significant effect – continuing modelling and investigations will not affect European sites
0204304122	By 2027, the Environment Agency and Hull City Council will continue to improve and expand flood warning service in Hull to Improve the flood warning service in the Hull and East Riding Management Catchment.	No likely significant effect – continuing to improve flood warning services will not affect European sites
0204304132	Continue to review maintenance procedures for existing assets in Hull to improve community flood	No likely significant effect – continuing to review maintenance procedures will not affect European sites
0204304047	Continue to work with the local communities to increase their understanding and preparedness of flooding in East Riding to improve personal, business and community flood resilience	No likely significant effect – working to increase communities understanding of flood risk will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204304044	Determine the level of maintenance required for local flood risk assets and create a risk based maintenance plan in East Riding to ensure that flood defence assets are maintained to a good standard to manage flood risk	No likely significant effect – determining levels of required maintenance will not affect European sites
0204304043	Enhance the flood forecasting system, using the latest evidence and modelling in East Riding to improve flood warning quality and community resilience	No likely significant effect – enhancing the flood forecasting system will not affect European sites
0204304046	Explore integrated solutions to deliver multiple (including environmental and economic) benefits in East Riding to reduce flood risk whilst enhancing economic, social and environmental benefits	No likely significant effect – exploring flood risk solutions that also have environmental benefits to ensure solutions are holistic will be positive or neutral for European sites
0204304128	By 2027, the Environment Agency and Hull City Council will explore options for flood risk improvement schemes in Hull to decrease flood risk in the Hull and East Riding Management Catchment.	No likely significant effect, but down-the-line HRA required – Hull is adjacent to the Humber Estuary SAC/SPA/Ramsar sites and flood risk improvement schemes could potentially affect that site. However, this measure is simply a commitment to explore options and therefore does not commit to any specific schemes. Once schemes are identified they will need to be subject to down-the-line HRA before they are consented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0204304125	By 2027, Living with Water Partnership (Environment Agency, East Riding of Yorkshire Council, Yorkshire Water and Hull City Council) will improve community engagement and communication between organisations by sharing knowledge, best practice and information in Hull to increase community flood resilience in the Hull and East Riding Management Catchment.	No likely significant effect – working to increase communities engagement and knowledge of flood resilience will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0210804127	By 2027, Hull City Council and the Environment Agency will incorporate flood risk management into policy planning (Strategic flood risk assessment that guides people, builders and developers) in Hull to decrease flood risk in new developments in the Hull and East Riding Management Catchment.	No likely significant effect – a commitment to influence Local Plan policy and site allocations to minimise flood risk in new developments will not affect European sites
0204304042	By 2027, the Environment Agency and East Riding of Yorkshire Council (Including Yorkshire Water) will work in collaboration with key partners to progress and develop options to manage flood risk and adapt to climate change in East Riding to reduce flood risk in the Hull and East Riding Management Catchment.	No likely significant effect – the East Riding of Yorkshire contains numerous hydrologically sensitive European sites, particularly near the coast. However, this is simply a commitment to work collaboratively to develop options for flood risk management and adaptation.
0204304130	Work in partnership with risk management authorities and other organisation to explore flood risk improvement options that also have environment and socio economic benefits in Hull to decrease flood risk	No likely significant effect – Hull is adjacent to the Humber Estuary SAC/SPA/Ramsar site. However, this is simply a commitment to work collaboratively to develop options for flood risk management and adaptation that also have environmental benefits and therefore could be positive for the Humber Estuary European sites.
0204304129	Work with Humber Local Resilience Forum to continue to manage and improve Emergency Plans and implementation through training and exercises in Hull to improve the effectiveness of category 1 and 2 responders in a flood	No likely significant effect – a commitment to manage and improve Emergency Plans will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0204304124	By 2027, Living with Water Partnership (Environment Agency, East Riding of Yorkshire Council, Yorkshire Water and Hull City Council) will work with Yorkshire Pathfinder project and continue to implement Living With Water Interventions in Hull to increase the effective uptake of Property Flood Resilience in the Hull and East Riding Management Catchment.	<p>No likely significant effect – flood resilience measures occur at the place susceptible to flooding rather than at the river or hydrologically sensitive European site and as such this measure will not affect the Humber Estuary SAC/SPA/Ramsar site.</p> <p>The Yorkshire Property Flood Resilience (PFR) Pathfinder project is an existing initiative that aims to increase the number of properties that effectively use property-level flood resilience (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) to make them less vulnerable to flooding. As such this is a commitment to an existing initiative that poses no risk to European sites.</p>

**Table 13. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Humber TraC Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0202104027	Continue to monitor and review hydrological, ecological and geomorphological processes and share lessons learned in Donna Nook Managed Realignment, to assess the performance of the managed re-alignment of flood defences	No likely significant effect – This measure refers to an ongoing project for 20 years of monitoring that was accompanied by an HRA. Essentially, the Humber Strategy 2008 had an HRA showing environmental impacts, Donna Nook was one of the projects delivered to compensate for losses identified, and the benefits are to be monitored and reported back as part of that process. This measure does not commit to any specific monitoring activities, so if there are any that would negatively affect European sites it is sufficiently broadly expressed that alternative monitoring methods could be implemented.

Measure ID	Measure	Likely Significant Effects on European sites
0202104021	Develop and complete the Barton to New Holland tidal flood alleviation scheme, taking an adaptive approach in the South Humber Estuary to provide appropriate flood protection and resilience to communities in line with predicted sea level rise.	<p>No likely significant effect – this scheme could affect sensitive European sites given the proximity of the Humber Estuary SAC/SPA/Ramsar site. However, this scheme is not new to the FRMP but effectively exists to implement the Humber Coastal Strategy for this area and had its own HRA. This confirmed any mitigation needed to avoid adverse effects on the integrity of European sites at a strategic level.</p> <p>Since the scheme is in its early stages and no options or preferred option has been identified it would not be possible to undertake appropriate assessment without it being a hypothetical assessment, which would be contrary to case law, since the specific effects that may (or may not) arise depend entirely on details that do not yet exist and decisions that have not yet been made. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP and coastal strategy and there will therefore be no likely significant effect from including it in the FRMP. The specific scheme will be subject to its own HRAs before it is consented.</p>

**Table 14. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Idle and Torne Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0201104010	Between 2021 and 2027, the Environment Agency and Internal Drainage Boards and Lead Local Flood Authorities (Doncaster Metropolitan Borough Council, North Lincolnshire Council, Nottinghamshire County Council and Lincolnshire County Council) will continue to work together using a catchment based approach under the Defra approved Isle of Axholme Flood Risk Management Strategy in Nottinghamshire, North Lincolnshire and Doncaster District to identify opportunities for delivering projects with wider sustainable benefits in the Idle and Torne Management Catchment.	No likely significant effect – this measure is concerned with implementing an existing Flood Risk Management Strategy that took into account any impacts on European sites in its development and is about ensuring that in implementing the FRMS opportunities are taken to prioritise projects with wider sustainable benefits. This could benefit downstream European sites, notably the Humber Estuary SAC/SPA/Ramsar.
0288804017	Deliver a range of blue-green infrastructure interventions in Mansfield to manage surface water and mitigate against climate change, as part of the Green Recovery initiative, in the Idle and Torne Management Catchment	No likely significant effect – Mansfield is remote from hydrologically sensitive European sites and this measure is environmentally positive in that it is specifically concerned with delivering blue and green infrastructure.
0214904015	By 2027, Rotherham Metropolitan Borough Council and the Environment Agency will deliver the proposed flood risk management improvements on Bramley Brook FAS in Bramley to reduce the risk of flooding in the Idle and Torne Management Catchment.	No likely significant effect – this measure concerns the continued implementation of an existing scheme. Moreover, Bramley in Rotherham is remote from hydrologically sensitive European sites.
0214904016	By 2027, Rotherham Metropolitan Borough Council and the Environment Agency will deliver the proposed flood risk management improvements on Brookhouse Dike FAS in Brookhouse to reduce the risk of flooding in the Idle and Torne Management Catchment.	No likely significant effect – this measure concerns the continued implementation of an existing scheme. Moreover, Brookhouse in Rotherham is remote from hydrologically sensitive European sites.



Measure ID	Measure	Likely Significant Effects on European sites
0214904011	By 2027, Rotherham Metropolitan Borough Council and the Environment Agency will deliver the proposed flood risk management improvements on Eel Mires Dike FAS in Loughton Common to reduce the risk of flooding in the Idle and Torne Management Catchment.	No likely significant effect – this measure concerns the continued implementation of an existing scheme. Moreover, Loughton Common in Rotherham is remote from hydrologically sensitive European sites.
0214904014	By 2027, Rotherham Metropolitan Borough Council and the Environment Agency will deliver the proposed flood risk management improvements on Maltby Surface Water FAS in Maltby to reduce the risk of flooding in the Idle and Torne Management Catchment.	No likely significant effect – this measure concerns the continued implementation of an existing scheme. Moreover, Maltby in Rotherham is remote from hydrologically sensitive European sites.
0214904017	Continue to progress the delivery of the proposed flood risk management improvements on Woodsetts Flood Alleviation Scheme in Woodsetts to reduce the risk of flooding	No likely significant effect – this measure concerns the continued implementation of an existing scheme. Moreover, Woodsetts in Rotherham is remote from hydrologically sensitive European sites.
0201104015	Between 2021 and 2027, the Environment Agency will investigate a scheme to manage water levels in the Lower Idle in line with the Isle of Axholme Strategy in West Stockwith to reduce flood risk and provide social, economic, and environmental enhancements in the Idle and Torne Management Catchment.	No likely significant effect – West Stockwith in Nottinghamshire is remote from hydrologically sensitive European sites.
0201104019	Investigate options around the Retford Beck to manage flood risk in Retford to reduce the impacts of flooding and provide social, economic, and environmental enhancements	No likely significant effect – Retford in Nottinghamshire is remote from hydrologically sensitive European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0201104005	Between 2021 and 2027, the Environment Agency and Nottinghamshire County Council, and Bassetlaw District Council will investigate options that focus on a masterplan for flood risk in Worksop and Shireoaks to reduce flood risk and provide social, economic, and environmental enhancements in the Ryton area in the Idle and Torne Management Catchment.	No likely significant effect – Ryton in Nottinghamshire are remote from hydrologically sensitive European sites.

**Table 15. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Louth Grimsby and Ancholme Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0202104026	Continue to progress the current programme of coastal monitoring in the Lincolnshire Coast Area to provide an updated evidence base that can be used to progress flood management scheme options	No likely significant effect – progressing monitoring will not affect European sites
0202104024	Identify and prioritise specific communities at flood risk in the Management Catchment, to encourage sign up to the full flood warning service, and improve awareness of how to be prepared for flooding	No likely significant effect – identifying communities at flood risk will not affect European sites
0202104023	Look for opportunities to install a series of river level monitoring sites on rivers in the Grimsby, Louth and Ancholme Management Catchment, to improve understanding of how these rivers respond to rainfall events which will allow continuous improvement to the fluvial flood warning areas	No likely significant effect – identifying and installing river level monitoring sites will not negatively affect European sites
0202104022	Progress partnership work in Barrow Upon Humber and Barton Upon Humber to extend and improve the groundwater flood warning service	No likely significant effect – improving a flood warning service will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0202104025	Undertake a programme of works to review and update the topographical data used by the gauging network in the Grimsby, Louth and Ancholme catchment to improve flood warning and flood forecasting capabilities	No likely significant effect – updating topographical data will not affect European sites
0202104028	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in the Louth, Grimsby and Ancholme catchment to ensure updates are in line with current guidance to reduce the consequences of flooding, by enabling communities to take effective action before, during and after a flood, and by minimising flood risk to critical local infrastructure	No likely significant effects – improving command and control structures will not affect European sites

**Table 16. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Soar Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0201004034	Identify and investigate new opportunities for natural flood management in Leicestershire to manage flood risk and create environmental benefits	No likely significant effect – exploring flood risk solutions that also have environmental benefits to ensure solutions are holistic will be positive or neutral for European sites. The River Mease SAC lies in the west of Leicestershire county but natural flood management is likely to benefit this site by restoring a natural flow regime.
0201004046	Undertake risk investigation and consider the use of nature based solutions where feasible in Sileby to manage flood risk and create environmental benefits	No likely significant effect – Nature based solutions may have a positive or negative affect on hydrologically sensitive European sites, however, Sileby is remote from hydrologically sensitive European sites (24km from the River Mease SAC and not hydrologically connected).

Measure ID	Measure	Likely Significant Effects on European sites
0201004033	Undertake risk investigation and consider the use of nature based solutions where feasible in Syston to manage flood risk and create environmental benefits	No likely significant effect – Nature based solutions may have a positive or negative affect on hydrologically sensitive European sites, however, Syston is remote from hydrologically sensitive European sites (25km from the River Mease SAC and not hydrologically connected).
0211604060	Update and implement the Local Flood Risk Management Strategy in Leicestershire to enable the Council to better coordinate the management of local flood risk	No likely significant effect – this is simply a commitment to update the existing LFRMS
0201004037	Between 2021 and 2027, the Environment Agency and Leicestershire County Council will work collaboratively to investigate and develop feasible options, and continue to support the established flood warden scheme in Whitwick to manage flood risk and create environmental benefits and enable communities to respond to flood events in the Soar Management Catchment.	No likely significant effect – supporting an established flood warden scheme will not affect European sites

**Table 17. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Swale, Ure, Nidd and Ouse Upper Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0204404120	Continue investigations/modelling into all sources of flooding working with stakeholder partners in York District to increase knowledge of local flood risk	No likely significant effect – continuing investigations and modelling will not affect European sites
0204404090	Continue to deliver targeted modelling studies in North Yorkshire to better understand flood risk and identify potential improvements	No likely significant effect – continuing modelling will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204404092	Continue to identify opportunities to improve flood resilience in North Yorkshire to ensure a better prepared and resilient community	No likely significant effect - there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.
0204404121	Continue to review and manage maintenance options and programme of works in York District to maintain flood risk assets	No likely significant effect – continuing to review and manage maintenance options will not affect European sites as it is a desk based activity
0213304094	Continue to update and refresh the North Yorkshire Flood Risk Strategy in North Yorkshire to ensure understanding and the management of flood risk	No likely significant effect – this is simply a commitment to update the existing Flood Risk Strategy
0213304089	Continue to use investigations of sources of flooding collaboratively to inform future capital and revenue programming in North Yorkshire to better understand the local flood risk and develop associated strategies and plans	No likely significant effect – this is simply a commitment to use investigations to inform future capital and revenue programming, which will not affect European sites
0204404119	Continue to work with local communities to increase their understanding, preparedness and ownership of their own flood risk in York District to work with the local transient community to reduce flood risk	No likely significant effect – working with local communities to improve their understanding and engagement will not affect European sites
0204404088	Continue to work with the local communities to increase their understanding and preparedness of flooding in North Yorkshire to improve personal, business and community flood resilience	No likely significant effect – working with local communities to improve their understanding and engagement will not affect European sites
0204404091	Enhance the flood forecasting system, using the latest evidence and modelling in North Yorkshire to improve flood warning quality and community resilience	No likely significant effect – enhancing flood forecasting systems will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0219604118	By 2027, City of York Council and the Environment Agency will explore options for managing surface water flood risk through the development of a sustainable drainage systems strategy/guidance in York District to better manage surface water flood risk in the Swale, Ure, Nidd and Upper Ouse Management Catchment.	No likely significant effect – developing SUDS guidance will not affect European sites
0204404096	Improve the understanding of catchment wide flood mechanisms and management opportunities in North Yorkshire to ensure that the impact on the whole river system is understood and can be addressed while working with landowners in the upstream areas to provide benefits for those downstream	No likely significant effect – understanding flood mechanisms and opportunities will not affect European sites
0204404117	Investigate and deliver working with nature initiatives as part of wider flood risk management works in York District to reduce flood risk by implementing Natural Flood Management measures	No likely significant effect, but down-the-line HRA required – York District contains River Derwent SAC and Lower Derwent Valley SPA/Ramsar both of which are hydrologically sensitive. However, by definition, delivering working with nature initiatives should be positive (or at worst neutral) for European sites. Given the proximity of sensitive European sites, down-the-line HRA will be required before any schemes are consented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0204404116	Investigate opportunities to utilise innovation and digital technologies in flood risk management, planning and resilience in York District to trial innovative methods to more efficiently reduce flood risk	No likely significant effect – a commitment to utilising innovation and digital technologies will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0204404115	Investigate options for Social, Economic and Environmental Benefits as part of flood risk management works in York District to develop and deliver projects to reduce flood risk whilst delivering a range of wider benefits	No likely significant effect – a commitment to investigate options for social, economic and environmental gain will not affect European sites
0204404113	Investigate options for flood risk management scheme on the River Foss in York District to develop and deliver projects to reduce flood risk	No likely significant effect, but down-the-line HRA required – the River Foss ultimately drains into the Humber Estuary European sites but a flood risk management scheme at the Foss in York will not affect European sites. Nonetheless, since a connection exists, down-the-line HRA is advised once a scheme is devised. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0204404095	Work in partnership with risk management authorities and other organisation to explore flood risk improvement options that also have environment and socio economic benefits in North Yorkshire to ensure solutions are holistic and provide wider benefits	No likely significant effect – exploring flood risk improvement options that also have environmental benefits to ensure solutions are holistic will be positive or neutral for European sites
0213304093	Work with communities, landowners and businesses to inform of the maintenance responsibilities relating to flood risk assets in North Yorkshire to ensure owners are aware of their existing asset responsibilities and the necessary maintenance is clear	No likely significant effect – ensuring landowners are aware of their responsibilities will not affect European sites

**Table 18. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Tame, Anker and Mease Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0218504053	Carry out a community capacity building programme to support communities to be more prepared for flooding and encourage local action in Warwickshire to increase community resilience	No likely significant effect – a community capacity building programme will not affect European sites
0203804018	Carry out an Asset Review and Modelling Study in the River Tame catchment to inform future flood risk management	No likely significant effect – an asset review and modelling study will not affect European sites
0203804017	Create/update computer hydraulic models or carry out associated work in accordance with its modelling programme including in Willenhall & Darlaston, Bloxwich and for River Cole, River Rea and Alder Brook to update the evidence base and inform future work	No likely significant effect – updating hydraulic models will not affect European sites
0216504078	Deliver a flood alleviation scheme in Barton-under-Needwood (Knoll Brook) to reduce flood risk to residential properties	No likely significant effect, but down-the-line HRA required – Barton Under Needwood is 2.8km north-west of the River Mease SAC on the opposite side of the A38. There is no reason to believe that a FAS at Barton under Needwood would adversely affect the River Mease SAC but an HRA will be required (and would in any event be required by law before consent could be granted) once the scheme is fully devised. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.



Measure ID	Measure	Likely Significant Effects on European sites
0218504055	Deliver a programme of Property Flood Resilience (PFR) schemes in high risk areas, and where possible natural flood management schemes in Warwickshire to reduce the consequences of flooding	No likely significant effect - there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites. Natural flood management schemes could be beneficial for European sites, such as through restoring natural flow and flood regimes.
0203804041	Engage with communities at risk of rapid onset flooding to raise awareness and increase their preparedness, including what they can do themselves, in the Upper River Rea and River Cole catchments, including Bourn Brook and Stonehouse Brook, to reduce the impact of flooding	No likely significant effect – engaging with communities to raise awareness will not affect European sites
0203804040	Expand the flood warning service and engage with communities to encourage sign up in Walsall, Sutton Coldfield and Ashby-de-la-Zouche to reduce the impact of flooding	No likely significant effect – expanding flood warning services will not affect European sites
0215204090	Install Property Level Resilience (PLR) measures in Titford Road, Beauty Bank, Aston Road and Halesowen Street in Sandwell to better protect properties that are at risk from surface water and/or fluvial sources of flooding	No likely significant effect - there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites. Natural flood management schemes could be beneficial for European sites, such as through restoring natural flow and flood regimes.
0215204091	Install natural flood management measures in Mousesweet Brook and Thimble Mill Brook, Sandwell to better protect properties that are at risk from surface water and/or fluvial sources of flooding	No likely significant effect – Fen Pools SAC is c. 3km west of Sandwell but is not connected to Mousesweet Brook or Thimble Mill Brook.

Measure ID	Measure	Likely Significant Effects on European sites
0203804049	By 2027, the Environment Agency will investigate and progress, if viable, flood risk management schemes in Barton-under-Needwood (Barton Brook), Sheepy Magna, Solihull, Walsall, Willenhall, Witherley, Shenton, Tipton, Smethwick (Thimblemill Brook), West Bromwich (Hobnail Brook) and Bloxwich to reduce flood risk in the Tame Anker and Mease Management Catchment.	No likely significant effect, but down-the-line HRA required – Barton Under Needwood is 2.8km north-west of the River Mease SAC on the opposite side of the A38. There is no reason to believe that flood risk management schemes at Barton under Needwood would adversely affect the River Mease SAC. The other mentioned settlements are all relatively remote from European sites and the measure does not commit to any specific initiatives and specifically states that they cannot be progressed if inviable. Any scheme that adversely affects a European site would be effectively inviable. An HRA will be required (and would in any event be required by law before consent could be granted) once the scheme is fully devised. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0218504054	Investigate and trial a surface water flood warning system to help the Council and communities to take a more proactive approach during times of flood in Warwickshire to reduce the consequences of flooding	No likely significant effect – a surface water flood warning system will not affect European sites
0215704092	By 2027, Solihull Metropolitan Borough Council will deliver a flood risk management scheme in Cheswick Green and Dickens Heath, Solihull to better protect properties that are at risk from fluvial sources of flooding in the Tame Anker and Mease Management Catchment.	No likely significant effect – Solihull is remote from European sites. As such upstream storage at Solihull will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804029	Support a partnership approach to investigating and delivering nature based solutions, including natural flood management, in the Mease catchment to provide multiple benefits including reducing flood risk, improving water quality, enhancing biodiversity value and better land management	No likely significant effect, but down-the-line HRA required – the River Mease SAC is known to be affected by inappropriate flows and water levels and Natural England and the Environment Agency are seeking to restore natural flows to the watercourse, such as by diverting flows from Packington Wastewater Treatment Works out of the SAC. Natural flood management should be beneficial for the SAC and this measure is with regard to undertaking a partnership approach to identifying opportunities, rather than committing to particular initiatives. However, given the river is an SAC, down-the-line HRA will be required before any schemes that derive from implementation of this measure are consented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0218504052	Undertake a review of the current high risk priority areas including considering climate change in Warwickshire to help prioritise future local flood risk management approaches	No likely significant effect – undertaking a review of risk to prioritise areas for intervention will not affect European sites
0218504051	Update the existing Local Flood Risk Management Strategy to take into account the new National Strategy and improved flooding records in Warwickshire to manage local flood risk	No likely significant effect – this is simply a commitment to update an existing LFRMS
0216504085	Work with other risk management authorities to undertake a study to review flood risk and identify resilience measures in Stonnall to inform future flood risk management	No likely significant effect – a commitment to working collaboratively to review flood risk and identify resilience measures (to be implemented at areas at risk of flooding to reduce the impact of such flooding) will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0218504050	Deliver a flood alleviation scheme in Nuneaton to reduce the flood risk in the town and allow further redevelopment	No likely significant effect – there is a single European site hydraulically connected to Nuneaton. Ensor’s Pool SAC is located south-west of Nuneaton and is groundwater fed. According to tracing studies undertaken by the Environment Agency it has a 3km groundwater catchment. Implementing a flood alleviation scheme at Nuneaton would not affect groundwater flows to the SAC.
0203804032	Identify and deliver natural flood management measures and river restoration in the River Anker catchment around Nuneaton to improve flood resilience in Nuneaton (Cleaver Gardens) and benefit the environment	No likely significant effect – there is a single European site hydraulically connected to Nuneaton. Ensor’s Pool SAC is located south-west of Nuneaton and is groundwater fed. According to tracing studies undertaken by the Environment Agency it has a 3km groundwater catchment. Implementing natural flood management and river restoration at Nuneaton would not affect groundwater flows to the SAC.

**Table 19. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Trent Lower and Erewash Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0201104011	Between 2021 and 2027, the Environment Agency and Internal Drainage Boards will continue to work together using a catchment based approach in Nottinghamshire, Lincolnshire, Derbyshire and Leicestershire to identify opportunities for delivering projects with wider sustainable benefits in the Lower Trent and Erewash Management Catchment.	No likely significant effect – this is a general commitment to work together to identify opportunities and therefore will not affect European sites
0213704050	Deliver and complete a Flood Alleviation Scheme in Southwell to reduce flood risk	No likely significant effect – Southwell is remote from European sites and therefore a FAS will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0213704051	Deliver and complete the Hucknall Titchfield Park Flood Alleviation Scheme in Hucknall to reduce flood risk	No likely significant effect – Hucknall is remote from hydrologically sensitive European sites and therefore a FAS will not affect European sites
0203804103	By 2027, Severn Trent Water and Derbyshire County Council and South Derbyshire District Council will develop options and undertake a detailed options appraisal for a flood alleviation scheme in Ilkeston to reduce flood risk to people, properties and businesses in the Lower Trent and Erewash Management Catchment.	No likely significant effect – Ilkeston is remote from European sites and therefore a FAS will not affect European sites
0201104020	Between 2021 and 2027, the Environment Agency will investigate risks and potential interventions for the Right and Left banks of the Tidal River Trent in line with the Humber 2100+ Strategy in Nottinghamshire, Lincolnshire and North Lincolnshire to identify feasible options to reduce the impacts of flooding in the Lower Trent and Erewash Management Catchment.	No likely significant effect, but down-the-line HRA required – the tidal River Trent in Lincolnshire is part of the Humber Estuary SAC/SPA/Ramsar site. However, this measure is a commitment to investigating (rather than delivering) interventions and to identify feasible options. Those that would adversely affect the Humber Estuary European sites would not be viable. Any schemes in Lincolnshire will need to consider potential implications for the Humber Estuary European sites before being consented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0213704057	Produce a hydraulic modelling study and supply high level flood risk optioneering in West Bridgford to examine options to improve protection and reduce flood risk to homes	No likely significant effect – West Bridgford is remote from hydrologically sensitive European sites and this measure is only a commitment to supply high-level risk optioneering.

Measure ID	Measure	Likely Significant Effects on European sites
0201104016	Between 2021 and 2027, the Environment Agency will review the Tidal Trent hydraulic model based on the outputs of the Humber Strategy in Nottinghamshire, North Lincolnshire and Lincolnshire to ensure an integrated approach to flood risk management in the Lower Trent and Erewash Management Catchment.	No likely significant effect – Reviewing a hydraulic model will not affect European sites
0203804102	By 2025, Severn Trent Water and Derbyshire County Council and South Derbyshire District Council will undertake a detailed options appraisal, and if viable, deliver a flood alleviation scheme in Melbourne to reduce flood risk to people, properties and businesses in the Lower Trent and Erewash Management Catchment.	No likely significant effect – Melbourne is remote from European sites and therefore a FAS will not affect European sites
0201104018	By 2027, the Environment Agency will work with the Trent Gateway Partnership to assess current assets in Derbyshire and Nottinghamshire to produce a report that identifies opportunities for floodplain re-connection, Natural Flood Management opportunities and enhance biodiversity in the Lower Trent and Erewash Management Catchment.	No likely significant effect – this is an environmentally positive measure that could benefit European sites

**Table 20. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Trent Valley Staffordshire Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0203804016	Create/update computer hydraulic models or carry out associated work in accordance with its modelling programme including in Newcastle under Lyme, Stafford, Cannock and for the Upper Trent Tributaries to update the evidence base and inform future work, forecasting and warning	No likely significant effect – updating hydraulic models will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0216504079	By 2024, Staffordshire County Council and Severn Trent Water will deliver a flood alleviation scheme in Cheslyn Hay (Sutherland Road) to reduce flood risk to residential properties in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – Cheslyn Hay is remote from hydrologically sensitive European sites, or not connected to them. Cannock Extension Canal SAC is within 3km of the settlement but a FAS at Cheslyn Hay would present no hydraulic connection
0216804064	Between 2021 and 2027, Stoke-on-Trent City Council will deliver a viable capital programme of flood alleviation schemes in Stoke-on-Trent to reduce flood risk to properties in areas in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – Stoke-on-Trent is remote from hydrologically sensitive European sites
0216804065	Engage with communities in hotspot areas to support scheme delivery, investigations, and improve community resilience in Stoke-on-Trent to reduce flood risk	No likely significant effect – Stoke-on-Trent is remote from hydrologically sensitive European sites
0203804038	Expand the flood warning service and engage with communities to encourage sign up in Newcastle-under-Lyme and Great Wyrley to reduce the impact of flooding	No likely significant effect – expanding a flood warning service will not affect European sites
0216804063	Between 2021 and 2027, Stoke-on-Trent City Council and the Environment Agency and other partners will form next generation strategic working partnerships to attract funding and deliver projects in Stoke-on-Trent to reduce flood risk and improve green spaces in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – Stoke-on-Trent is remote from hydrologically sensitive European sites
0216504082	Between 2021 and 2027, Staffordshire County Council and Severn Trent Water will install community protection measures in Great Wyrley, Staffordshire to reduce flood risk to residential and commercial properties in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – community protection measures will not affect European sites as these are concerned with property resilience rather than introducing defences at the source of flooding

Measure ID	Measure	Likely Significant Effects on European sites
0203804048	Investigate and progress, if viable, flood risk management schemes in Stafford (River Sow, Rising Brook, Kingston Brook and Sandyford Brook), Rugeley (Rising Brook and Moreton Brook), Newcastle-under-Lyme, Weston, Norton Green and Stone to reduce flood risk	No likely significant effect – Rugeley is within 3km of Cannock Chase SAC which is partly designated for wet heath but no hydrological connection exists between the SAC and flood risk management in the settlement. All the other settlements are relatively remote from European sites and the measure specifically identifies that any schemes that derive from the study would only be implemented if viable, which would not be the case if the integrity of European sites was affected.
0216504075	Investigate and, if viable, deliver the Brown Edge Flood Alleviation Scheme in Brown Edge, Staffordshire to reduce flood risk to residential properties	No likely significant effect – Brown Edge is remote from European sites and a FAS will therefore pose no risk of any effect.
0216504083	Between 2021 and 2027, Staffordshire County Council and Severn Trent Water and the Environment Agency will investigate and if viable deliver the Great Wyrley Joint Flood Resilience Scheme in Great Wyrley & Cheslyn Hay to reduce flood risk to residential and commercial properties in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – Cheslyn Hay and Great Wyrley are remote from hydrologically sensitive European sites, or not connected to them. Cannock Extension Canal SAC is within 3km of the settlements but a FAS would present no hydraulic connection
0216504076	Investigate and, if viable, deliver the Perton Flood Alleviation Scheme in Perton, Staffordshire to reduce flood risk to residential properties	No likely significant effect – Perton is remote from European sites and a FAS will therefore pose no risk of any effect.
0216804060	By 2024, Stoke-on-Trent City Council will produce and publish a Local Flood Risk Management Strategy that sets out partnership working in Stoke-on-Trent to manage flood risk in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – this measure is purely a commitment to produce a LFRMS



Measure ID	Measure	Likely Significant Effects on European sites
0203804025	Between 2021 and 2027, the Environment Agency and Severn Trent Water and Stoke-on-Trent City Council will work together to explore opportunities for sustainable drainage systems schemes in Stoke on Trent to improve flood resilience and benefit the environment in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – delivering SUDS schemes are likely to be environmentally positive and Stoke-on-Trent is remote from hydrologically sensitive European sites.
0203804031	Work with ENGIE and Staffordshire Wildlife Trust to incorporate river restoration and blue/green infrastructure in development of former power station in Rugeley to improve flood resilience and benefit the environment	No likely significant effect – Rugeley is within 3km of Cannock Chase SAC which is partly designated for wet heath but no hydrological connection exists between the SAC and flood risk management in the settlement. All the other settlements are relatively remote from European sites and the measure specifically identifies that any schemes that derive from the study would only be implemented if viable, which would not be the case if the integrity of European sites was affected.
0203804021	Work with Staffordshire County Council and partners to identify and deliver natural flood management, river restoration and other climate resilient measures (tree planting) in Staffordshire to improve flood resilience and benefit the environment	No likely significant effect, but down-the-line HRA required – in general this broad commitment will be positive for the environment and potentially for European sites. The River Mease SAC is known to be suffering from adverse water flows and this measure could assist in addressing that situation, depending on where it is implemented. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0216504084	Work with other risk management authorities to undertake studies to review flood risk and identify resilience measures in Codsall and Norton Canes to inform future flood risk management	No likely significant effect – Cannock Extension Canal SAC is within 3km of Norton Canes but property level resilience measures would present no hydraulic connection

Measure ID	Measure	Likely Significant Effects on European sites
0216804061	Between 2021 and 2027, Stoke-on-Trent City Council will work with partners to produce catchment management plans in Baddeley, Milton and Norton Wards and Great Chell and Packmoor Wards to manage flood risk across authority boundaries in the Trent Valley Staffordshire Management Catchment.	No likely significant effect – Stoke-on-Trent is remote from hydrologically sensitive European sites
0216804062	Work with partners to publish and deliver the short-medium term actions in the Stoke-on-Trent Surface Water Management Plan in Stoke-on-Trent to manage flood risk	No likely significant effect – Stoke-on-Trent is remote from hydrologically sensitive European sites
0203804405	Between 2021 and 2027, Sow & Penk Internal Drainage Board will work in partnership with other risk management authorities and environmental non-government organisations to explore integrated solutions in the Sow & Penk Internal Drainage Board Area to deliver multiple benefits in the Trent Valley Staffordshire Management Catchment.	No likely significant effect but down the line HRA – the measure is regarding exploring integrated solutions rather than any on the ground works. Any delivery on the ground of these solutions would be required to undertake an HRA down the line to comply with legislation

**Table 21. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Wharfe and Ouse Lower Management Catchment**

Measure ID	Measure	Likely Significant Effects on European sites
0288804005	Continue investigations into all sources of flooding in Bradford District to better understand the local flood risk and develop associated plans	No likely significant effect – Investigating sources of flooding will not affect European sites
0288804023	Continue to work with the local communities to increase their understanding and preparedness of flooding in Bradford District to improve personal, business and community flood resilience	No likely significant effect – working with local communities to increase their understanding will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0288804025	Deliver Natural Flood Management as part of wider flood alleviation schemes in Bradford District to deliver multiple benefits including environment, economic, social and wellbeing improvements	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to include natural flood management in flood alleviation schemes wherever opportunities arise and ensure they deliver environmental benefits.
0288804027	Explore environmental options within future capital schemes in Bradford District to enhance the environment whilst also reducing flood risk	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to explore opportunities to enhance the environment in flood alleviation schemes wherever opportunities arise.
0288804026	Explore integrated solutions to deliver multiple benefits in Bradford District to reduce flood risk whilst enhancing economic, social and environmental benefits	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to explore opportunities to enhance the environment in flood alleviation schemes wherever opportunities arise.
0211404085	Identify and develop flood risk management measures and improvements to the River Wharfe in Leeds to reduce flood risk	No likely significant effects – there are no European sites within or close to Leeds that would be affected by flood management in that authority (the Humber Estuary European sites are 27km distant). Moreover, this measure is simply a general commitment to identify and develop a package of measures at the River Wharfe.
0204204010	Work in collaboration with key partners to progress and develop options on the River Wharfe in Bradford District to reduce flood risk	No likely significant effect – there are no European sites in or around Bradford that would be affected by measures to address flooding in that district given that the European sites are at a higher elevation. Moreover, this measure is simply a general commitment to identify and develop a package of measures at the River Wharfe.

**Table 22. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Beeston (Broxtowe) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104007	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences in Beeston to inform future flood risk management in the Beeston (Broxtowe), Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to assess the potential impacts of climate change on current protections in Beeston. There is no on the ground works and therefore no adverse impact on European sites.

**Table 23. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Bentley Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204004035	By 2027, Environment Agency, Doncaster Council will continue to explore options for flood risk mitigation and undertake focused community engagement in Bentley to improve flood resilience in the Bentley, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to explore options for flood risk mitigation and community engagement. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

**Table 24. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Bingley, Shipley and Baildon Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204204017	By 2027, the Environment Agency and Bradford Metropolitan District Council will explore non-traditional flood risk management schemes which also provide environmental and economic benefits to the local community in Bingley, Shipley and Baildon to reduce flood risk whilst enhancing economic, social and environmental benefits in the Bingley, Shipley and Baildon, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to explore non-traditional management schemes. No on the ground works are committed to and therefore there will be no adverse impact on European sites. This measure may also be beneficial to European sites as the schemes should provide environmental benefit.
0204204011	By 2027, the Environment Agency and Bradford Metropolitan District Council will work in collaboration with key partners to progress and develop options in Bingley, Shipley and Baildon to reduce flood risk in the Bingley, Shipley and Baildon, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to progress and develop options. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

**Table 25. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Birmingham Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0215204095	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council and Walsall Metropolitan Borough Council will create a database of landowners with responsibility for maintaining critical flood assets and contact them to notify them of their responsibilities in Birmingham, Dudley, Sandwell, Solihull and Walsall to better protect properties that are at risk from surface water and/or fluvial sources of flooding, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to create a database of landowners of properties at risk from flooding. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0215204098	By 2022, Sandwell Metropolitan Borough Council, Walsall Metropolitan Borough Council, Dudley Metropolitan Borough Council and City of Wolverhampton Council will have developed a joint flood risk management planning policy for new developments in Sandwell, Walsall, Dudley and Wolverhampton to manage flood risk, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to create planning policies for new developments. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0215704088	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council and Walsall Metropolitan Borough Council will each have developed and/or delivered a programme of flood risk management schemes and adaptations in a climate resilient way in Birmingham, Dudley, Sandwell, Solihull and Walsall to increase resilience from surface water and fluvial sources of flooding, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect, but down the line HRA - this measure commits to delivering a programme of flood risk management schemes. However, the impacts cannot be fully assessed at this point as they will depend on what, where, when, and how the schemes are implemented and this is not given at this stage. Therefore, the schemes that are brought forward as part of this measure will require down the line HRA in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0215204094	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council and Walsall Metropolitan Borough Council will have engaged with heritage stakeholders and partners to identify opportunities to increase the flood resilience of heritage assets in Birmingham, Dudley, Sandwell, Solihull and Walsall to inform works that stakeholders can carry out themselves and any future bids for public funding in the Birmingham, Humber Flood Risk Area.	No likely significant effect, but down the line HRA - this measure does not commit to delivering on the ground works, rather to engage with stakeholders and partners to identify opportunities to increase flood resilience of heritage assets. However, it does mention that stakeholders will carry out these works themselves. Impacts from these works will depend on what, where, when, and how the schemes are implemented and this is not given at this stage. Therefore, the schemes that are brought forward as part of this measure will require down the line HRA in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0205104093	By 2027, Birmingham City Council will implement the River Rea Valley Urban Quarter Supplementary Planning Document to include blue-green corridors in Birmingham to reduce the risk of flooding and help manage climate change in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this measure is a desk based activity to create a planning document. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0205104096	By 2027, Birmingham City Council will improve water flow regulation and undertake measures involving physical interventions to regulate flows, such as the modification or removal of water retaining structures, in Birmingham to reduce flood risk and lessen significant impacts on rivers' hydrological regimes in the Birmingham, Humber Flood Risk Area.	No likely significant effects – Birmingham flood risk area is remote from European sites. The closest European site is Fens Pools SAC, west of the M5 which is approximately 9km from the flood risk area. At this distance it is unlikely any work would adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0215704097	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council and Solihull Metropolitan Borough Council will each have investigated the potential of installing an area wide telemetry system and, if viable, use this to warn and inform of flooding in Birmingham, Dudley, Sandwell and Solihull to provide better warning and informing systems to reduce the impact of flooding, including in the Birmingham, Humber Flood Risk Area.	No likely significant effects – this measure commits to investigating potential for installing telemetry systems for warning of flooding. If viable these will be installed, it is unlikely that telemetry installation would adversely affect European sites.
0215704087	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council and Solihull Metropolitan Borough Council will each have provided evidence and advice to relevant service and infrastructure providers with assets at risk of flooding in Birmingham, Dudley, Sandwell and Solihull to help providers increase the flood resilience of key services and critical infrastructure, such as Birmingham Airport, the strategic and key route networks and railway lines, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0218104056	By 2024, Walsall Metropolitan Borough Council will publish a tool to raise awareness and enable residents, businesses, infrastructure owners and service providers to better prepare for flooding in the Walsall Metropolitan Borough Council area to reduce the impact of flooding including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.



Measure ID	Measure	Likely Significant Effects on European sites
0218104058	By 2026, Walsall Metropolitan Borough Council will share information on communities at risk and owners of critical assets within the Council and with other emergency responders in the Walsall Metropolitan Borough Council area to enable a better response to flooding including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0218104057	By 2026, Walsall Metropolitan Borough Council will share risk and appropriate asset owner information with local community leaders, enabling them to take ownership of managing flood risk in their area in the Walsall Metropolitan Borough Council area to reduce the risk of flooding, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0215704089	By 2027, Birmingham City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council and Solihull Metropolitan Borough Council will use the new national flood risk mapping dataset to engage with communities to help them prepare/respond to flooding and to discuss any other measures in Birmingham, Dudley, Sandwell and Solihull to manage current and future flood risk, including measures that can be done by communities themselves and including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804026	By 2027, the Environment Agency and Birmingham City Council, Solihull Metropolitan Borough Council, Warwickshire County Council and Worcestershire County Council will work together to identify and deliver, if viable, green and blue infrastructure improvements, natural flood management and/or other suitable alleviation measures in the River Cole Catchment to provide flood risk and environmental benefits for communities at risk of flooding, including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – the area designated for this measure is remote from European sites (over 10km) and therefore any on the ground works are unlikely to adversely affect European sites. Additionally, delivering green and blue infrastructure improvements are likely to benefit the natural environment and potentially European sites too.
0203804019	Between 2021 and 2027, the Environment Agency and Birmingham City Council and Severn Trent Water will work together to identify and deliver, if viable, upstream storage, nature based solutions, sustainable drainage systems and/or other suitable alleviation measures in the River Rea Catchment to improve flood resilience and benefit the environment including in the Birmingham, Humber Flood Risk Area.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.
0218104059	By 2027, Walsall Metropolitan Borough Council will work with the National Flood Forum to set up community Flood Action Groups to raise their awareness of flood risk and help them to be better prepared in the Walsall Metropolitan Borough Council area to reduce the impact of flooding in the Tame Anker and Mease Management Catchment including in the Birmingham, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to provide evidence and advice. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

**Table 26. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Brigg Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0202104010	Between 2021 and 2027, the Environment Agency will develop and progress defence resilience works along the River Ancholme at Brigg Island Carr in Brigg, to reduce the risk of fluvial flooding to properties in the Brigg, Humber Flood Risk Area.	No likely significant effects, but down the line HRA - this measure is to develop and progress defence resilience works along the River Ancholme which is a tributary of the River Humber and flows into the Humber Estuary European sites. Although the works are being undertaken over 10km upstream, there may be the potential for downstream effects; however, the actual impact can only be determined when details such as what and how the works will be implemented and therefore the impact cannot be fully assessed at this stage. Therefore, the schemes that are brought forward as part of this measure will require down the line HRA in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0202104011	Between 2021 and 2027, the Environment Agency and Ancholme Internal Drainage Board and Ancholme Catchment Partnership will progress the catchment management approach within the Middle Ancholme in Brigg, to develop and deliver a flood resilient catchment approach and improve the water environment across multiple flood sources in partnership in the Brigg, Humber Flood Risk Area.	No likely significant effects, but down the line HRA - this measure is to develop and progress flood resilience works along the River Ancholme which is a tributary of the River Humber and flows into the Humber Estuary European sites. Although the works are being undertaken over 10km upstream, there may be the potential for downstream effects; however, the actual impact can only be determined when details such as what and how the works will be implemented and therefore the impact cannot be fully assessed at this stage. Therefore, the schemes that are brought forward as part of this measure will require down the line HRA in order to comply with legislation. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202104013	Between 2021 and 2027, the Environment Agency will review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Brigg to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood in the Brigg, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to map and model flooding. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0202104012	Between 2021 and 2027, the Environment Agency will work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Brigg to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF in the Brigg, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to include protective policies within development plans. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

**Table 27. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Brighouse Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204104023	By 2027, the Environment Agency and Calderdale Council (including Yorkshire Water) will invest in flood risk improvement schemes in Brighouse to reduce the risk of flooding and manage coastal change in the Brighouse, Humber Flood Risk Area.	No likely significant effect but down the line HRA– this is a desk based measure to invest in improvement schemes, no on the ground works are committed to, however. there may be the potential for downstream effects; however, the actual impact can only be determined when details such as what and how the works will be implemented and therefore the impact cannot be fully assessed at this stage. Therefore, the schemes that are bought forward as part of this measure will require down the line HRA in order to comply with legislation.

**Table 28. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Burton upon Trent Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0203804010	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change on the town including on the standard of protection provided by the flood risk management scheme in Burton upon Trent to inform future flood risk management in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to assess the impacts of climate change on the standard of current protections. No on the ground works are committed to and therefore there will be no adverse impact on European sites.
0203804004	Between 2021 and 2027, the Environment Agency will extend the Burton upon Trent flood risk management scheme to protect an additional area that flooded in February 2020 in Branston, Burton upon Trent to reduce the risk of flooding in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – Burton upon Trent flood risk area I remote from European sites approximately 20km to nearest European site West Midlands Mosses SAC/Cannock Chase SAC. Therefore no adverse impacts will occur.

Measure ID	Measure	Likely Significant Effects on European sites
0203804007	Between 2021 and 2027, the Environment Agency will investigate the long term capacity and capability of the pumping arrangements for draining surface water from Winshill into the River Trent in Burton upon Trent to inform future management of the risk of flooding from surface water pooling behind the flood defences in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to assess the long term capability and capacity of pumping surface water into the River Trent. No on the ground works are committed to and therefore there will be no adverse impact on European sites. The flood risk area is also remote from any European sites (approx. 20km)
0203804009	Between 2021 and 2027, the Environment Agency will investigate whether measures can be carried out to improve access to culverts in the Stapenhill Brook, Stapenhill, Burton upon Trent to facilitate blockage removal and so reduce flood risk in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to assess if improvements can be made to access culverts. No on the ground works are committed to and therefore there will be no adverse impact on European sites. The flood risk area is also remote from any European sites (approx. 20km)
0203804006	Between 2021 and 2027, the Environment Agency will monitor the flood risk management scheme where it ties in with the railway, and where required will work with Network Rail to carry out measures in Burton upon Trent to maintain an adequate flood defence for Burton, including the railway, in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – Burton upon Trent flood risk area I remote from European sites approximately 20km to nearest European site West Midlands Mosses SAC/Cannock Chase SAC. Therefore, no adverse impacts will occur.
0216504081	By 2024, Staffordshire County Council and the Environment Agency will produce a Surface Water Management Plan in Burton-upon-Trent to strategically understand flood risk and inform future local flood risk management in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect, but down the line HRA – this is a desk based measure to create a Surface Water Management Plan, as a desk based measure creating the management plan will not cause adverse impacts on European sites. However, the management plan will also have to undergo down the line HRA to ensure any measures included and bought forward within the Plan do not cause adverse impact to European sites, to ensure compliance with legislation.

Measure ID	Measure	Likely Significant Effects on European sites
0203804005	Between 2021 and 2027, the Environment Agency will work with Highways England to investigate flooding from the Tatenhill Brook in Burton upon Trent to inform future flood risk management in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – investigating flooding from the Tatenhill Brook will not cause adverse impacts upon European sites.
0203804035	Between 2021 and 2027, the Environment Agency and Staffordshire County Council will work with partners to engage with communities and businesses to raise awareness, increase preparedness and plan to address flooding issues, including what they can do themselves, in Burton-upon-Trent to reduce the risk of current and future flooding in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – engaging with communities and businesses to raise awareness and increase preparedness for following will not adversely affect European sites.
0203804022	Between 2021 and 2027, the Environment Agency and Staffordshire County Council and Derbyshire County Council will work with partners to identify and deliver natural flood management measures in the Dove catchment to improve flood resilience and benefit the environment in the Dove catchment and in the Burton upon Trent, Humber Flood Risk Area	No likely significant effect – identifying and delivering natural management of flooding will not adversely affect European sites. This measure also mentions the measure will benefit the environment and therefore has the potential to benefit European sites as well.
0203804008	Between 2021 and 2027, the Environment Agency will work with property owners to monitor the effectiveness of existing Property Flood Resilience measures and to investigate whether any other measures are required or possible in the island off Burton Bridge, Burton upon Trent to inform future flood risk management in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure to monitor the effectiveness of existing measures. No on the ground works are committed to and therefore there will be no adverse impact on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0203804023	Between 2021 and 2027, the Environment Agency will work with the Transforming the Trent Valley project partnership to deliver floodplain enhancement and reconnection in the Trent valley and the Dove Valley to deliver the Living Floodplains project, benefitting the environment and improving flood resilience of communities including in the Burton upon Trent, Humber Flood Risk Area.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.  The measure also mentions that it will benefit the environment and may therefore also benefit European sites.

**Table 29. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Chesterfield Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0207904064	Between 2021 and 2027, Derbyshire County Council and Chesterfield Borough Council will incorporate upstream storage and natural flood risk management measures along the River Hipper corridor in Derbyshire to reduce flood risk to people, properties and businesses in the Chesterfield, Humber Flood Risk Area.	No likely significant effect – The Hipper River is not connected to European sites and upstream storage and natural flood management is likely to be environmentally positive.

**Table 30. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the City of Bradford Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0205704014	By 2027, Bradford Metropolitan District Council and the Environment Agency will explore surface water management improvements in Bradford District to reduce the volume of surface water entering Bradford Beck and the surrounding drainage network in the City of Bradford, Humber Flood Risk Area.	No likely significant effect – this is a desk based measure which will explore surface water management improvements but does not commit to on the ground implementation of the improvements. Therefore, no adverse impacts will occur on European sites.



**Table 31. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the City of Sheffield Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0215404097	By 2027, Sheffield City Council and Environment Agency (including Yorkshire Water) will investigate, assess and mitigate flood risk from surface water flooding in Sheffield to reduce flood risk in the City of Sheffield, Humber Flood Risk Area.	No likely significant effects – this measure is already being implemented and therefore to comply with legislation, an HRA would already have been undertaken and should have concluded that no adverse effects would occur for the works to be consented.

**Table 32. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Cleethorpes Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0202104017	Between 2021 and 2027, the Environment Agency will review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Cleethorpes to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood in the Cleethorpes, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to review extents and thresholds of flooding. No on the ground works are committed to in this measure and therefore no adverse impact on European sites will occur.
0202104014	Between 2021 and 2027, the Environment Agency and North East Lincolnshire Council will work in partnership to develop coastal schemes to better protect communities in Cleethorpes and Humberston, to provide appropriate flood protection and resilience to communities in line with predicted sea level rise, identifying opportunities for working with natural processes where possible, in the Cleethorpes, Humber Flood Risk Area.	No likely significant effects but down the line HRA – the measure is within close proximity to the Humber Estuary and is talking about developing coastal schemes to protect communities from sea level rise. Therefore, there may be potential impacts including coastal squeeze. However, the FRMP measure does not provide specific details with regards to the measure and therefore cannot be assessed at this stage and would need down the line HRA

Measure ID	Measure	Likely Significant Effects on European sites
0202104015	Between 2021 and 2027, the Environment Agency will work in partnership with the Coastal Protection Authority to undertake monitoring and necessary refurbishment of coastal defence assets in Cleethorpes to provide appropriate protection to existing properties in the Cleethorpes, Humber Flood Risk Area.	No likely significant effects - the monitoring and refurbishing of existing assets will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0212904008	<p>Between 2021 and 2027, North East Lincolnshire Council will work in partnership with the Environment Agency in Cleethorpes to undertake preliminary works in preparation for the future delivery of the Lower Kingsway Sea Wall Scheme to prevent tidal erosion and provide flood resilience to existing development in the Cleethorpes, Humber Flood Risk Area.</p>	<p>No likely significant effects but down the line HRA required – the measure is adjacent to or even partially within (difficult to determine due to the resolution of the mapping) the Humber Estuary SPA, SAC and Ramsar site to provide commitment to undertake preliminary works in preparation for the future delivery of the Lower Kingsway Sea Wall Scheme to prevent tidal erosion and provide flood resilience to existing development in the Cleethorpes. Potential impacts including coastal squeeze, direct loss of designated habitat/ supporting habitat, disturbance from construction activities (noise, vibration and visual), pollution events during construction (sedimentation/ dust). However, this scheme is not new to the FRMP but effectively exists to implement the Humber Estuary to Gibraltar Point SMP and the coastal strategy for this area that was developed subsequent to that SMP. These were both subject to their own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP and coastal strategy as such, no likely significant effect will stem from including the measure in the FRMP. The specific scheme will be subject to its own HRAs before it is consented.</p>

Measure ID	Measure	Likely Significant Effects on European sites
0212904004	<p>Between 2021 and 2027, North East Lincolnshire Council will work in partnership with the Environment Agency to progress the Humberston Fitties flood defence scheme in Humberston and Cleethorpes to prevent tidal erosion and provide flood resilience to existing development sited in front of the Environment Agency flood embankment in the Cleethorpes, Humber Flood Risk Area.</p>	<p>No likely significant effects, but down the line HRA required – the measure is adjacent to or even partially within (difficult to determine due to the resolution of the mapping) the Humber Estuary SPA, SAC and Ramsar site to provide commitment to work in partnership to progress the Humberston Fitties flood defence scheme in Humberston and Cleethorpes. Potential impacts including coastal squeeze, direct loss of designated habitat/ supporting habitat, disturbance from construction activities (noise, vibration and visual), pollution events during construction (sedimentation/ dust). However, this scheme is not new to the FRMP but effectively exists to implement the Humber Estuary to Gibraltar Point SMP and the coastal strategy for this area that was developed subsequent to that SMP. These were both subject to their own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP and coastal strategy; as such there will be no likely significant effect <u>from including the measure in the FRMP</u>. The specific scheme will be subject to its own HRAs before it is consented.</p>

Measure ID	Measure	Likely Significant Effects on European sites
0202104016	Between 2021 and 2027, the Environment Agency will work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Cleethorpes to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF in the Cleethorpes, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to influence the inclusion of policies within local planning documents to avoid inappropriate development in Cleethorpes to maximise opportunities to reduce flood risk. No on the ground works are committed to in this measure and therefore no adverse impact on European sites will occur.

**Table 33. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Derby, Humber (RoFSW) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201004023	Between 2021 and 2023, the Environment Agency and Derby City Council will continue to implement package 2 and 3 of 'Our City Our River' as part of the Lower Derwent Flood Risk Management Strategy in Derby to improve management of flood risk for the community in the Derby, Humber Flood Risk Area.	No likely significant effects – an ongoing measure (already consented). This measure is merely for the continued implementation of package 2 and 3 of 'Our City Our River' as part of the Lower Derwent Flood Risk Management Strategy. The FRMP will have already been subject to HRA as part of its development and any scheme will be required to undertake a scheme specific HRA for any application. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.

Measure ID	Measure	Likely Significant Effects on European sites
0201004024	Between 2021 and 2027, the Environment Agency will review and update the River Derwent Model in Derbyshire to improve understanding of baseline flood risk to communities at risk of flooding across Derbyshire and in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to review and update the River Derwent Model in Derbyshire to improve understanding of baseline flood risk to communities at risk of flooding across Derbyshire No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.
0201004022	Between 2021 and 2027, the Environment Agency will use existing flood forecasts to improve flood warning quality by ensuring the following flood warning areas have impact based thresholds in place in Derby to improving community preparedness in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to use existing flood forecasts to improve flood warning quality. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.

**Table 34. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Derby, Humber (RoFSW) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0207804070	By 2023, Derby City Council will establish an intelligence based highway drainage asset management programme in Derby to increase the resilience of the existing drainage system in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to establish an intelligence based highway drainage asset management programme. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.

Measure ID	Measure	Likely Significant Effects on European sites
0207804072	By 2027, Derby City Council will identify and implement possible opportunities to separate highway drainage from the public sewer, ideally through the use of Sustainable Drainage Systems in Derby to increase flood resilience, capture carbon and provide new habitat in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to identify and implement possible opportunities to separate highway drainage from the public sewer. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.
0207804069	By 2027, Derby City Council will investigate and implement schemes on the Littleover Brook, including deculverting and upper catchment storage in Derby to reduce flood risk in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to investigate and implement schemes on the Littleover Brook, including deculverting and upper catchment storage. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.
0207804073	By 2027, Derby City Council will progress the Southern Derby Surface Water Management Strategy in Derby to increase flood resilience, capture carbon and provide new habitat in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is to progress the existing Southern Derby Surface Water Management Strategy. This strategy will have been subject to HRA as part of its adoption. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impacts on European sites will occur.
0207804068	Between 2021 and 2027, Derby City Council and the Environment Agency will reinstate the Cotton Brook culvert to a good condition in Derby to reduce the risk of collapse and the associated flood risk in the Derby, Humber Flood Risk Area.	No Likely significant effects - This measure is to reinstate the Cotton Brook culvert to a good condition. This measure is included within the Derby City Council Surface Water Management Plan that will have been subject to HRA as part of its adoption. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.

Measure ID	Measure	Likely Significant Effects on European sites
0207804067	By 2027, Derby City Council will review flood risk from Bramble Brook in Derby to manage the risk of culvert collapse in the Derby, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to review flood risk from Bramble Brook in Derby to manage the risk of culvert collapse. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.
0207804071	By 2027, Derby City Council will seek opportunities to install natural flood risk management (Natural Flood Management) schemes, including the Oakwood area in Derby to increase flood resilience, capture carbon and provide new habitat in the Derby, Humber Flood Risk Area.	No likely significant effects – an ongoing measure that has already been consented this measure is a desk based activity to seek opportunities to install natural flood risk management (Natural Flood Management) schemes. No on the ground works are committed to in this measure. Further, there are no European or Ramsar sites within the District of the City of Derby, or within 10km of its boundary. Therefore no adverse impact on European sites will occur.

**Table 35. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Dunscroft, Humber (RoFRS) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204004036	By 2027, the Environment Agency and Internal Drainage Boards will continue to invest in improving and maintaining existing flood risk management assets to an agreed standard of protection whilst taking into account climate change impacts in Doncaster to reduce the risk of flooding in the Dunscroft, Humber Flood Risk Area.	No likely significant effects – an ongoing measure that has already been consented this measure is a desk based activity to commit to continue to invest in improving and maintaining existing flood risk management assets. No specific on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.



Measure ID	Measure	Likely Significant Effects on European sites
0201104012	Between 2021 and 2027, the Environment Agency will work in partnership to support sustainable growth under the Defra approved Isle of Axholme Flood Risk Management Strategy in Dunscroft to manage the risk of flooding from all sources in the Dunscroft, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity that provides the commitment to work in partnership to support sustainable growth under the Defra approved Isle of Axholme Flood Risk Management Strategy. This strategy and subsequent scheme will have been subject to HRA as part of its development and approval. No on the ground works are committed to in this measure, merely to support the strategy. Therefore no adverse impact on European sites will occur.

**Table 36. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Fazeley, Humber (RoFRS) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0203804011	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences, in Fazeley, Tamworth to inform future flood risk management in the Fazeley, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity that provides the commitment to assess the impacts of climate change to inform future flood risk management. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.
0203804014	Between 2021 and 2027, the Environment Agency will investigate and replace, if necessary and viable, a section of flood bank along the Fazeley Road in Fazeley, Tamworth to continue to reduce flood risk in the Fazeley, Humber Flood Risk Area.	No likely significant effects – this measure provides the commitment to investigate and replace (if necessary and viable) a section of flood bank along Fazeley Road, Fazeley. The nearest European site is the Mease SAC, located approximately 8km north of Fazeley. Due to the distances involved, it is unlikely that the resulting scheme would result in a likely significant effect on the River Mease SAC, however it is recommended that a down the line HRA is undertaken when sufficient detail is available for the scheme, if it goes ahead.

Measure ID	Measure	Likely Significant Effects on European sites
0203804013	Between 2021 and 2027, the Environment Agency will work with Drayton Manor Park to understand flood risk from Bourne Brook and to produce a management plan in Fazeley, Tamworth to manage flood risk in the Fazeley, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to understand flood risk from Bourne Brook to Drayton Manor Park and to produce a management plan. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.
0203804028	By 2027, the Environment Agency and Staffordshire County Council will work with partners to deliver green and blue infrastructure, natural flood management and climate resilient improvements in the southern Staffordshire catchments of the Black-Bourne Brook, Fotherley Brook and the Crane Brook and its tributaries to provide environmental and flood risk benefits in the Tame Anker and Mease Management Catchment, including in the Fazeley, Humber Flood Risk Area.	No likely significant effects – an ongoing measure that has already been consented this ongoing measure is a desk based activity that commits to work with partners to deliver green and blue infrastructure, natural flood management and climate resilient improvements in the Black-Bourne Brook, Fotherley Brook and the Crane Brook and its tributaries to provide environmental and flood risk benefits in the Tame Anker and Mease Management Catchment. As an ongoing measures, it will have already been subject to HRA and any detailed schemes that result will be subject to HRA as required prior to adoption/ approval. No specific detail regarding on the ground works are detailed in this measure. Therefore no adverse impact on European sites will occur.
0203804036	Between 2021 and 2027, the Environment Agency and Staffordshire County Council will work with partners to engage with communities and businesses to raise awareness, increase preparedness and plan to address flooding issues, including what they can do themselves, in Fazeley (Tamworth) to reduce the risk of current and future flooding in the Fazeley, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to work with partners to engage with communities and businesses at risk of flooding in Fazeley (Tamworth) to raise awareness and increase their preparedness for flooding. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.

Measure ID	Measure	Likely Significant Effects on European sites
0203804012	Between 2021 and 2027, the Environment Agency will work with the community to agree roles and responsibilities for the long term maintenance and operation of the New Mill Lane flood gate during flood events in Fazeley to continue to reduce flood risk in the Fazeley, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to work with the community to agree roles and responsibilities for the long term maintenance and operation of the New Mill Lane flood gate during flood events. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.

**Table 37. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Gilberdyke, Humber (RoFRS) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204304063	By 2027, the Environment Agency and East Riding of Yorkshire Council (Including Yorkshire Water and Internal Drainage Board) will work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements in Gilberdyke to reduce the risk of flooding in the Gilberdyke, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.

**Table 38. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Goole, Humber (RoFRS) Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204304051	By 2027, the Environment Agency and East Riding of Yorkshire Council (Including Yorkshire Water and Internal Drainage Board) will work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements in East Riding to improve flood resilience and effective management of flood risk in the Goole, Humber Flood Risk Area.	No likely significant effects – this measure is a desk based activity to work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.

**Table 39. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Grimsby Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0202104006	The Environment Agency will develop and complete the Stallingborough 3 coastal defence improvement scheme taking an adaptive approach in Grimsby to provide appropriate flood protection to existing property and development in the Grimsby, Humber Flood Risk Area.	No likely significant effect – This is a commitment to deliver a scheme that is already advanced and is currently being subject to its own HRA. We wish to avoid duplicating HRA processes and, therefore, as with SMP measures and coastal strategy measures, we have concluded there would be no adverse effect on integrity from referencing such measures in the FRMP, because the FRMP is not the source of these measures (rather they are being included for completeness) and they are already subject to separate consenting processes and HRAs.

Measure ID	Measure	Likely Significant Effects on European sites
0202104007	The Environment Agency will engage with the local community to increase sign up to the full Environment Agency Flood Warning Service in Grimsby to create a resilient community that is aware of and prepared for the risk of tidal flooding following the removal of the Grimsby Sirens in the Grimsby, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and is unlikely to involve physical activity on the ground. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.
0212904005	North East Lincolnshire Council will, on completion of a surface water modelling update for the Grimsby area, work in partnership with Anglian Water and the Environment Agency in Grimsby to undertake a programme of sustainable drainage works to manage surface water run-off rates and reduce surface water flood risk to properties and public highway in the Grimsby, Humber Flood Risk Area.	No likely significant effect, but down the line HRA required - This is a protective measure that commits to delivering a programme of sustainable drainage works. However, there is insufficient information on the proposed drainage works at this stage to undertake a detailed assessment of this measure. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0212904006	North East Lincolnshire Council will work in partnership with Anglian Water and the Environment Agency in Grimsby to update the surface water modelling and mapping evidence base to take into account the latest climate change guidance and ensure the evidence base remains current to inform sustainable drainage options in the Grimsby, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure. Updating surface water modelling and mapping evidence base to ensure decisions are made on up to date information will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0202104008	The Environment Agency will work with partners, the community, and landowners to investigate opportunities for river restoration projects in the River Freshney, to enhance amenity value and the habitats of the water environment, whilst sustaining the level of protection from flood risk in the Grimsby, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – This is a protective measure however there is insufficient information on the restoration projects at this stage to undertake a detailed assessment of this measure. Delivering nature-based solutions is likely to be beneficial for both human and environmental receptors. Notwithstanding this, such measures can impact on the water quality and level in European sites, particularly in the construction period. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on the integrity of European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202104009	The Environment Agency will work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Grimsby to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF in the Grimsby, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure. Working with the LPA to ensure inclusion of policies within local plans to avoid inappropriate development will not adversely affect European sites.

**Table 40. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Gunthorpe Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0201104004	By 2027, the Environment Agency will continue to engage with the community in Gunthorpe to increase awareness of flood risk and preparedness for flooding in the Gunthorpe, Humber Flood Risk Area.	No likely significant effect – This measure is one of recovery and review. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.

**Table 41. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Hebden Bridge Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0204104021	By 2027, the Environment Agency and Calderdale Council will invest in flood risk improvement schemes in Hebden Bridge to reduce the risk of flooding and manage coastal change in the Hebden Bridge, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – This is a protective measure however there is insufficient information on the schemes at this stage to undertake a detailed assessment of this measure. Hebden Bridge is surrounded by the South Pennine Moors Phase 2 SPA and any activities that may result in hydrological changes to the supporting habitats within the Sac could lead to adverse effects on the features of interest. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on the integrity of European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

**Table 42. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Hedon Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0204304066	By 2027, the Environment Agency and East Riding of Yorkshire Council (Including Yorkshire Water) will work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements in Hedon to improve flood resilience and effective management of flood risk in the Hedon, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – This is a preventive measure however Hedon is close to the Humber Estuary SAC/SPA/Ramsar and there is insufficient information on the proposals at this stage to undertake a detailed assessment of this measure. Proposals may impact on the water quality and level in European sites. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on the integrity of European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.



**Table 43. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Hessle Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0204304065	The Environment Agency and East Riding Of Yorkshire Council, Yorkshire Water and IDB will work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements in Hessle to reduce the risk of flooding in the Hessle, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – This is a preventive measure; however, Hessle is adjacent to Humber Estuary SAC/SPA/Ramsar site and there is insufficient information on the proposals at this stage to undertake a detailed assessment of this measure. Proposals may impact on the water quality and level in European sites. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on the integrity of European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

**Table 44. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Hinckley & Burbage Flood Risk Area (RoFRW)**

Measure ID	Measure	Likely Significant Effects on European sites
0211604059	Between 2021 and 2027, Leicestershire County Council and Severn Trent Water and Environment Agency will collaborate to improve modelling of hydraulic systems in Burbage (Hinckley) to improve understanding of flood risk and investigate appropriate options to manage this risk in the Hinckley & Burbage, Humber Flood Risk Area.	No likely significant effect - This is a preventive measure. Improving modelling in order to improve understanding will not lead to adverse effects on European sites. Moreover, this measure is simply a general commitment to explore options without any commitment to particular initiatives. Hinckley & Burbage Flood Risk Area is also relatively remote from hydrologically sensitive European sites.

**Table 45. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Huddersfield Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0204104076	The Environment Agency and Kirklees Council (including other risk management authorities) will work in collaboration with key partners to progress and develop options for Huddersfield and surrounding areas to reduce the risk of river flooding in Huddersfield to reduce flood risk in the Huddersfield, Humber Flood Risk Area.	No likely significant effect – This is a protective measure to develop options to reduce the risk of river flooding. However, the South Pennine Moors Phase 2 SPA is over 10km upstream and elevated from the area covered by this measure. There are no other hydrologically sensitive European sites within 15 km of this area.

**Table 46. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Immingham Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0202104003	The Environment Agency will identify locations and deliver habitat improvement projects in the South Humber Bank area to benefit SPA habitats to enable continued delivery of maintenance to tidal flood management assets in the Immingham, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and is carried over from the cycle 1 FRMP, which would have been subject to the statutory consenting process, including HRA.
0212904002	North East Lincolnshire Council will, on completion of a surface water modelling update for the Immingham area, work in partnership with Anglian Water and the Environment Agency in Immingham to undertake a programme of sustainable drainage works to manage surface water run-off rates and reduce the risk of surface water flooding to properties and public highways in the Immingham, Humber Flood Risk Area.	No likely significant effect, but down the line HRA required - This is a protective measure that commits to delivering a programme of sustainable drainage works. However, there is insufficient information on the proposed drainage works at this stage to undertake a detailed assessment of this measure. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0202104002	The Environment Agency will progress the Halton Marshes Phase 2 flood alleviation scheme taking an adaptive approach in Immingham to provide appropriate flood resilience to existing port development in line with predicted sea level rise in the Immingham, Humber Flood Risk Area.	No likely significant effect – This scheme is still to go through its business case but an HRA will be undertaken on the finalised scheme as part of that process. We wish to avoid duplicating HRA processes and, therefore, as with SMP measures and coastal strategy measures, we have concluded there would be no adverse effect on integrity from referencing such measures in the FRMP, because the FRMP is not the source of these measures (rather they are being included for completeness) and they are already subject to separate consenting processes and HRAs.
0202104005	The Environment Agency will review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Immingham, to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood in the Immingham, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness. Reviewing Flood Warning Area extents and thresholds will not lead to adverse effects on European sites.
0212904003	North East Lincolnshire Council will work in partnership with Anglian Water, Internal Drainage Board and the Environment Agency in Immingham to update the surface water modelling and mapping evidence base to take into account the latest climate change guidance and ensure the evidence base remains current to inform sustainable drainage options in the Immingham, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure. Updating surface water modelling and mapping evidence base to ensure decisions are made on up to date information will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0202104004	The Environment Agency will work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Immingham to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF in the Immingham, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure. Working with the LPA to ensure inclusion of policies within local plans to avoid inappropriate development will not adversely affect European sites.

**Table 47. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Kingston upon Hull and Haltemprice Flood Risk Area (RoFRW) – note none of the measures in the FRMP for this FRA are associated with tidal flooding**

Measure ID	Measure	Likely Significant Effects on European sites
0208504049	By 2027, Living with Water Partnership (Environment Agency, East Riding of Yorkshire Council, Yorkshire Water and Hull City Council) will continue to implement Living With Water interventions in Haltemprice to improved resilience, environmental and social economic benefits as part of flood risk management works in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect, but down the line HRA required - This measure commits to the continued delivery of flood risk intervention/ management works. However, there is insufficient information on the proposals at this stage to undertake a detailed assessment of this measure. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0210804126	By 2027, Hull City Council and the Environment Agency will explore options for surface water flood risk improvement schemes utilising sustainable drainage systems in Hull and Haltemprice to decrease the surface water flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect - This is a preventive measure and is carried over from the cycle 1 FRMP, which would have been subject to the statutory consenting process, including HRA.

Measure ID	Measure	Likely Significant Effects on European sites
0208504062	East Riding of Yorkshire Council will identify and where feasible deliver biodiversity enhancements and Water Framework Directive benefits through flood alleviation schemes and maintenance approaches in Haltemprice to achieve net gain in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – There is insufficient information on the projects at this stage to undertake a detailed assessment of this measure. Delivering biodiversity enhancements are likely to be beneficial for both human and environmental receptors. Notwithstanding this, such measures may impact European sites and Kingston upon Hull is adjacent to Humber Estuary SAC/SPA/Ramsar site. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on the integrity of European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0208504053	East Riding of Yorkshire Council will identify further flood alleviation schemes in known flood prone areas in Haltemprice to manage risk in other parts of the FRMP area in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect, but down the line HRA required - This is a protective measure however, there is insufficient information on the flood alleviation schemes at this stage to undertake a detailed assessment of this measure. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0208504055	East Riding of Yorkshire Council will publish and update progress reports on implementation of actions identified in statutory Flood Investigation Reports produced in Haltemprice to improve effective management of flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect – This measure is one of recovery and review. Publishing and updating progress reports will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0208504059	East Riding of Yorkshire Council will support implementation of strategic public sewer improvements in Haltemprice to reduce integrated flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure. Improving the public sewerage system will not adversely affect European sites. Indeed, it is likely to benefit European sites in the long-term.
0208504058	East Riding of Yorkshire Council will support the implementation of Sustainable Drainage Systems to manage flood risk associated with new development in Haltemprice to reduce flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required - This is a preventive measure however, there is insufficient information on the natural flood management schemes at this stage to undertake a detailed assessment of this measure. Natural flood management intervention delivered immediately upstream of a designated floodplain or waterbody, while intended to restore the hydrological regime to a natural baseline, could reduce the volume of freshwater input to and flooding regime in that downstream European site. Bespoke HRAs will be needed. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0208504060	East Riding of Yorkshire Council will use published model outputs to update the Strategic Flood Risk Assessment and support developers in utilising this information in site specific flood risk assessments submitted with planning applications in Haltemprice to improve understanding of flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area	No likely significant effect – This is a preventive measure. updating the Strategic Flood Risk Assessment in order to support developers preparing site specific flood risk assessments will not adversely affect European sites.
0208504054	East Riding of Yorkshire Council and Yorkshire Water will work with partners to ensure that investment plans consider the need for new and improved flood risk infrastructure in Haltemprice to reduce integrated flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect - This measure and unlikely to involve physical activity on the ground. Working with partners in order to ensure that investment plans consider the need for new and improved flood risk infrastructure will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0208504057	East Riding of Yorkshire Council and Environment Agency, Yorkshire Water, Hull City Council will work with partners to identify where cost-savings can potentially be made through different approaches to maintenance activities in Haltemprice to improve effective management of flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect – This is a protective measure. Identifying where cost-savings can potentially be made will not adversely affect European sites.
0208504061	East Riding of Yorkshire Council and the Environment Agency will work with partners to improve the uptake of the flood warning service and improve real time warning and informing systems in the catchment area in Haltemprice to improve community resilience and support asset performance in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and is unlikely to involve physical activity on the ground. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.
0208504056	East Riding of Yorkshire Council will work with risk management authorities to share and agree maintenance plans and priorities in Haltemprice to improve effective management of flood risk in the Kingston upon Hull and Haltemprice, Humber Flood Risk Area.	No likely significant effect, but down the line HRA required - This is a protective measure however, there is insufficient information on the maintenance plans at this stage to undertake a detailed assessment of this measure. Bespoke HRAs will be needed of more detailed proposals to adequately appraise LSEs and, where relevant, adverse effects on European sites. In line with the guidance quoted in paragraph 2.24, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

**Table 48. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Kingston upon Hull Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0210804131	By 2027, Hull City Council and the Environment Agency will implement community outreach considerations including flood buses with key stakeholders and use of social media outlets in Hull to decrease flood risk in the Kingston upon Hull, Humber Flood Risk Area.	No likely significant effect - This measure is one of preparedness and is carried over from the cycle 1 FRMP, which would have been subject to the statutory consenting process, including HRA.

**Table 49. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Leeds Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0211404084	Leeds City Council and the Environment Agency will identify and develop flood risk management measures and improvements to the River Aire and its tributaries, including through Leeds Flood Alleviation Scheme 2 in Leeds to reduce flood risk across Leeds in the Aire and Calder Management Catchment.	No likely significant effect - This measure is already being implemented [or under construction] so the decision to proceed has already been made. The Scheme is remote from any hydrologically sensitive European site.

**Table 50. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Leeds Flood Risk Area (RoFRW)**

Measure ID	Measure	Likely Significant Effects on European sites
0204204083	The Environment Agency and Leeds City Council will work in collaboration with Yorkshire Water Services and other key partners in Leeds to reduce flood risk and deliver multiple benefits in the Leeds, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.



**Table 51. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Leicester Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0201004035	Between 2021 and 2027, the Environment Agency and Leicester City Council will work collaboratively to investigate opportunities in the Rothley Brook area in Glenfield to reduce fluvial and pluvial flood risk in the Leicester, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004031	The Environment Agency will work with communities to improve registration to flood warnings direct in Leicester to enable communities to respond to flood events in the Leicester, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and is unlikely to involve physical activity on the ground. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.

**Table 52. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Leicester Flood Risk Area (RoFRW)**

Measure ID	Measure	Likely Significant Effects on European sites
0211504061	Between 2020 and 2023, Leicester City Council and Environment Agency, Leicestershire County Council will deliver the actions outlined in the Leicester City Council Climate Emergency Action Plan relating to flood risk in Leicester City to reduce properties at risk from flooding in the Leicester, Humber Flood Risk Area.	No likely significant effect – This measure will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0203804100	By 2025, Severn Trent Water and Leicester City Council and Leicestershire County Council will undertake a detailed investigation to understand flood risk from surface water, sewers and watercourses, and develop options in the Hol Brook catchment to reduce flood risk in the Leicester, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.

**Table 53. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Long Eaton Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0201004030	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences in Long Eaton to inform future flood risk management in the Long Eaton, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004025	The Environment Agency will review asset maintenance regimes and inspection programmes in Long Eaton to understand condition and ensure performance and optimise asset management delivery for Strategically Important Assets in the Long Eaton, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004029	Between 2021 and 2027, the Environment Agency will review flood risk and update the Golden Brook model in Long Eaton to improve understanding of baseline flood risk to communities at risk of flooding, and to support the development of potential and feasible options for flood risk management in the Long Eaton, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004026	Between 2021 and 2027, the Environment Agency will work in partnership and advise developers concerning flood risk to and from the proposed development of essential infrastructure in Long Eaton to ensure flood risk is managed effectively and work towards environmental betterment in the Long Eaton, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.

Measure ID	Measure	Likely Significant Effects on European sites
0201004027	Between 2021 and 2027, the Environment Agency will work with communities to improve flood risk awareness and increase registration levels to the 'Flood Warning Service' in Long Eaton to ensure that residents and businesses are prepared to respond to a flood event, therefore reducing impact and supporting recovery in the Long Eaton, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and is unlikely to involve physical activity on the ground. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.

**Table 54. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Loughborough Flood Risk Area (RoFRS)**

Measure ID	Measure	Likely Significant Effects on European sites
0203804101	By 2027, Severn Trent Water and the Environment Agency will assess the viability of using Nanpantan reservoir in the Wood Brook catchment to manage flood risk in the Loughborough, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004036	Between 2021 and 2027, the Environment Agency and Charnborough Borough Council and Leicestershire County Council will work collaboratively to investigate and develop feasible options in Loughborough to manage flood risk and create environmental benefits in the Loughborough, Humber Flood Risk Area.	No likely significant effect – This is a protective measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.
0201004032	The Environment Agency will work with communities to improve registration to flood warnings direct in Loughborough to enable communities to respond to flood events in the Loughborough, Humber Flood Risk Area.	No likely significant effect – This measure is one of preparedness and is unlikely to involve physical activity on the ground. Working with the local community to raise awareness and understand the role of emergency responders will not lead to adverse effects on European sites.

**Table 55. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Loughborough Flood Risk Area (RoFRW)**

Measure ID	Measure	Likely Significant Effects on European sites
0211604058	Leicestershire County Council and the Environment Agency will collaborate to improve modelling of surface water and watercourses in Loughborough to improve understanding of flood risk and investigate sustainable options to manage this risk in the Loughborough, Humber Flood Risk Area.	No likely significant effect – This is a preventive measure and will not adversely affect European sites. The area is remote from any hydrologically sensitive European site.

**Table 56. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Louth Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0211805005	implement flood risk management measures in Louth to protect property from surface water flooding	No likely significant effect – Louth is more than 6km from the nearest hydrologically sensitive European site (Humber Estuary SPA/Ramsar site) and flood risk measures will therefore not affect European sites
0202104018	Review the operation of the upstream flood storage reservoir in Louth to optimise flood risk benefits to the existing community, and provide an evidence base for updates to the Flood Warning Area extents and thresholds	No likely significant effect – This is only a commitment to review the operation of the flood storage reservoir and Louth is more than 6km from the nearest hydrologically sensitive European site (Humber Estuary SPA/Ramsar site) such that flood risk measures will therefore not affect European sites
0202104020	Seek to review the fluvial defences, including a review of tenancies of Environment Agency embankments, in the Louth area, to ensure the quality of the water environment, and level of flood defence protection, is maintained	No likely significant effect – Louth is more than 6km from the nearest hydrologically sensitive European site (Humber Estuary SPA/Ramsar site) and flood risk measures will therefore not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0202104019	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Louth to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – influencing planning policy to avoid inappropriate development regarding flood risk will not adversely affect European sites

**Table 57. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Mansfield Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0213704056	By 2021, Nottinghamshire County Council will produce a hydraulic modelling study and supply high level flood risk optioneering in Mansfield to examine options to improve protection and reduce flood risk to homes in the Mansfield, Humber Flood Risk Area.	No likely significant effect – Mansfield is remote from hydrologically sensitive European sites and this measure is simply a commitment to a modelling study and high level optioneering.

**Table 58. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Mirfield Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204104069	Work in collaboration with key partners to progress and develop options for Mirfield and Ravensthorpe to reduce the risk of flooding in Kirklees	No likely significant effect – Mirfield is remote from hydrologically sensitive European sites and this measure is simply a commitment to develop some options.

**Table 59. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Mytholmroyd Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204104025	Continue to monitor performance of existing flood risk management scheme in Mytholmroyd to reduce the risk of flooding and manage coastal change	No likely significant effect – a commitment to monitoring existing schemes will not affect European sites

**Table 60. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Newark on Trent Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104003	Between 2021 and 2027, the Environment Agency will undertake an asset investigation in Newark to improve our understanding of the assets' condition, investigate options for flood risk management and progress if there are viable options in the Newark-on-Trent, Humber Flood Risk Area.	No likely significant effect – Newark on Trent is remote from hydrologically sensitive European sites.

**Table 61. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Nottingham Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104006	Between 2021 and 2027, the Environment Agency will understand the requirements for future capital investment in strategically important assets in Nottingham to inform future replacement or renewal of flood risk management assets including Holme Sluices, Meadow Lock, Tinker's Leen and Tottle Brook sluices and outfalls in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites and this measure is principally about future capital investment priorities.

Measure ID	Measure	Likely Significant Effects on European sites
0201104009	Between 2021 and 2027, the Environment Agency and Nottingham City Council will undertake a flood risk management study in the Tottle Brook Catchment in Nottingham to identify and progress viable options to reduce flood risk and provide social, economic, and environmental enhancements in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites and this measure is simply a commitment to undertake a study.
0213604049	Between 2021 and 2027, Nottingham City Council and the Environment Agency will undertake a flood risk management study in the Tottle Brook catchment to identify the best approach to better protect residents at risk of flooding in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites and this measure is simply a commitment to undertake a study.
0201104002	Between 2021 and 2027, the Environment Agency and Nottingham City Council, Nottingham County Council and Severn Trent Water will work with stakeholders to produce a River Leen catchment-wide approach to flood risk and the wider environment in Nottingham to reduce flood risk, improve the water environment, and increase amenity value to the local community in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites and this measure is simply a commitment to devise an approach to flood risk and environment.
0213604048	Between 2021 and 2027, Nottingham City Council will complete a city wide programme to improve community flood resilience in Nottingham to improve the resilience of communities across the city through property level protection, retrofit of sustainable drainage systems and community engagement in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites and this measure is concerned with resilience to flood risk at the point of impact rather than engineering at watercourses.
0213704054	Between 2021 and 2027, Severn Trent Water and Nottinghamshire County Council will deliver, if viable, multiple projects from the Upper Daybrook catchment study in Daybrook to provide homes better protected and reduce flood risk in the Nottingham, Humber Flood Risk Area.	No likely significant effect – Nottingham is remote from hydrologically sensitive European sites.

**Table 62. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Selly Park Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0203604042	Assess the potential impacts of climate change, including on the standard of protection provided by the flood risk management schemes, in Selly Park to inform future flood risk management	No likely significant effect – Selly Park (Birmingham) is remote from hydrologically sensitive European sites and this measure is simply a commitment to assessing the potential to do something.
0203604044	Continue to investigate, and if viable progress, a flood risk management scheme in Selly Park (First Avenue) to reduce flood risk	No likely significant effect – Selly Park (Birmingham) is remote from hydrologically sensitive European sites
0203804037	Between 2021 and 2027, the Environment Agency and Birmingham City Council and Severn Trent Water will work with partners to engage with communities and businesses to raise awareness, increase preparedness and plan to address flooding issues, including what they can do themselves, in Selly Park to reduce the risk of current and future flooding in the Selly Park, Humber Flood Risk Area.	No likely significant effect – Selly Park (Birmingham) is remote from hydrologically sensitive European sites and this measure is concerned purely with awareness raising
0203804020	Between 2021 and 2027, the Environment Agency and Birmingham City Council, Severn Trent Water and partners will work together to identify and deliver, if viable, upstream storage, nature based solutions, sustainable drainage systems and/or other suitable alleviation measures in the River Rea Catchment to improve flood resilience and benefit the environment including in the Selly Park, Humber Flood Risk Area.	No likely significant effect – nature base solutions may positively or negatively affect hydrologically sensitive European sites however, Selly Park (Birmingham) is remote from hydrologically sensitive European sites such that upstream storage or other SUDs will not affect European sites.



**Table 63. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Sheffield Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0215404100	Deliver the proposed flood risk management improvements in Blackburn Brook to reduce flood risk	No likely significant effect – The flood risk area is remote from hydrologically sensitive European sites (South Pennine Moors SAC is within Sheffield borough but is over 10km west of the flood risk area and not connected to the Blackburn Brook).
0215404101	Deliver the proposed flood risk management improvements in Clough Dyke to reduce flood risk	No likely significant effect – The flood risk area is remote from hydrologically sensitive European sites (South Pennine Moors SAC is within Sheffield borough but is over 10km west of the flood risk area and not connected to Clough Dyke).
0215404099	Deliver the proposed flood risk management improvements in Sheaf and Porter	No likely significant effect, but down-the-line HRA required – The flood risk area is within 600m at its closest of the nearest hydrologically sensitive European site (South Pennine Moors SAC). Nonetheless there is no hydrological connection since the SAC is at a higher elevation than the flood risk area. However, the SAC is also coincident with Peak District Moors SPA which is designated for disturbance-sensitive bird species. Depending on the details of the works and their timing, down-the-line HRA is therefore required prior to implementation. It is understood this is an ongoing measure so potential for impacts on the SPA will have been considered before consent was granted.
0215404098	Deliver the proposed flood risk management improvements on Upper Don Flood Alleviation Scheme in Upper Don	No likely significant effect – The flood risk area is within 2km at its closest of the nearest hydrologically sensitive European site (South Pennine Moors SAC). Nonetheless there is no hydrological connection since the SAC is at a higher elevation than the flood risk area.

**Table 64. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Sparkhill Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0203804099	Assess the potential impact of climate change in Sparkhill to inform future flood risk management	No likely significant effect – Sparkhill (Birmingham) is remote from hydrologically sensitive European sites and this measure is simply a commitment to investigate climate change
0203604043	Continue to investigate, and if viable progress, a flood risk management scheme	No likely significant effect – Sparkhill (Birmingham) is remote from hydrologically sensitive European sites
0203804033	Between 2021 and 2027, the Environment Agency and Birmingham City Council will work with partners to engage with communities and businesses to raise awareness, increase preparedness and plan to address flooding issues, including what they can do themselves, in Sparkhill to reduce the risk of current and future flooding in the Sparkhill, Humber Flood Risk Area.	No likely significant effect – Sparkhill (Birmingham) is remote from hydrologically sensitive European sites and this is simply an awareness raising initiative
0203804027	By 2027, the Environment Agency and Birmingham City Council, Solihull Metropolitan Borough Council, Warwickshire County Council, Worcestershire County Council, North Worcestershire Water Management and partners will work together to identify and deliver, if viable, green and blue infrastructure improvements, natural flood management and/or other suitable alleviation measures in the River Cole Catchment to provide flood risk and environmental benefits for communities at risk of flooding, including in the Sparkhill, Humber Flood Risk Area.	No likely significant effect – The area identified as the River Cole catchment in this measure is remote from hydrologically sensitive European sites such that the alleviation measures will not affect European sites.
0203804034	Work with key service and infrastructure providers to raise awareness of flood risk to their assets and to encourage them to develop plans in Sparkhill to increase preparedness and manage flood risk	No likely significant effect – Sparkhill (Birmingham) is remote from hydrologically sensitive European sites and this measure is solely concerned with awareness raising

**Table 65. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Stainforth Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104013	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences, under the Isle of Axholme Strategy in Stainforth to inform future flood risk management in the Stainforth, Humber Flood Risk Area.	No likely significant effect – Stainforth is relatively remote from hydrologically sensitive European sites being approximately 16km upstream of the Humber Estuary SAC/SPA/Ramsar site and this measure is simply a commitment to consider the implications of climate change.
0204004038	By 2027, the Environment Agency will continue to invest in improving and maintaining existing flood risk management assets to an agreed standard of protection whilst taking into account climate change impacts in Doncaster to reduce the risk of flooding in the Stainforth, Humber Flood Risk Area.	No likely significant effect – Stainforth is relatively remote from hydrologically sensitive European sites being approximately 16km upstream of the Humber Estuary SAC/SPA/Ramsar site and this is a fairly general commitment to continue investing in existing flood defences.

**Table 66. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Thorne and Moorends Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104014	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences, under the Isle of Axholme Strategy in Thorne and Moorends to inform future flood risk management in the Thorne and Moorends, Humber Flood Risk Area.	No likely significant effect – Thorne Moor SAC and Thorne & Hatfield Moors SPA are c. 1km east of this Flood Risk Area. However, this measure is simply a commitment to consider the implications of climate change.

Measure ID	Measure	Likely Significant Effects on European sites
0204004037	By 2027, the Environment Agency will continue to invest in improving and maintaining existing flood risk management assets to an agreed standard of protection whilst taking into account climate change impacts in Doncaster to reduce the risk of flooding in the Thorne and Moorends, Humber Flood Risk Area.	No likely significant effect, but down-the-line HRA required – Thorne Moor SAC and Thorne & Hatfield Moors SPA are c. 1km east of this Flood Risk Area. This measure is simply a general commitment to continue investing in the existing defences. Depending on where these defences are located consideration of potential drainage impacts on the SAC may be required as part of down-the-line HRA before any improvements to defences are consented.

**Table 67. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Thorngumbald Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204304050	By 2027, Environment Agency and East Riding of Yorkshire Council (Including Yorkshire Water) will work in partnership to investigate options for more effective asset management and ownership as well as opportunities to deliver flood resilience improvements in Thorngumbald to improved asset management in the Thorngumbald, Humber Flood Risk Area.	No likely significant effect – Thorngumbald is c. 3km north-east of the River Humber and Humber Estuary SAC/SPA/Ramsar site. However, this measure is simply a commitment to consider more effective asset management and to deliver flood resilience (i.e. protecting properties from flooding rather than affecting flood defences along the river)

**Table 68. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Todmorden Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204104024	By 2027, the Environment Agency and Calderdale Council will invest in flood risk improvement schemes in Walsden to reduce the risk of flooding and manage coastal change in the Todmorden, Humber Flood Risk Area.	No likely significant effect but down-the-line HRA required – Walsden is 270m west of South Pennine Moors SAC/SPA at its closest. However it is understood this measure relates to Walsden Water in which case there would be no hydrological link to the moors. However, due to the relative potential proximity of works to the Moors down-the-line HRA may be required (depending on the nature and timing of works) for individual schemes before they are consented due to the potential for construction related disturbance to the South Pennine Moors SPA.

**Table 69. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the West Bridgford Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0201104008	Between 2021 and 2027, the Environment Agency will assess the potential impacts of climate change, including on the standard of protection provided by flood defences in West Bridgford to inform future flood risk management in the West Bridgford, Humber Flood Risk Area.	No likely significant effect – West Bridgford (Nottingham) is remote from hydrologically sensitive European sites and this measure is simply concerned with considering the implications of climate change
0201104017	Between 2021 and 2027, the Environment Agency will investigate options to renew assets in Silverdale to reduce flood risk along the Right Bank of the River Trent through Nottingham in the West Bridgford, Humber Flood Risk Area.	No likely significant effect – West Bridgford (Nottingham) is remote from hydrologically sensitive European sites (although the River Trent ultimately drains into the Humber Estuary SAC/SPA/Ramsar site c. 76km downstream) and this measure is simply a general commitment to consider renewing assets

**Table 70. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the York Flood Risk Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204404114	Investigate options for flood risk management scheme on the River Ouse & Foss Tributaries in York District to develop and deliver projects to reduce flood risk.	No likely significant effect – the River Ouse at York ultimately drains into the Humber Estuary SAC/SPA/Ramsar site but that is c. 29km downstream and this measure is simply a general commitment to consider options.
0204404112	Investigate options for flood risk management scheme on the River Ouse in York District to develop and deliver projects to reduce flood risk	No likely significant effect – the River Ouse at York ultimately drains into the Humber Estuary SAC/SPA/Ramsar site but that is c. 29km downstream and this measure is simply a general commitment to consider options.

**Table 71. Screening table showing the Test of Likely Significant Effects results for measures contained within the Humber Flood Risk Management Plan for the Strategic Area: Humber Estuary Strategic Area**

Measure ID	Measure	Likely Significant Effects on European sites
0204204068	By 2027, the Environment Agency and other local authorities will develop a flood risk management strategy for managing tidal flood risk in the estuary and tidal rivers in Humber to manage the impact of tidal flood risk and impact of climate change in the Humber Estuary Strategic Area.	<p>No likely significant effects – ongoing measure, already consented – down the line HRA required. This ongoing measure is a desk based activity that provides the commitment to develop a flood risk management strategy for managing tidal flood risk in the estuary and tidal rivers in Humber to manage the impact of tidal flood risk and impact of climate change in the Humber Estuary Strategic Area. No on the ground works are committed to in this measure. Further, as part of the adoption process for the strategy, HRA will be undertaken. Therefore no adverse impact on European sites will occur.</p> <p>This measure is a reference to development of the Humber 2100+ Strategy. The measure can be screened out because it is just a commitment to produce the Humber 2100+ Strategy. A commitment to produce a strategy will not have an LSE as the process of producing an FRMS <u>is</u> a desk-based activity. Individual Humber 2100+ measures/interventions may pose LSE depending on what they intend to do, but (as Natural England note) for that reason it will require, and have, its own HRA. The Strategy is in its early stages. It is currently at Step 1, which will last until late 2023, agreeing a ‘present day baseline’ and then developing future baselines. Actual measures will not be developed until Step 3.</p>

Measure ID	Measure	Likely Significant Effects on European sites
0204204067	By 2027, the Environment Agency will undertake strategic monitoring and mapping works (including bathymetry, LIDAR, wave monitoring, habitat monitoring) to inform future revenue and capital programmes in Humber to understand and manage the risk of flooding in the Humber Estuary Strategic Area.	No likely significant effects – ongoing measure, already consented this ongoing measure is a desk based activity that provides the commitment to undertake strategic monitoring and mapping works (including bathymetry, LIDAR, wave monitoring, habitat monitoring) to inform future revenue and capital programmes. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.
0213704052	Between 2021 and 2027, the Environment Agency and Nottinghamshire County Council and North Lincolnshire Council will work with key stakeholders to understand the impacts of the Humber Strategy in Nottinghamshire and North Lincolnshire to better manage flood risk in the Humber Estuary Strategic Area.	No likely significant effects – ongoing measure, already consented this ongoing measure is a desk based activity that provides the commitment to work with key stakeholders to understand the impacts of the Humber Strategy in Nottinghamshire and North Lincolnshire to better manage flood risk. No on the ground works are committed to in this measure. Therefore no adverse impact on European sites will occur.



## 5. Other plans and projects

- 5.1 This section covers potential for effects in combination with other plans and projects. While the potential for the FRMP to occur 'in combination' with other FRMPs was considered for inclusion, each FRMP is specific to a relatively hydrologically self-contained River Basin District, meaning that potential for effects in combination with each other generally only exists where a European site straddles multiple RBDs. In this case the Humber Estuary SPA/Ramsar and the Greater Wash SPA, straddle the boundary between the Humber FRMP and Anglian FRMPs. However, no mechanism has been identified for the actual measures in this FRMP (rather than any schemes that may emerge down-the-line) to operate in combination with those in the other FRMPs.
- 5.2 Natural England suggested inclusion of Diffuse Water Pollution Plans in the 'in combination' assessment of FRMP HRAs. Diffuse Water Pollution Plans are environmentally positive and intended to reduce diffuse pollution through fairly broad measures such as 'influencing management of farm infrastructure such as farm tracks, yards, buildings etc' through agri-environment schemes and similar. As such, no adverse likely significant effects or conflicts are expected to arise with the FRMP HRAs.
- 5.3 Potential in combination effects with Minerals and Waste Local Plans were also considered. However, Waste Local Plans are rarely technology-specific and potential impacts depend very much on the type of facility the market decides to bring forward on a given allocated site, or within a broad area of search where these exist. Minerals excavation can affect hydrologically sensitive European sites through dewatering for example. However, many minerals allocations are extensions to existing consented facilities to enable the site to be worked for longer (rather than to enable a net increase in consented extraction) and whose acceptability of effects on European sites are kept under review through the minerals planning authorities' Review of Consents process as required by the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, many Minerals Plans include 'areas of search' for minerals rather than making specific allocations, leaving the market to bring forward proposals at the planning application level. As such, no specific likely significant effects in combination with the FRMP measures have been identified.

### Local Plans

- 5.4 The delivery of c. 610,000 dwellings to 2030 across the Humber River Basin District will result in the potential for a range of likely significant effects on the European sites surrounding the sub-region. Potential impact pathways include recreational pressure, a potential for increased atmospheric pollution from an increase in traffic on the road network close to European sites, possible loss of functionally-linked habitat for SPAs (depending on where the development takes place) and water quality impacts on European sites. Depending on where construction takes place direct disturbance impacts on SPA birds could also occur. The Northern Powerhouse is a government-

backed initiative to help improve the economic prospects of Northern cities. The project combines the Northern Powerhouse Investment Fund, the Northern Powerhouse Partnership, the European Regional Development Fund and Local Enterprise Partnerships (LEPS).

- 5.5 This section focusses only on hydrologically sensitive European sites and on the main European sites where adverse effects from residential and employment development have been identified in Local Plan HRAs. In this RBD the European sites most identified to be at risk from housing and employment growth in Local Plan HRAs are the popular coastal sites in the north-west with regard to recreational disturbance of SPA birds and potential for damage of SAC habitats, particularly the Flamborough & Filey Coast SPA/Ramsar and the Humber Estuary SAC, SPA and Ramsar. To this end, The Humber Nature Partnership has been managing recreation in the Humber Estuary and undertaking a number of studies investigating recreational disturbance in the area. Some inland wetland sites in the RBD, notably Cannock Chase SAC, but also including Strensall Common SAC near York, are also considered to be highly sensitive to recreational pressure and a multi-authority mitigation strategy has been devised by the local planning authorities surrounding that Cannock Chase SAC while York Council has been developing recreation mitigation proposals for Strensall Common SAC.
- 5.6 The Humber Estuary, and the Lower Derwent Valley SPA/Ramsar, are also vulnerable to loss of functionally-linked habitat for waterfowl and waders outside the SPA boundary and this is discussed, and mitigation strategies to be applied in determining planning applications identified, in various Local Plan HRAs across the RBD. The Humber Estuary SPA/Ramsar has a specific mitigation strategy devised to specifically identify areas of functionally-linked habitat loss and ensure it is offset at a strategic level. The same risk of loss of functionally-linked habitat also applies to several inland hydrologically sensitive European sites in the RBD such as the North Pennine Moors SPA, Peak District Moors SPA and Thorne & Hatfield Moors SPA.
- 5.7 Another key anthropological pressure relating to European sites in the RBD is excessive nitrogen and/or phosphorus inputs, particularly from agriculture and also from treated sewage effluent. In advice to local planning authorities in March 2022 Natural England flagged that the following European sites of relevant to the RBD were suffering from excessive nutrients leading to eutrophication: Hornsea Mere SPA, Peak District Dales SAC, River Mease SAC.
- 5.8 However, it is considered that the nature of the FRMP is such that no in combination effects will arise between adoption of the FRMP and delivery of housing and associated development across the sub-region. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect European sites to be incorporated at further planning tiers as each scheme is devised.

## River Basin Management Plans

- 5.9 River Basin Management Plans (RBMPs) describe the challenges that threaten the water environment and how these challenges can be managed and funded. The Humber FRMP covers the same area as the Humber River Basin Management Plan.
- 5.10 The 2022 RBMP sets out a series of measures to bring about improvements in the waterbodies covered by the RBMP. By definition, the measures in the RBMP are positive and includes the following initiatives: partnership working with farmers and land managers, sustainable management of water resources, restoring rivers and removing man-made barriers to fish migration and controlling invasive non-native species.
- 5.11 The RBMPs generally include projects that improve the water environment, for example by:
- enhancing and restoring rivers and floodplains
  - creating sustainable drainage
  - cleaning up metal pollution
  - improving habitats and water quality by addressing diffuse pollution issues
  - adapting weirs to provide fish passage
  - involving the community
  - using existing regulations to tackle agricultural and rural land pollution, such as lagoon construction
- 5.12 Since the measures within RBMPs are positive and are often necessary to restore freshwater aquatic European sites to favourable condition, there is no mechanism for them to have a negative effect on European sites in combination with the measures in the FRMP.

## Shoreline Management Plans and Local Flood Risk Management Plans

- 5.13 SMPs provide a policy context for shoreline/coastal zone management and development. As acknowledged throughout this document, SMPs and the Coastal Strategies that result from them often result in adverse effects on the integrity of European sites through a combination of coastal squeeze, loss of functionally-linked land for SPA/Ramsar birds, direct habitat loss due to defence footprint and changes to long-shore sediment transport and other aspects of natural sediment dynamics. They also present opportunities for positive effects on European sites if opportunities for managed realignment are included that will enable a more natural coastline to be established.
- 5.14 The following SMPs apply to the Humber RBD were considered for in-combination impacts:
- SMP 2 The Tyne to Flamborough Head (North East)
  - SMP 3 Flamborough Head to Gibraltar Point

- 5.15 The assessments for any potential in-combination impacts between these plans and the measures contained within the Humber FRMP were considered with regards to spatial proximity and/or hydrological and/or hydrographical connectivity. No in-combination likely significant effects were identified in respect of the policies set out in the plans because the FRMP essentially draws upon measures in the SMP and subsequent Coastal Strategies for its measures in the coastal environment.
- 5.16 Similarly, Local Flood Risk Management Plan measures for relevant areas within the River Basin District have been included within the FRMP so there is no potential for in combination effects as the same measures are contained in both sets of plans.

## **Water Resource Management Plans**

- 5.17 Yorkshire Water, South Staffordshire Water and Severn Trent Water have both produced Water Resource Management Plans. These set out the water supply strategy for their areas and could therefore have negative effects on European sites in their own right. For example, the River Trent is a major source of potable water and ultimately drains into the Humber Estuary SAC/SPA/Ramsar site. The River Mease SAC can also be affected by changes in abstraction from the River Trent.
- 5.18 However, Water Resource Management Plans are required to have their own HRAs undertaken. The HRAs for each of the latest adopted WRMPs considered whether their future supply strategy to meet water needs would affect European sites and it was concluded that the supply needs of their areas could be met without an adverse effect on the integrity of European sites, primarily through a combination of improved water efficiency measures and bringing new water supply areas into consideration that do not result in increased abstraction from European sites. As such, there would be no in combination effect with the FRMPs.
- 5.19 In addition to the WRMP, the water companies are also producing Drainage and Wastewater Management Plans (DWMP). However, those plans have not yet been published and therefore cannot be included in this assessment.

## **Drought Plans, Permits and Orders**

- 5.20 As discussed in the previous chapter, the Humber RBD encompasses European sites that are sensitive to a wide range of anthropogenic pressures, including hydrology, water quality, recreational pressure, coastal squeeze and others. Multiple simultaneously acting impacting pathways can compound negative impacts on qualifying habitats and species.
- 5.21 For example, water companies, under their duty of delivering potable water to households and businesses, can apply for drought permits, enabling them to abstract water beyond existing abstraction consents for an agreed period of time. Granting of drought periods has the potential for negative environmental impacts, particularly in European sites that are already subject to existing unfavourable flow conditions or water levels, including the River Mease SAC. While most measures included in the FRMP are likely to be positive for European sites by renaturalising hydrological function, inadequately planned or sited natural flood management and hard defence

structures have the potential to negatively interact with Environment Agency Drought Orders and water company Drought Permits.

- 5.22 Drought conditions will also impose further pressures on designated sites such as by reducing water quality (reduced flows would typically result in higher nutrient concentrations, exacerbating the impact of treated sewage effluent) and water flow. In addition, climate change has the potential to increase the frequency and severity of drought conditions. Drought Plan Orders and Permits would compound drought issues and operate in-combination with impact pathways associated with the FRMP. However, drought plans will generally only operate at times of low water levels and low rainfall, which is the opposite scenario to when the majority of FRMP measures will be active.
- 5.23 Notwithstanding this, Drought Plans of water companies are subject to their own assessment process including HRA. This ensures that potential adverse effects on the integrity of European sites are adequately mitigated or, where this cannot be achieved, suitable compensation is provided. Overall, given that the Drought Plans of water companies undergo robust HRA appraisal, no in-combination effects with the FRMP will occur.

## Environment Agency National Drought Plan

- 5.24 The potential for in-combination effects of the Humber FRMP with the Environment Agency's National Drought Action Plan has been assessed and no in-combination impacts are anticipated. However, this should be considered further at the time of any potential implementation of drought management measures in liaison with the Environment Agency, particularly regarding local actions in the supply and water source catchment areas utilised by Humber Water and other water companies in the Humber region. Moreover, drought plans will generally only operate at times of low water levels and low rainfall, which is the opposite scenario to when the majority of FRMP measures will be active.

## Lagoon Hull

- 5.25 Lagoon Hull is a proposed £1.5 billion development on the Humber Estuary foreshore between Hessle and Kingston upon Hull, in the East Riding of Yorkshire, England. The proposed lagoon would be formed from a stone causeway and will provide an outer lock gate in the Humber Estuary which would effectively dam the River Hull, making it a non-tidal waterway. The 11km causeway would also provide a dual carriageway from the A63 at Hessle to Hull Docks.
- 5.26 At time of writing this scheme is purely a proposal and does not have planning consent. It is therefore not possible to assess its implications in detail. However, in order to secure planning consent, it will need to either demonstrate through project-level assessment that there will be no adverse effects on the integrity of the Humber Estuary SAC/SPA/Ramsar site or that there were such effects but Imperative Reasons of Overriding Interest why the project should nonetheless proceed, and no alternatives to delivering its objectives.

5.27 Although the Humber FRMP has a single measure in Hessle and several measures in Kingston-on-Hull, none have been screened in as likely to have a significant effect because they do not involve specific commitments to implementing changed flood defences in these areas.

## Humber Pipelines

5.28 There are several projects across the Humber RBD that include pipelines namely:

- Humber Low Carbon Pipelines
- Yorkshire and Humber CCS Cross Country Pipeline
- River Humber Gas Pipeline Replacement Project

5.29 Humber low carbon pipelines project aims to deliver a new onshore network of pipelines to transport captured carbon emissions from the regions industrial emitters for safe storage in the North Sea. It will also transport hydrogen from where it is generated to where it is used assisting in transitioning the UK to a low-carbon economy. The Yorkshire to Humber CCS Cross Country Pipeline is also a carbon sequestration pipeline moving carbon dioxide from across the region again to permanent storage in the North Sea. Whereas the River Humber gas pipeline replacement comprises construction of a replacement section of gas transporter pipeline crossing under the Humber Estuary between the existing Goxhill Above Ground Installation on the south bank of the estuary within North Lincolnshire to the Paull Above Ground Installation on the north bank of the estuary within the East Riding of Yorkshire. The CCS Cross Country Pipeline and River Humber Gas Pipeline Replacement Project have both undertaken an HRA to determine their effects both alone and in-combination and were deemed not to present an adverse impact on European sites. At time of writing Humber Low Carbon Pipelines is a proposal and does not have planning consent. It is therefore not possible to assess its implications in detail. However, in order to secure planning consent, it will need to either demonstrate through project-level assessment that there will be no adverse effects on the integrity of the Humber Estuary SAC/SPA/Ramsar site or that there were such effects but Imperative Reasons of Overriding Interest why the project should nonetheless proceed, and no alternatives to delivering its objectives.

5.30 Measures relevant to the Humber Estuary SPA/SAC/Ramsar site or sites further inland which may be affected by the pipelines have not been identified to pose negative implications due to their broad and non-specific nature or because they are measures already committed in other plans that are included in the FRMP for completeness and which the FRMP will not influence.

## South Humber Bank Energy Centre

5.31 The South Humber Bank Energy Centre (SHBEC) is a new power station between Immingham Docks and Grimsby. The power station will utilise 753,500 tons of refuse derived fuel per year to produce enough electricity generated through steam turbines, to supply the needs of approximately 100,000 homes. The SHBEC will be build on land which is deemed functionally linked to the Humber Estuary European sites and

therefore required mitigation which has been met strategically through the North East Lincolnshire Local Plan (Policy 9) and therefore it could be concluded alone and in combination that there would be no adverse effect on any European site

5.32 Measures relevant to the Humber Estuary SPA/SAC/Ramsar site or sites further inland which may be affected by the pipelines have not been identified to pose negative implications due to their broad and non-specific nature or because they are measures already committed in other plans that are included in the FRMP for completeness and which the FRMP will not influence.

## Immingham Eastern Ro-Ro Terminal

5.33 Associated British Ports are proposing to construct a new roll-on/roll-off facility within the Immingham Docks Port. The new facility will comprise, on the marine side, new jetty infrastructure with up to four berths and on the land side, improved hardstanding, a Terminal building and an internal site bridge which will cross over existing port infrastructure, including an Associated British Ports controlled railway track. It is anticipated that the completed project, with four berths, will be capable of handling in the region of 800,000 units per year.

5.34 At the time of writing, this scheme is a proposal and does not have planning consent. It is therefore not possible to assess its implications in detail. However, in order to secure planning consent, it will need to either demonstrate through project-level assessment that there will be no adverse effects on the integrity of the Humber Estuary SAC/SPA/Ramsar site or that there were such effects but Imperative Reasons of Overriding Interest why the project should nonetheless proceed, and no alternatives to delivering its objectives.

5.35 Measures relevant to the Humber Estuary SPA/SAC/Ramsar site or sites further inland which may be affected by the pipelines have not been identified to pose negative implications, due to their broad and non-specific nature or because they are measures already committed in other plans that are included in the FRMP for completeness and which the FRMP will not influence.

## High Speed 2

5.36 High Speed 2 Phase 2b would traverse the River Mease SAC using a viaduct and also cross Gilwiskaw Brook upstream of the SAC boundary, which is part of the headwaters of the SAC. Until such time as environmental assessments are complete and submitted, it is not possible to assess the impacts of the scheme in detail. Clearly there is potential for effects on the SAC in terms of water quality impacts, disruption of fish passage/shading and the intention of Natural England to restore natural hydrology to the SAC including naturalising the alignment of Gilwiskaw Brook upstream. However, there are well-tried methods for addressing all these issues in railway construction and any impacts will need to be addressed before the scheme will receive assent.

5.37 However, the measures relevant to the River Mease SAC in the FRMP have not been identified to pose negative implications for the SAC and several have been identified

to present opportunities (depending on how they are delivered and the nature of specific schemes) to aid the objective of restoring natural conditions at the SAC. As such, no potential for a likely significant effect in combination with HS2 has been identified.

## Conclusion

5.38 In summary, it is considered that the nature of the FRMP is such that no in combination effects will arise between adoption of the FRMP and delivery of housing and associated development across the sub-region. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect European sites to be incorporated at further planning tiers as each scheme is devised.



## 6. Conclusion

6.1 All European sites have been screened out of further assessment. There are no likely significant effects on any European site as a result of the Humber Flood Risk Management Plan 2021-2027, either alone or in combination with other projects and plans. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect European sites to be incorporated at further planning tiers as each scheme is devised. It should be noted that notwithstanding references in the FRMP, scheme level HRAs will be undertaken as part of the business case for all schemes, and many schemes will also need planning consent, which will also be accompanied by an HRA, thus ensuring legal requirements are met.

# Appendix A Information on European Sites

## A.1 Asby Complex SAC

### Conservation Objectives

6.2 With regard to the SAC<sup>26</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.3 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

### Qualifying Features

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; Calcium-rich nutrient-poor lakes, lochs and pools
- European dry heaths
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Petrifying springs with tufa formation (*Cratoneurion*); Hard-water springs depositing lime\*
- Alkaline fens; Calcium-rich springwater-fed fens
- Limestone pavements
- Geyer's whorl snail *Vertigo geyeri*
- Slender green feather-moss *Drepanocladus* (*Hamatocaulis*) *vernicosus*

## Environmental Vulnerabilities

6.4 With regards to this SAC's SIP<sup>27</sup> the following are threats and pressure listed for the site:

- change in land management
- hydrological Changes
- inappropriate stock feeding
- water pollution
- invasive species
- fish stocking
- air pollution: risk of atmospheric nitrogen deposition
- public access/disturbance

6.5 The 2019 Supplementary Advice to the Conservation Objectives<sup>28</sup> (SACO) goes into more detail on these vulnerabilities.

## A.2 Cannock Chase SAC

### Conservation Objectives

6.6 With regard to the SAC<sup>29</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.7 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

### Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths

### Environmental Vulnerabilities

6.8 With regards to this SAC's SIP<sup>30</sup> the following are threats and pressure listed for the site:

- undergrazing
- drainage
- hydrological changes
- disease

- air pollution: risk of atmospheric nitrogen deposition
- wildfire/arson
- invasive species

6.9 The 2020 Supplementary Advice to the Conservation Objectives<sup>31</sup> (SACO) goes into more detail on these vulnerabilities.

## A.3 Craven Limestone Complex SAC

### Conservation Objectives

6.10 With regard to the SAC<sup>32</sup> and the natural habitats and/or species for which the site has been designated ('the Qualifying Features' listed below);

6.11 Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.

6.12 Subject to natural change, to maintain or restore:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

### Qualifying Features

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; Calcium-rich nutrient-poor lakes, lochs and pools
- Calaminarian grasslands of the *Violetalia calaminariae*; Grasslands on soils rich in heavy metals
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Active raised bogs
- Petrifying springs with tufa formation (*Cratoneurion*); Hard-water springs depositing lime
- Alkaline fens; Calcium-rich springwater-fed fens
- Limestone pavements

- *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes\*
- White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*
- Bullhead *Cottus gobio*
- Lady`s-slipper orchid *Cypripedium calceolus*

## Environmental Vulnerabilities

6.13 With regards to this SAC's SIP<sup>33</sup> the following are threats and pressure listed for the site:

- overgrazing
- water pollution
- changes in species distributions
- hydrological changes
- undergrazing
- inappropriate Weed control
- deer
- climate change
- air pollution: impact of atmospheric nitrogen deposition
- species decline
- feature location/extent/threat condition unknown
- public access/disturbance
- conflicting conservation objectives
- disease
- invasive species
- direct impact from 3<sup>rd</sup> party

6.14 The 2019 Supplementary Advice to the Conservation Objectives<sup>34</sup> (SACO) goes into more detail on these vulnerabilities.

## A.4 Fen Bog SAC

### Conservation Objectives

6.15 With regard to the SAC<sup>35</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.16 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitats

- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

## Qualifying Features

- transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface

## Environmental Vulnerabilities

6.17 With regards to this SAC's SIP<sup>36</sup> the following are threats and pressure listed for the site:

- inappropriate scrub control
- invasive species
- undergrazing
- public access/disturbance
- air pollution: risk of atmospheric nitrogen deposition
- inappropriate ditch management
- wildfire/arson

6.18 The 2019 Supplementary Advice to the Conservation Objectives<sup>37</sup> (SACO) goes into more detail on these vulnerabilities.

## A.5 Flamborough and Filey Coast SPA

### Conservation Objectives

6.19 With regard to the SPA<sup>38</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.20 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features, and,
- the distribution of the qualifying features within the site.

### Qualifying Features

- Black-legged kittiwake *Rissa tridactyla* (Breeding)

## Environmental Vulnerabilities

6.21 With regards to this SPA and others included within the Flamborough and Filey Coast 2015 SIP<sup>39</sup> the following are threats and pressure listed for those sites:

- changes in species distributions
- marine and freshwater fishery
- public access/disturbance
- invasive species

6.22 The 2020 Supplementary Advice to the Conservation Objectives<sup>40</sup> (SACO) goes into more detail on these vulnerabilities.

## A.6 Flamborough Head SAC

### Conservation Objectives

6.23 With regard to the SAC<sup>41</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.24 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats, and
- the supporting processes on which qualifying natural habitats rely

### Qualifying Features

- reefs
- vegetated sea cliffs of the Atlantic and Baltic coasts
- submerged or partially submerged sea caves

### Environmental Vulnerabilities

6.25 With regards to this SAC and others included within the Flamborough and Filey Coast 2015 SIP<sup>42</sup> the following are threats and pressure listed for those sites:

- changes in species distributions
- marine and freshwater fishery
- public access/disturbance
- invasive species

6.26 The 2020 Supplementary Advice to the Conservation Objectives<sup>43</sup> (SACO) goes into more detail on these vulnerabilities.

## A.7 Greater Wash SPA

### Conservation Objectives

6.27 With regard to the SPA<sup>44</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.28 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

- Red-throated diver *Gavia stellata* (Non-breeding)
- Common scoter *Melanitta nigra* (Non-breeding)
- Little gull *Hydrocoloeus minutus* (Non-breeding)
- Sandwich tern *Sterna sandvicensis* (Breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sternula albifrons* (Breeding)

### Environmental Vulnerabilities

6.29 No supplementary advice available.

## A.8 Hatfield Moor SAC

### Conservation Objectives

6.30 With regard to the SAC<sup>45</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.31 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitat
- the structure and function (including typical species) of the qualifying natural habitat
- the supporting processes on which the qualifying natural habitat rely



## Qualifying Features

- degraded raised bogs still capable of natural regeneration

## Environmental Vulnerabilities

6.32 With regards to this SAC and others included within the Thorne and Hatfield Moors 2014 SIP<sup>46</sup> the following are threats and pressure listed for those sites:

- drainage
- inappropriate scrub control
- air Pollution: impact of atmospheric nitrogen deposition
- public access/disturbance
- planning permission: general
- peat extraction
- invasive species

6.33 The 2019 Supplementary Advice to the Conservation Objectives<sup>47</sup> (SACO) goes into more detail on these vulnerabilities.

## A.9 Hornsea Mere SPA

### Conservation Objectives

6.34 With regard to the SPA<sup>48</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.35 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

- Mute swan *Cygnus olor* (Non-breeding)
- Gadwall *Anas strepera* (Non-breeding)

### Environmental Vulnerabilities

6.36 With regards to this SAC's SIP<sup>49</sup> the following are threats and pressure listed for the site:

- water pollution

- siltation
- inappropriate water levels
- public access/disturbance

6.37 The 2019 Supplementary Advice to the Conservation Objectives<sup>50</sup> (SACO) goes into more detail on these vulnerabilities.

## A.10 Humber Estuary SAC

### Conservation Objectives

6.38 With regard to the SAC<sup>51</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.39 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the 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

### Qualifying Features

- Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
- Coastal lagoons
- *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes'); Shifting dunes with marram
- Fixed dunes with herbaceous vegetation ('grey dunes'); Dune grassland
- Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn
- Sea lamprey *Petromyzon marinus*

- River lamprey *Lampetra fluviatilis*
- Grey seal *Halichoerus grypus*

## Environmental Vulnerabilities

6.40 With regards to this SAC<sup>52</sup> and others included within the Humber Estuary 2015 SIP the following are threats and pressure listed for those sites:

- water pollution
- coastal squeeze
- changes in species distributions
- undergrazing
- invasive species
- natural changes to site conditions
- public access/disturbance
- fisheries: fish stocking
- fisheries: commercial marine and estuarine
- direct land take from development
- air pollution: impact of atmospheric nitrogen deposition
- shooting/scaring
- direct impact from third party
- inappropriate scrub control

6.41 The 2019 Supplementary Advice to the Conservation Objectives<sup>53</sup> (SACO) goes into more detail on these vulnerabilities.

## A.11 Humber Estuary SPA and Ramsar

### Conservation Objectives

6.42 With regard to the SPA<sup>54</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.43 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- 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 population of each of the qualifying features, and,
- the distribution of the qualifying features within the site.

## Qualifying Features

6.44 With regards to the SPA the following are reasons for designation:

- Great bittern *Botaurus stellaris* (Non-breeding)
- Great bittern *Botaurus stellaris* (Breeding)
- Common shelduck *Tadorna tadorna* (Non-breeding)
- Eurasian marsh harrier *Circus aeruginosus* (Breeding)
- Hen harrier *Circus cyaneus* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Breeding)
- European golden plover *Pluvialis apricaria* (Non-breeding)
- Red knot *Calidris canutus* (Non-breeding)
- Dunlin *Calidris alpina alpina* (Non-breeding)
- Ruff *Philomachus pugnax* (Non-breeding)
- Black-tailed godwit *Limosa limosa islandica* (Non-breeding)
- Bar-tailed godwit *Limosa lapponica* (Non-breeding)
- Common redshank *Tringa totanus* (Non-breeding)
- Little tern *Sterna albifrons* (Breeding)

6.45 With regards to the Ramsar<sup>55</sup> the following are reasons for designation:

Ramsar Criterion 1

6.46 The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.

6.47 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 *Spartina anglica* and annual glasswort *Salicornia* communities. Low to mid marsh communities are mostly represented by sea aster *Aster tripolium*, common saltmarsh grass *Puccinellia maritima* and sea purslane *Atriplex portulacoides* communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch *Elytrigia atherica* (*Elymus pycnanthus*) saltmarsh

community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed *Phragmites australis* fen and sea club rush *Bolboschoenus maritimus* swamp with the couch grass *Elytrigia repens* (*Elymus repens*) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.

### Ramsar Criterion 3

6.48 The Humber Estuary Ramsar site supports a breeding colony of grey seals *Halichoerus grypus* at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad *Bufo calamita*

### Ramsar Criterion 5 – assemblages of international importance

6.49 153,934 non-breeding waterfowl

### Ramsar Criterion 6 – species/populations occurring at levels of international importance

- Eurasian golden plover *Pluvialis apricaria* – 17,996 individuals (passage) representing average of 2.2% of the population
- Eurasian golden plover – 30,709 individuals (wintering) representing average of 3.8% of the population
- Red knot *Calidris canutus* – 18,500 individuals (passage) representing average of 4.1% of the population
- Red knot – 28,165 individuals (wintering) representing average of 6.3% of the population
- Dunlin *Calidris alpina* – 20,269 individuals (non-breeding) representing average of 1.5% of the population
- Dunlin – 22,222 individuals (wintering) representing average 1.7% of the population
- Black-tailed godwit *Limosa limosa* – 915 individuals (passage) representing average of 2.6% of the population
- Black-tailed godwit – 1,113 individuals (wintering) representing average of 3.2% of the population
- Common redshank *Tringa totanus* – 7,462 individuals (passage) representing 5.7% of the population
- Common redshank – 4,632 individuals (wintering) representing average of 3.6% of the population
- Common shelduck *Tadorna tadorna* – 4,464 individuals (wintering) representing average of 1.5% of the population

### Ramsar Criterion 8

6.50 The Humber Estuary acts as an important migration route for both river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus* between coastal waters and their spawning areas.

## Environmental Vulnerabilities

6.51 With regards to this SPA<sup>56</sup> and others included within the Humber Estuary 2015 SIP the following are threats and pressure listed for those sites:

- water pollution
- coastal squeeze
- changes in species distributions
- undergrazing
- invasive species
- natural changes to site conditions
- public access/disturbance
- fisheries: fish stocking
- fisheries: commercial marine and estuarine
- direct land take from development
- air pollution: impact of atmospheric nitrogen deposition
- shooting/scaring
- direct impact from third party
- inappropriate scrub control

6.52 The 2019 Supplementary Advice to the Conservation Objectives<sup>57</sup> (SACO) goes into more detail on these vulnerabilities.

## A.12 Ingleborough Complex SAC

### Conservation Objectives

6.53 With regard to the SAC<sup>58</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.54 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats
- The supporting processes on which qualifying natural habitats rely

## Qualifying Features

- *Juniperus communis* formations on heaths or calcareous grasslands; Juniper on heaths or calcareous grasslands
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Blanket bogs
- Petrifying springs with tufa formation (*Cratoneurion*); Hard-water springs depositing lime\*
- Alkaline fens; Calcium-rich springwater-fed fens
- Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks
- Limestone pavements
- *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes

## Environmental Vulnerabilities

6.55 With regards to this SAC's SIP<sup>59</sup> the following are threats and pressure listed for the site:

- hydrological changes
- air pollution: impact of atmospheric nitrogen deposition
- overgrazing
- disease
- change in land management
- invasive species
- undergrazing
- drainage
- deer
- climate change
- forestry and woodland management

6.56 The 2019 Supplementary Advice to the Conservation Objectives<sup>60</sup> (SACO) goes into more detail on these vulnerabilities.

## A.13 Lower Derwent Valley SAC

### Conservation Objectives

6.57 With regard to the SAC<sup>61</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.58 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

### Qualifying Features

- lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)
- alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae); Alder woodland on floodplains\*
- Otter *Lutra lutra*

### Environmental Vulnerabilities

6.59 With regards to this SAC and others included within the Lower Derwent Valley 2014 SIP<sup>62</sup> the following are threats and pressure listed for those sites:

- hydrological Changes
- drainage
- public access/disturbance
- invasive species
- undergrazing
- inappropriate scrub control
- air pollution: impact of atmospheric nitrogen deposition

6.60 The 2019 Supplementary Advice to the Conservation Objectives<sup>63</sup> (SACO) goes into more detail on these vulnerabilities.



## A.14 Lower Derwent Valley SPA and Ramsar

### Conservation Objectives

6.61 With regard to the SPA<sup>64</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.62 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

6.63 With regards to the SPA the following are reasons for designation:

- Bewick's swan *Cygnus columbianus bewickii* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Eurasian teal *Anas crecca* (Non-breeding)
- Northern shoveler *Anas clypeata* (Breeding)
- European golden plover *Pluvialis apricaria* (Non-breeding)
- Ruff *Philomachus pugnax* (Non-breeding)

6.64 With regards to the Ramsar<sup>65</sup> the following are reasons for designation:

Ramsar Criterion 1

6.65 The site represents one of the most important examples of traditionally managed species-rich alluvial flood meadow habitat remaining in the UK. The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin.

Ramsar Criterion 2

6.66 The site has a rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates as well as a leafhopper, *Cicadula ornata* for which Lower Derwent Valley is the only known site in Great Britain.

Ramsar Criterion 4

6.67 The site qualifies as a staging post for passage birds in spring. Of particular note are the nationally important numbers of Ruff, *Philomachus pugnax* and Whimbrel, *Numenius phaeopus*.

Ramsar Criterion 5 – assemblages of international importance

6.68 31,942 waterfowl occurring in the winter

Ramsar Criterion 6 – species/populations occurring at levels of international importance

6.69 Species with peak counts in the winter:

- Eurasian wigeon *Anas penelope* – 8,350 individuals representing average of 2% of the GB population
- Eurasian teal *Anas crecca* – 4,200 individuals representing average of 1% of the population

## Environmental Vulnerabilities

6.70 With regards to this SPA and others included within the Lower Derwent Valley 2014 SIP<sup>66</sup> the following are threats and pressure listed for those sites:

- hydrological Changes
- drainage
- public access/disturbance
- invasive species
- undergrazing
- inappropriate scrub control
- air pollution: impact of atmospheric nitrogen deposition

6.71 The 2019 Supplementary Advice to the Conservation Objectives<sup>67</sup> (SACO) goes into more detail on these vulnerabilities.

## A.15 Malham Tarn Ramsar

### Qualifying Features<sup>68</sup>

Ramsar Criterion 1

6.72 Contains the highest marl lake in Britain, along with acidophilous bog, calcareous fen and soligenous mire.

Ramsar Criterion 2

6.73 Supports the nationally rare alpine *bartsia* *Bartsia alpina* and narrow small reed *Calamagrostis stricta* and seven nationally scarce species. Supports five listed British Red Data Book invertebrates including the caddis fly *Agrypnia crassicornis*.

## A.16 Midland Meres and Mosses Phase 1 Ramsar

### Qualifying Features<sup>69</sup>

Ramsar Criterion 1

6.74 The site comprises a diverse range of habitats from open water to raised bog.

Ramsar Criterion 2

6.75 Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).

## A.17 Midland Meres and Mosses Phase 2 Ramsar

### Qualifying Features<sup>70</sup>

Ramsar Criterion 1

6.76 The site comprises a diverse range of habitats from open water to raised bog.

Ramsar Criterion 2

Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane *Cicuta virosa* and, elongated sedge *Carex elongata*. Also present are the nationally scarce bryophytes *Dicranum affine* and *Sphagnum pulchrum*. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth *Glyphipteryx lathamella*, the caddisfly *Hagenella clathrata* and the sawfly *Trichiosoma vitellinae*.

## A.18 North Pennine Dales Meadows SAC

### Conservation Objectives

6.77 With regard to the SAC<sup>71</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.78 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

## Qualifying Features

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Mountain hay meadows

## Environmental Vulnerabilities

6.79 With regards to this SAC's SIP<sup>72</sup> the following are threats and pressure listed for the site:

- fertiliser use
- change in land management
- air pollution: impacts of atmospheric nitrogen deposition
- change in land management
- inappropriate cutting/mowing
- changes in species distributions
- inappropriate CSS/ESA prescription
- drainage
- overgrazing
- undergrazing
- hydrological changes
- inappropriate weed control
- invasive species
- direct impact from third party

6.80 The 2019 Supplementary Advice to the Conservation Objectives<sup>73</sup> (SACO) goes into more detail on these vulnerabilities.

## A.19 North Pennine Moors SAC

### Conservation Objectives

6.81 With regard to the SAC<sup>74</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.82 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species

- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

## Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths
- *Juniperus communis* formations on heaths or calcareous grasslands; Juniper on heaths or calcareous grasslands
- Calaminarian grasslands of the *Violetalia calaminariae*; Grasslands on soils rich in heavy metals
- Siliceous alpine and boreal grasslands; Montane acid grasslands
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- Blanket bogs
- Petrifying springs with tufa formation (*Cratoneurion*); Hard-water springs depositing lime
- Alkaline fens; Calcium-rich springwater-fed fens
- Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*); Acidic scree
- Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks
- Siliceous rocky slopes with chasmophytic vegetation; Plants in crevices on acid rocks

## Environmental Vulnerabilities

6.83 With regards to this SAC<sup>75</sup> and others included within the North Pennines Group 2014 SIP the following are threats and pressure listed for those sites:

- low breeding success/poor recruitment
- managed rotational burning
- inappropriate grazing
- change in land management
- disease
- hydrological changes
- game management: grouse moors
- direct land take from development
- air pollution: risk of atmospheric nitrogen deposition

- fertiliser use
- inappropriate cutting/mowing
- invasive species
- agricultural management practices
- vehicles
- vehicles: illicit
- public access/disturbance
- deer
- feature location/extent/condition unknown
- climate change

6.84 The 2019 Supplementary Advice to the Conservation Objectives<sup>76</sup> (SACO) goes into more detail on these vulnerabilities.

## A.20 North Pennine Moors SPA

### Conservation Objectives

6.85 With regard to the SPA<sup>77</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.86 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

- Hen harrier *Circus cyaneus* (Breeding)
- Merlin *Falco columbarius* (Breeding)
- Peregrine falcon *Falco peregrinus* (Breeding)
- European golden plover *Pluvialis apricaria* (Breeding)

### Environmental Vulnerabilities

6.87 With regards to this SPA<sup>78</sup> and others included within the North Pennines Group 2014 SIP the following are threats and pressure listed for those sites:

- low breeding success/poor recruitment

- managed rotational burning
- inappropriate grazing
- change in land management
- disease
- hydrological changes
- game management: grouse moors
- direct land take from development
- air pollution: risk of atmospheric nitrogen deposition
- fertiliser use
- inappropriate cutting/mowing
- invasive species
- agricultural management practices
- vehicles
- vehicles: illicit
- public access/disturbance
- deer
- feature location/extent/condition unknown
- climate change

6.88 The 2019 Supplementary Advice to the Conservation Objectives<sup>79</sup> (SACO) goes into more detail on these vulnerabilities.

## A.21 North York Moors SAC

### Conservation Objectives

6.89 With regard to the SAC<sup>80</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.90 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

### Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath

- H4030. European dry heaths
- H7130. Blanket bogs\*

## Environmental Vulnerabilities

6.91 With regards to this SAC<sup>81</sup> and others included within the North York Moors 2014 SIP the following are threats and pressure listed for those sites:

- climate change
- air pollution: impact of atmospheric nitrogen deposition
- disease
- invasive species
- managed rotational burning
- planning permission: other mineral and waste
- game management: grouse moors
- changes in species distributions
- agriculture: other
- energy production
- wildfire/arson

6.92 The 2019 Supplementary Advice to the Conservation Objectives<sup>82</sup> (SACO) goes into more detail on these vulnerabilities.

## A.22 North York Moors SPA

### Conservation Objectives

6.93 With regard to the SPA<sup>83</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.94 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- extent and distribution of the habitats of the qualifying features
- structure and function of the habitats of the qualifying features
- supporting processes on which the habitats of the qualifying features rely
- population of each of the qualifying features
- distribution of the qualifying features within the site

### Qualifying Features

- Merlin *Falco columbarius* (Breeding)
- European golden plover *Pluvialis apricaria* (Breeding)



## Environmental Vulnerabilities

6.95 With regards to this SPA<sup>84</sup> and others included within the North York Moors 2014 SIP the following are threats and pressure listed for those sites:

- climate change
- air pollution: impact of atmospheric nitrogen deposition
- disease
- invasive species
- managed rotational burning
- planning permission: other mineral and waste
- game management: grouse moors
- changes in species distributions
- agriculture: other
- energy production
- wildfire/arson

6.96 The 2019 Supplementary Advice to the Conservation Objectives<sup>85</sup> (SACO) goes into more detail on these vulnerabilities.

## A.23 Pasturefields Saltmarsh SAC

### Conservation Objectives

6.97 With regard to the SAC<sup>86</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.98 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats
- the supporting processes on which qualifying natural habitats rely

### Qualifying Features

- inland salt meadows; inland saltmarshes

### Environmental Vulnerabilities

6.99 With regards to this SAC's SIP<sup>87</sup> the following are threats and pressure listed for the site:

- no issues affecting the Natura 2000 feature(s) have been identified on this site

6.100 The 2018 Supplementary Advice to the Conservation Objectives<sup>88</sup> (SACO) goes into more detail on these vulnerabilities.

## A.24 Peak District Dales SAC

### Conservation Objectives

6.101 With regard to the SAC<sup>89</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.102 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

### Qualifying Features

- European dry heaths
- Calaminarian grasslands of the *Violetalia calaminariae*; Grasslands on soils rich in heavy metals
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- Alkaline fens; Calcium-rich springwater-fed fens
- Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*); Base-rich scree
- Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks
- *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes
- White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*
- Brook lamprey *Lampetra planeri*
- Bullhead *Cottus gobio*

### Environmental Vulnerabilities

6.103 With regards to this SAC's SIP<sup>90</sup> the following are threats and pressure listed for the site:

- inappropriate scrub control
- fertiliser use

- water pollution
- inappropriate weirs dams and other structures
- overgrazing
- undergrazing
- inappropriate water levels
- disease
- invasive species
- climate change
- air pollution: impact of atmospheric nitrogen deposition
- vehicles
- forestry and woodland management
- direct impact from 3<sup>rd</sup> party
- feature location/extent/condition unknown
- public access/disturbance

6.104 The 2018 Supplementary Advice to the Conservation Objectives<sup>91</sup> (SACO) goes into more detail on these vulnerabilities.

## **A.25 Peak District Moors (South Pennine Moors Phase 1) SPA**

### **Conservation Objectives**

6.105 With regard to the SPA<sup>92</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.106 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### **Qualifying Features**

- Falco columbarius; Merlin (Breeding)
- A140 Pluvialis apricaria; European golden plover (Breeding)
- A222 Asio flammeus; Short-eared owl (Breeding)

## Environmental Vulnerabilities

6.107 With regards to this SPA and others included within the South Pennine Moors 2014 SIP<sup>93</sup> the following are threats and pressure listed for those sites:

- hydrological changes
- managed rotational burning
- low breeding success/poor recruitment
- inappropriate management practices
- public access/disturbance
- air pollution: impact of atmospheric nitrogen deposition
- wildfire/arson
- vehicles
- overgrazing
- forestry and woodland management
- changes in species distributions
- disease
- undergrazing
- invasive species
- planning permission: general

6.108 The 2019 Supplementary Advice to the Conservation Objectives<sup>94</sup> (SACO) goes into more detail on these vulnerabilities.

## A.26 River Derwent SAC

### Conservation Objectives

6.109 With regard to the SAC<sup>95</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.110 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

## Qualifying Features

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation; Rivers with floating vegetation often dominated by water-crowfoot
- Sea lamprey *Petromyzon marinus*
- River lamprey *Lampetra fluviatilis*
- Bullhead *Cottus gobio*
- Otter *Lutra lutra*

## Environmental Vulnerabilities

6.111 With regards to this SAC's SIP<sup>96</sup> the following are threats and pressure listed for the site:

- physical modification
- water pollution
- invasive species
- change in land management
- water abstraction

6.112 The 2017 Supplementary Advice to the Conservation Objectives<sup>97</sup> (SACO) goes into more detail on these vulnerabilities.

## A.27 Rutland Water SPA

### Conservation Objectives

6.113 With regard to the SPA<sup>98</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.114 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

- Gadwall *Anas strepera* (Non-breeding)
- Northern shoveler *Anas clypeata* (Non-breeding)

## Environmental Vulnerabilities

6.115 With regards to this SPA's SIP<sup>99</sup> the following are threats and pressure listed for the site:

- water abstraction
- inappropriate water levels
- direct impact from 3<sup>rd</sup> party
- invasive species
- water pollution
- planning permission: general
- public access/disturbance
- fisheries: freshwater

6.116 The 2018 Supplementary Advice to the Conservation Objectives<sup>100</sup> (SACO) goes into more detail on these vulnerabilities.

## A.28 Skipwith Common SAC

### Conservation Objectives

6.117 With regard to the SAC<sup>101</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.118 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

### Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths

### Environmental Vulnerabilities

6.119 With regards to this SAC's SIP<sup>102</sup> the following are threats and pressure listed for the site:

- public access/disturbance
- inappropriate scrub control
- drainage

- air pollution: impact of atmospheric nitrogen deposition

6.120 The 2019 Supplementary Advice to the Conservation Objectives<sup>103</sup> (SACO) goes into more detail on these vulnerabilities.

## A.29 South Pennine Moors Phase 2 SPA

### Conservation Objectives

6.121 With regard to the SPA<sup>104</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.122 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features, and,
- the distribution of the qualifying features within the site.

### Qualifying Features

- Merlin *Falco columbarius* (Breeding)
- European golden plover *Pluvialis apricaria* (Breeding)

### Environmental Vulnerabilities

6.123 With regards to this SPA and others included within the South Pennine Moors 2014 SIP<sup>105</sup> the following are threats and pressure listed for those sites:

- hydrological changes
- managed rotational burning
- low breeding success/poor recruitment
- inappropriate management practices
- public access/disturbance
- air pollution: impact of atmospheric nitrogen deposition
- wildfire/arson
- vehicles
- overgrazing
- forestry and woodland management
- changes in species distributions
- disease

- undergrazing
- invasive species
- planning permission: general

6.124 The 2019 Supplementary Advice to the Conservation Objectives<sup>106</sup> (SACO) goes into more detail on these vulnerabilities.

## A.30 South Pennine Moors SAC

### Conservation Objectives

6.125 With regard to the SAC<sup>107</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.126 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

### Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths
- Blanket bogs
- Transition mires and quaking bogs; Very wet mires often identified by an unstable 'quaking' surface
- Old sessile oak woods with Ilex and Blechnum in the British Isles

### Environmental Vulnerabilities

6.127 With regards to this SAC and others included within the South Pennine Moors 2014 SIP<sup>108</sup> the following are threats and pressure listed for those sites:

- hydrological changes
- managed rotational burning
- low breeding success/poor recruitment
- inappropriate management practices
- public access/disturbance
- air pollution: impact of atmospheric nitrogen deposition
- wildfire/arson
- vehicles



- overgrazing
- forestry and woodland management
- changes in species distributions
- disease
- undergrazing
- invasive species
- planning permission: general

6.128 The 2019 Supplementary Advice to the Conservation Objectives<sup>109</sup> (SACO) goes into more detail on these vulnerabilities.

## A.31 Strensall Common SAC

### Conservation Objectives

6.129 With regard to the SAC<sup>110</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.130 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

### Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths

### Environmental Vulnerabilities

6.131 With regards to this SAC's SIP<sup>111</sup> the following are threats and pressure listed for the site:

- public access/disturbance
- inappropriate scrub control
- air pollution: impact of atmospheric nitrogen deposition

6.132 The 2019 Supplementary Advice to the Conservation Objectives<sup>112</sup> (SACO) goes into more detail on these vulnerabilities.

## A.32 Thorne & Hatfield Moors SPA

### Conservation Objectives

6.133 With regard to the SPA<sup>113</sup> and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.134 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- 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 population of each of the qualifying features
- the distribution of the qualifying features within the site

### Qualifying Features

- European nightjar *Caprimulgus europaeus* (Breeding)

### Environmental Vulnerabilities

6.135 With regards to this SPA and others included within the Thorne and Hatfield Moors 2014 SIP<sup>114</sup> the following are threats and pressure listed for those sites:

- drainage
- inappropriate scrub control
- air pollution: impact of atmospheric nitrogen deposition
- public access/disturbance
- planning permission: general
- peat extraction
- invasive species

6.136 The 2019 Supplementary Advice to the Conservation Objectives<sup>115</sup> (SACO) goes into more detail on these vulnerabilities.

## A.33 West Midlands Mosses SAC

### Conservation Objectives

6.137 With regard to the SAC<sup>116</sup> and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.138 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- the extent and distribution of qualifying natural habitats
- the structure and function (including typical species) of qualifying natural habitats
- the supporting processes on which qualifying natural habitats rely

## Qualifying Features

- natural dystrophic lakes and ponds - acid peat-stained lakes and ponds
- transition mires and quaking bogs - very wet mires often identified by an unstable `quaking` surface

## Environmental Vulnerabilities

6.139 With regards to this SAC's SIP<sup>117</sup> the following are threats and pressure listed for the site:

- water pollution
- hydrological changes
- air pollution: impact of atmospheric nitrogen deposition
- inappropriate scrub control
- game management: pheasant rearing
- forestry and woodland management
- habitat fragmentation

6.140 The 2019 Supplementary Advice to the Conservation Objectives<sup>118</sup> (SACO) goes into more detail on these vulnerabilities.

# References

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<sup>1</sup> <https://www.gov.uk/guidance/national-planning-policy-framework>

<sup>2</sup> <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>

<sup>3</sup> The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: *'When human activities may lead to morally unacceptable harm [to the environment] that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis'*.

<sup>4</sup> SNH (2015). Habitats Regulations Assessment of Plans: Guidance for Plan-Making Bodies in Scotland. Version 3.0, January 2015. Available from: <https://www.nature.scot/habitats-regulations-appraisal-plans-guidance-plan-making-bodies-scotland-jan-2015>.

<sup>5</sup> <https://www.dtapublications.co.uk/>

<sup>6</sup> Opinion of Advocate General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, paragraph 49.

<http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN>

<sup>7</sup>

[https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN\\_art\\_6\\_guid\\_de\\_jun\\_2019.pdf](https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN_art_6_guid_de_jun_2019.pdf)

<sup>8</sup> Waddenzee case (Case C-127/02, [2004] ECR-I 7405)

<sup>9</sup> Department for Environment, Food and Rural Affairs. August 2012. Habitats Directive: Guidance on the application of article 6(4). Alternative solutions, imperative reasons of overriding public interest (IROPI) and compensatory measures. 9pp. Available at: [www.defra.gov.uk](http://www.defra.gov.uk) [Accessed on the 03/11/2020].

<sup>10</sup> <https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/what-is-coastal-squeeze>

<sup>11</sup> Cutts N & Allan J. 1999. Avifaunal Disturbance Assessment. Flood Defence Works: Saltend. Report to Environment Agency).

<sup>12</sup> Cutts, N., Phelps, A. and Burdon, D. 2009. Construction and waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA, Institute of Estuarine and Coastal Studies, University of Hull.

<sup>13</sup> The University's research is available at the following link: <http://bailey.persona-pi.com/Public-Inquiries/M4%20-%20Revised/11.3.67.pdf>.

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- <sup>14</sup> Research undertaken by the Institute of Estuarine & Coastal Studies, University of Hull. 2013. Available at: <http://bailey.persona-pi.com/Public-Inquiries/M4%20-%20Revised/11.3.67.pdf> [Accessed on the 01/12/2020]
- <sup>15</sup> Ibid. Response distances to visual stimuli are given in the Estuarine & Coastal Studies report.
- <sup>16</sup> Weilgart L. (2018). The impact of ocean noise pollution on fish and invertebrates. Oceancare & Dalhousie University. 36pp.
- <sup>17</sup> Magnhagen C., Johansson K. & Sigray P. (2017). Effects of motorboat noise on foraging behaviour in Eurasian perch and roach: A field experiment. *Marine Ecology Progress Series* **564**: 115-125.
- <sup>18</sup> McCauley R., Fewtrell J. & Popper A.N. (2003). High intensity anthropogenic sound damages fish ears. *Journal of the Acoustic Society America* **113**: 638-642.
- <sup>19</sup> Wysocki L.E., Dittami J.P. & Ladich F. (2006). Ship noise and cortisol secretion in European freshwater fishes. *Biological Conservation* **128**: 501-508.
- <sup>20</sup> Thompson P.M., Brookes K.L., Graham I.M. Barton T.R., Needham K., Bradbury G. & Merchant N.D. (2013). Short-term disturbance by a commercial two-dimensional seismic survey does not lead to long-term displacement of harbour porpoise. *Proceedings of the Royal Society B* **280**, DOI: <http://dx.doi.org/10.1098/rspb.2013.2001>.
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