

Jacobs

Humber 2100+

Sustainability Appraisal: Final Scoping Report

ENV0000300C-CH2-ZZ-RP-EN-0001 | C5.00

January 2020

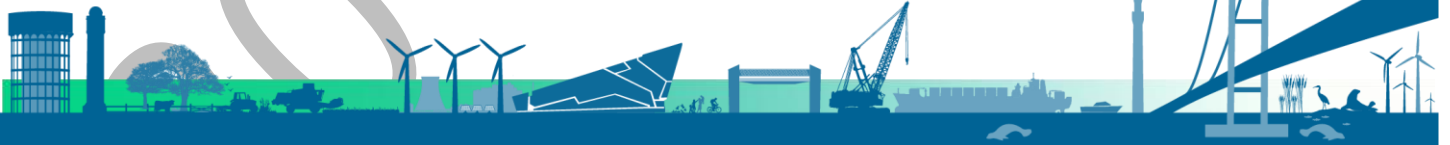
Environment Agency

Project Delivery Partners

Jacobs ARUP



HR Wallingford
Working with water



Humber 2100+

Project No: 692947CH
 Document Title: Sustainability Appraisal: Final Scoping Report
 Document No.: ENV0000300C-CH2-ZZ-RP-EN-0001
 Revision: C5.0
 Document Status: Final Draft
 Date: January 2020
 Client Name: Environment Agency
 Project Manager: Stephen Pimperton
 Author: Steve Isaac
 File Name: ENV0000300C-CH2-ZZ-RP-EN-0001

Jacobs U.K. Limited

1 City Walk
 Leeds
 LS11 9DX
 United Kingdom
 T +44 113 242 6771
 www.jacobs.com

Project delivery partners

Jacobs is the lead supplier for the delivery of the Humber 2100+ (Humber Strategy Comprehensive Review). Key elements of the project are being delivered by our principle project delivery partners Arup and HR Wallingford.

Company	Contact Name	Address	Telephone
Arup	Donald Daly	Admiral House, 78 East Street, Leeds, West Yorkshire, LS9 8EE, United Kingdom	+44 113 242 8498
HR Wallingford	Caroline Hazlewood	Howbery Park, Wallingford, Oxfordshire, OX10 8BA, United Kingdom	+44 1491 822 899

© Copyright 2019 Jacobs U.K. Limited. The concepts and information contained in this document are the property of Jacobs. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright.

Limitation: This document has been prepared on behalf of, and for the exclusive use of Jacobs' client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this document by any third party.

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
1.0	02.11.17	Draft for NEAS Review	Kripa Dwarakanath	Richard Ashby-Crane	Richard Ashby-Crane	Stephen Pimperton
2.0	14.11.17	For Internal EA teams review	Kripa Dwarakanath	Richard Ashby-Crane	Richard Ashby-Crane	Stephen Pimperton

Revision	Date	Description	Author	Checked	Reviewed	Approved
3.0	07.12.17	For stakeholder consultation	Kripa Dwarakanath	Richard Ashby-Crane	Richard Ashby-Crane	Stephen Pimperton
4.0	19.09.18	Post stakeholder consultation – Final version for NEAS review	Stephen Isaac	Katie Born	Katie Born	Stephen Pimperton
5.0	18.02.2020	To be made available to general public	Stephen Isaac	Katie Born	Katie Born	Stephen Pimperton

2018 version

Contents

Foreword	1
February 2020 Version Comment.....	2
1. Introduction.....	3
1.1 Purpose of this report.....	3
1.2 Background to the Strategy	3
1.3 Humber 2100+ study area	4
1.4 Flood risk management.....	7
1.4.1 Flooding history	7
1.4.2 Other flood risk management strategies	7
1.5 Background to Sustainability Appraisal and Strategic Environmental Assessment.....	8
1.5.1 Purpose of SA and SEA.....	8
1.5.2 Regulation and legislation.....	8
1.5.3 Overview of SA stages and consultation	9
1.6 Report structure.....	10
2. Methodology.....	11
2.1 Study area	11
2.2 Data sources.....	11
2.3 Limitations	11
2.4 SA approach	12
2.4.1 Scoping.....	12
2.4.2 Initial Options Appraisal	12
2.4.3 Preferred Options Appraisal.....	13
2.4.4 Adoption/Strategy submissions	13
2.5 Describing effects and their significance	14
2.5.1 Evaluation of effects.....	14
2.5.2 Mitigation.....	16
2.5.3 Cumulative, secondary and synergistic effects.....	16
2.6 Consultation	16
2.7 Inter-relationship with the Strategy-making process and SA process.....	16
2.8 Connections with other studies and assessments	17
2.8.1 Habitats Regulations Assessment.....	17
2.8.2 Water Framework Directive Assessment	17
2.8.3 Landscape, green infrastructure and investment studies.....	18
3. Regulations, Policies and Plans Review.....	19
3.1 Introduction.....	19
3.2 Regulations.....	19
3.3 National Policies and Plans	20
3.4 Regional, sub-regional and local policies and plans.....	21
3.4.1 Flood and coastal erosion risk management plans	21
3.4.2 Strategies for economic growth.....	22
3.4.3 Local authority plans.....	23
3.5 Key messages	24

4.	Baseline Reporting – Social and Economic Factors	25
4.1	Population and human health	25
4.1.1	Population	25
4.1.2	Demography	25
4.1.3	Flood risk and human health	26
4.1.4	Social deprivation	27
4.2	Access and recreation	27
4.3	Economic activity	29
4.3.1	Key economic sectors	29
4.3.2	Economic indicators	29
4.3.3	Tourism and recreation	30
4.4	Economic growth and inward investment	31
4.4.1	Introduction	31
4.4.2	Strategic economic partnerships	31
4.4.3	Spatial planning and development policies	31
4.5	Rural land use and rural economy	32
4.5.1	Land use classification	32
4.5.2	Farming	32
4.5.3	Fisheries	32
4.5.4	Rural economy	33
4.6	Material assets	33
4.6.1	Critical infrastructure	33
4.6.2	Mineral sites	34
5.	Baseline Report – Environmental Factors	36
5.1	Biodiversity	36
5.1.1	Statutory designated features	36
5.1.2	Non-statutory designated features	36
5.2	Water	38
5.2.1	Introduction	38
5.2.2	Waterbodies	38
5.2.3	Water quality	38
5.2.4	Water resources	39
5.3	Geomorphology	40
5.3.1	Overall morphological form	40
5.3.2	Physical processes	41
5.4	Landscape	42
5.4.1	Landscape character	42
5.4.2	Landscape designations	42
5.4.3	Other studies	43
5.5	Cultural heritage and archaeology	43
5.5.1	Historical overview	43
5.5.2	Statutory designations	44
5.5.3	Archaeology	44
5.6	Climate change	45
5.7	Waste and contaminated land	46
6.	Sustainability Appraisal (SA) Framework	47

6.1	Introduction.....	47
6.2	Scoping of SA topics.....	47
6.3	SA objectives and criteria.....	49
6.4	Potential monitoring indicators.....	49
6.5	Compatibility testing.....	57
	6.5.1 Purpose.....	57
	6.5.2 Humber 2100+ Objectives.....	57
	6.5.3 Compatibility between the Strategy objectives and the SA objectives.....	58
7.	Next steps	60
	7.1 Next steps.....	60
8.	Abbreviations and glossary	61
9.	References	70
10.	Appendices	74

Table(s)

Table 1.1	Overview of Humber 2100+ development stages, SA stages and key consultation.....	9
Table 2.1	Aspects that will be used to describe the identified effects of the proposed strategy and options.....	14
Table 2.2	Criteria to determine significance of identified effects of strategy options against the SA objectives....	15
Table 4.1	2011 Census population data for the study area.....	25
Table 4.2	Population-age distribution.....	26
Table 6.1	Summary of issues scoped in and out of the Humber 2100+ SA.....	48
Table 6.2	SA Framework Table.....	51
Table 6.3	Strategy objectives and SA objectives-compatibility matrix.....	59

Figures

Figure 1	Humber 2100+ study area (as defined for the SA).....	6
Figure 2	Flooding at South Ferriby and Winteringham Ings, December 2013.....	7

Foreword

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks of people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

2018 version

February 2020 Version Comment

This is the post-consultation version of the SA Scoping Report from 2018. This version is being made available to the general public with a small number of updates, including a project name change. It should be noted that the baseline data and legislation, policies and plans review used in this Scoping Report are from 2018, when the report was originally produced. These have not been updated for this February 2020 issue. However, they will be updated again for the main SA Report (see report stages in Section 2.3).

Similarly, due to the long project time period, the SA baseline and methodology may be adapted slightly in the main SA Report to take account of emerging legislation, policy and guidance. The SA will also work alongside the strategy's newly commissioned Natural Capital Study and the current work to embed the United Nations Sustainable Development Goals (UNSDGs) into Humber 2100+.

The project name changed from the Humber Strategy Comprehensive Review (referred to as 'The Review'), to Humber 2100+, to help emphasise that the project is not developing an updated version of the 2008 strategy, but is developing a new strategy.

The latest information on Humber 2100+ is available on the project website: <https://consult.environment-agency.gov.uk/humber/strategyreview/>

2018 Version

1. Introduction

1.1 Purpose of this report

A comprehensive review of the Humber Flood Risk Management Strategy, published in 2008 (Environment Agency, 2008), is being undertaken with the aim of developing a new, revised Strategy (Humber 2100+) that sets out the strategic approach to managing tidal flood risk around the Humber Estuary for the next 100 years that will be adopted by key organisations around the estuary.

A Sustainability Appraisal (SA) is being completed for Humber 2100+. The SA will incorporate a Strategic Environmental Assessment (SEA). It will assess the sustainability of the strategic proposals being considered in the new Strategy in terms of key environmental, social and economic factors.

The purpose of this SA Scoping Report is to record the findings of the SA scoping stage, with the following aims:

- to set out baseline information for the study area across economic, social and environmental themes;
- to record the review of legislation, plans and policies that are most relevant to flood risk management proposals in the study area;
- to develop a 'SA Framework' comprising a set of sustainability objectives that the Strategy will look to achieve and a set of criteria against which the proposed options will be appraised; and
- to elicit feedback from key stakeholders on the scoping stage baseline information and proposed framework of objectives, to inform the appraisal of strategic flood risk management options.

1.2 Background to the Strategy

The existing Humber Flood Risk Management Strategy¹ was approved by Defra in 2007, published in 2008 and began to be implemented in 2009. It sets out a strategic approach for managing tidal flood risk around the Humber Estuary over 100 years. The existing Strategy examined different ways of managing flood risk around the Humber Estuary, raising defences where appropriate but considering the potential benefits of providing flood storage at three locations. It also identified sites where the defences could be realigned to provide compensatory habitat under the England and Wales Habitats Regulations. It aimed to ensure a good standard of protection from tidal flooding for the first 25 years and beyond for 99% of residents around the estuary and the important industrial areas.

There were, however, substantial lengths of frontage for which making defence improvements was uneconomic, and so the standard of protection would diminish as sea levels rise. The Strategy indicated that it would be reviewed at regular intervals. In addition, the changes introduced by the Flood and Water Management Act 2010 suggest an increased role for local authorities in flood risk management and introduced the partnership funding approach. The purpose of Humber 2100+ is to develop a revised Strategy (referred as 'the Strategy') for managing tidal flood risk around the estuary for the next 100 years, taking other sources of flooding into account and focusing on the first 25 years. It will also consider predicted sea level rise linked to climate change. Humber 2100+ is being undertaken by the Environment Agency in full partnership with the Lead Local Flood Authorities and Local Planning Authorities around the estuary, as well as other Statutory Agencies, Risk Management Authorities and other key stakeholders. The aim is to produce an updated Strategy that is agreed and formally adopted by all the partners.

Humber 2100+ will update the existing strategy to incorporate additional information following the 2013 tidal surge, improved understanding about the estuary and its behaviour, and key changes in the way flood risk management is administered and funded. It will also cover a larger study area than the existing strategy: adding the extremity of tidally-dominant flooding further upstream in the Rivers Ouse, Aire, Don, Trent and Ancholme (see Section 1.3).

¹ Humber Flood Risk Management Strategy, March 2008 <https://www.gov.uk/government/publications/humber-flood-risk-management-strategy>

Humber 2100+ will develop a Capital Programme (at a strategic level) that will cover all the necessary flood defence improvements, together with the appropriate compliance requirements (such as a continuing programme of habitat creation through managed realignment to ensure compliance with the UK Habitats Regulations) from 2021 to 2121. The project will consider how the Strategy can enable future flood risk management to be adaptive to changing conditions, such as the environment, climate change impacts and funding policies. The project will also develop a whole-life Maintenance Plan (at a strategic level) for all the estuary's tidal defences. This will include such items as erosion protection, outfalls and adaptation to climate change. The affordability of Humber 2100+ will be considered using Defra FCRM-AG and other methods as defined in the economics and funding workstreams.

The results of the Humber 2100+ project will be reported in an updated Strategy document for approval by the Environment Agency, Defra and HM Treasury, accompanied by appropriate parallel documents and summaries to allow engagement with the public and key stakeholders. Once Humber 2100+ is approved and adopted by all the partners, its programme will feed the detailed programmes of flood risk management activities for delivery post-2021. During the development of Humber 2100+, various environmental studies will be completed to comply with legal requirements, including SEA and Habitats Regulations Assessment (see Section 2.8) and to inform option appraisal. For example, these assessments will help to identify options that work with natural process and provide sustainability benefits (social, environmental, economic). The new assessments will refer to and build on the previous assessments completed for the original strategy², including the original SEA and Habitat Regulations work (a shadow Appropriate Assessment in 2005 and approved HRA in 2011, following the change in legislation).

1.3 Humber 2100+ study area

The Humber Estuary is one of the North Sea's principal estuaries, with a catchment approximately one fifth of the land area of England. The estuary area includes homes of more than 400,000 people; 205,000 properties and 32,500 businesses including major industrial and commercial properties; the country's largest port complex; and extensive areas of highly productive farmland. The estuary area is at risk of being flooded by a storm surge in the North Sea, and is protected to varying standards by existing flood defences. Most of these people are in cities such as Hull and large towns such as Grimsby, or in smaller towns or villages. Most of the study area is farmed and consequently has relatively few people living on it: the hinterland of the estuary supports high quality agriculture. The area contains the UK's largest ports complex (Goole, Hull, Immingham /Grimsby) and other major industries such as power stations and refineries. The whole area is of heritage interest and the estuary itself is protected by national and international designations due to its importance for nature conservation, particularly for inter-tidal habitats and birds.

The study area for Humber 2100+ is shown below in Figure 1. It comprises the area of tidally-dominant flooding around the Humber Estuary and in the lower reaches of the Rivers Ouse, Ancholme, Aire, Don and Trent (extending further upstream and along the coast compared with the existing Strategy). The study area covers either in full or part of the following local authorities and county councils:

- East Riding of Yorkshire
- City of Kingston upon Hull
- North Lincolnshire
- North East Lincolnshire
- West Lindsey
- East Lindsey
- Bassetlaw District Council
- Doncaster Metropolitan Borough Council
- Selby District Council
- North Yorkshire County Council

² HEFDS Strategy Development Study SEA Environmental Report (Halcrow and Black & Veatch, June 2005)

- Nottinghamshire County Council
- Lincolnshire County Council

The existing Strategy and accompanying SEA (Halcrow and Black & Veatch, 2005) divided the Strategy study area into 27 'flood cell' units. Humber 2100+ is likely to have different units from that of the original Strategy and these will be determined at a later stage. For the purposes of this Scoping Report, the baseline information is presented by local authority and will be refined further when details of the Strategy flood cells become available.

Note that there has been a revision to the Strategy study area boundary since publication of the Scoping Report Consultation version in December 2017, to the 7m LiDAR contour. The revised boundary now includes:

- more areas to the south of Selby (Balne, Walden Stubbs);
- some areas in the north of Doncaster district (Campsall and Norton) and the east of Doncaster district (Hatfield Chase);
- more area to the east at the mouth of the Humber; and
- more of the coasts of North Lincolnshire, West Lindsey district, North East Lincolnshire and East Lindsey district.

Where it was useful for the SA and for the Strategy to note and where the data was available, the SA used a sub-regional level of information. For example, this level of detail was used for the economic growth discussions, and information on Yorkshire and Humber (which cover most of the study area extent), East Midlands, and Doncaster and Bassetlaw areas.

2018 Version

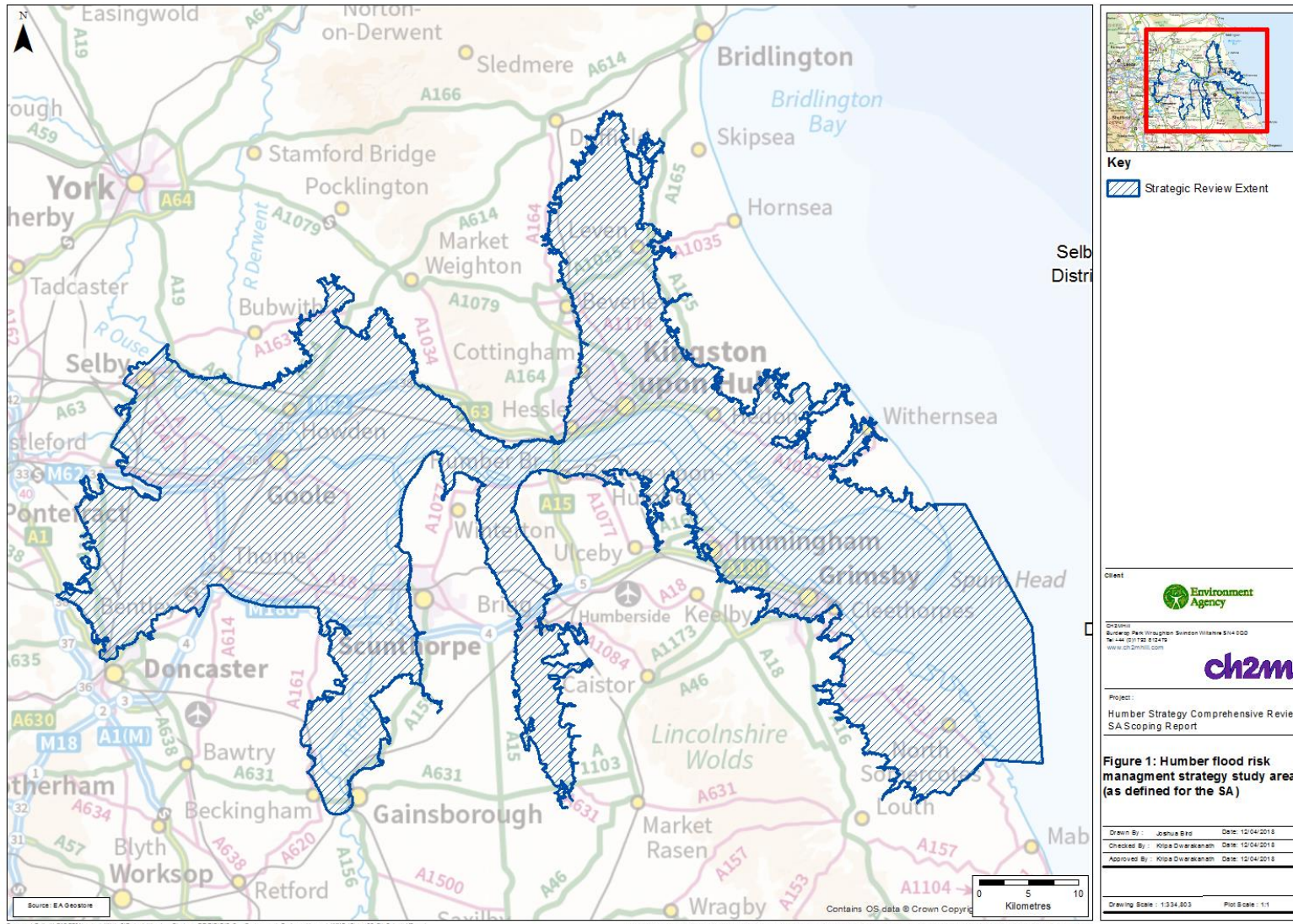


Figure 1 Humber 2100+ study area (as defined for the SA)

1.4 Flood risk management

1.4.1 Flooding history

The Humber Estuary has had a long history of flooding. The most damaging storm surge on record in the North Sea struck the east of England on 31st January 1953, leading to the loss of 300 lives, damaging 24,000 homes and flooding almost 100,000 ha of land between Yorkshire and the Thames Estuary. Following this, the flood defences around the Humber Estuary were improved.

Flood protection is provided by approximately 400km of flood defences along the estuary and tidal reaches of the main tributaries, largely comprising grassed earth embankments, heavier rock or stone protected banks and sheet piled or concrete walls in industrial areas.

Most recently, a major tidal surge in December 2013 resulted in overtopping and damaging defences around the Humber Estuary. Approximately 1,170 properties were flooded, 1,500 people were evacuated and around 7,000ha of land was flooded.

The 2013 floods affected many residents and businesses on the north and south banks of the Humber and in the tidal reaches of the tributaries, and communities affected included Kilnsea, Hull, Hessle, Reedness, South Ferriby (see Figure 2), New Holland, Cleethorpes, and Immingham.



Figure 2 Flooding at South Ferriby and Winteringham Ings, December 2013

Since the 2013 surge, defences were inspected immediately and urgent repairs have been completed. The flood defences around the Humber Estuary were tested again by another tidal surge in January 2017.

Records show that water levels in the Humber are rising, and the rate is predicted to increase because of climate change. Unless action is taken, this will increase flood risk in many areas. In addition, this is causing loss of intertidal habitats within the estuary due to coastal 'squeeze' (i.e. where inter-tidal habitats cannot migrate inland with rising sea levels due to presence of defences). A full review of flood risk around the Humber Estuary will be completed during the development of Humber 2100+.

1.4.2 Other flood risk management strategies

Since 1997, the Environment Agency has been developing a long-term strategy for managing flood risk around the Humber Estuary and the lower reaches of its main tributaries, resulting in the production of many flood risk management plans. The most relevant of these are discussed below.

The Humber Estuary Shoreline Management Plan HESMP (Environment Agency, 2001) identified that in much of the estuary the best approach is to keep the defences where they are. It highlights however, that there are places in the estuary where adopting a different line of flood defences will make the whole system (estuary, defences and area protected) more effective and sustainable.

The Humber Coastal Habitat Management Plan (CHaMP) (Environment Agency, 2005) was produced to inform the development of a more detailed strategy to manage the risk of flooding around the Humber Estuary. It assessed the amount of intertidal habitat likely to be lost due to coastal squeeze and the construction of new or improved flood defences over the following 50 years. It also set out the rate at which replacement habitat should be provided to meet the requirements of the UK Habitats Regulations.

Building on the HESMP and CHaMP, the Humber Flood Risk Management Strategy was published in 2008, as described in section 1.2.

The Flamborough Head to Gibraltar Point Shoreline Management Plan (Scott Wilson, 2010) provides a strategy for the east coast at the Estuary mouth and has considerable overlap with this Strategy's study area, from Immingham to Saltfleet on the south bank, and Sunk Island to Easington on the north bank.

The Humber River Basin District Flood Risk Management Plan (Environment Agency, 2016) was written after the approved Strategy as it was a statutory plan under The Flood Risk Regulations 2009, which transposed the EU Floods Directive into UK law. It refers to the Humber Flood Risk Management Strategy as the key plan for managing flood risk around the estuary.

The Estuary's larger tributaries also have relevant strategies whose study areas will overlap or are adjacent with the new Strategy, some of which are draft: The River Hull Integrated Catchment Strategy, River Aire Strategy, Isle of Axholme Strategy, River Ouse Strategy, Tidal Trent Strategy, River Don Strategy, the River Derwent or Dutch River. Unpublished reports, where available have been reviewed to inform the SA.

Note that the relevant areas covered by the strategies discussed in this section will, in part, be incorporated in the Strategy.

1.5 Background to Sustainability Appraisal and Strategic Environmental Assessment

1.5.1 Purpose of SA and SEA

By identifying strategic level sustainability issues that can guide Humber 2100+ development and be carried through to schemes, the SA aims to ensure that individual schemes are developed with sustainability in mind. Potential cumulative effects are thereby assessed at an early stage, preventing a situation in which detailed schemes are developed that subsequently have to be rejected, or fundamentally redesigned in order to comply with legislation or other environmental requirements and to avoid conflict with socio-economic features and planned economic growth.

The SA process is integral to Humber 2100+ development by advising on the potential environmental, social and economic impacts of the options and associated opportunities for improving sustainability. The SA has distinct stages, which influence the development of the Strategy at key points in its programme. The SA methodology and relationship with Humber 2100+ are described in section 2.

1.5.2 Regulation and legislation

SA and the SEA processes help public authorities such as local planning authorities and the Environment Agency to contribute to the achievement of sustainable development in preparing their plans and strategies through a structured assessment of their proposals and policies in terms of key sustainability issues - social, environmental and economic factors. DEFRA Flood and Coastal Erosion Risk Management Policy (DEFRA, 2009) states 'Environmental appraisal techniques, using the structured methodology (be) employed in a Strategic Environmental Assessment (Reference 17) or Environmental Impact Assessment should be utilised to describe

the full range of impacts on the human, cultural, historic and natural environment of all options.' Therefore, a SEA will apply to the Humber 2100+. In addition, the Environment Agency is committed to working with key stakeholders i.e., local planning authorities who conduct SA in their plan making process; therefore, the Environment Agency has decided to prepare a SA for Humber 2100+, which will also integrate the legal requirements of SEA. Hereafter, SA refers to an integrated SA and SEA³.

1.5.3 Overview of SA stages and consultation

An overview of the stages of development for Humber 2100+ in relation to the stages of the SA is summarised in Table 1.1 below. More detail of the SA methodology for each stage is provided in Section 2.4.

The statutory bodies (Consultation Authorities) for SAs and SEAs in England are Natural England, Historic England and the Environment Agency.

Consultation with the statutory bodies and other key stakeholders has been held and planned for further stages to meet the statutory requirements for consultation on the SEA and add rigour to the appraisal process. The first consultation of the SA Scoping report was held between December 2017 and January 2018 and this report has been updated based on the consultation comments to form this SA Final Scoping Report.

Table 1.1 Overview of Humber 2100+ development stages, SA stages and key consultation

Humber 2100+ Development Stage	SA Stage	Objective	Purpose
Data collection and analysis to inform Strategy	Scoping	To gather readily available information about the sustainability aspects (baseline data) and other relevant plans and strategies.	Define and confirm the current state of the social, economic and environmental receptors, confirm the key sustainability issues related to Humber 2100+ , and identify the sustainability objectives relevant to the Strategy.
	Scoping Consultation	To consult on the scope and level of detail required for the SA.	Consultation on the draft Scoping Report (consultation version). Update following consultee comments to produce the Post-consultation SA Final Scoping Report (this report)
Develop and assess initial Strategy options	Initial options appraisal	Identify potential long list and short list FRM options and assess their significant sustainability effects and consult on the initial options with stakeholders. Identify measures to avoid, reduce or offset negative effects or maximise the positive effects.	Influence the selection of the short list options using the results of the long list assessment. Document the outcomes of consultation on the Initial options to feedback into the selection of the preferred Strategy option. Consultation on the Initial Options Appraisal Report.
Draft Strategy	Preferred option Appraisal & SA Report	Consult with stakeholders on the draft Strategy and the results of the SA	Document the outcomes of the SA of the draft Strategy in a SA Report and obtain feedback from consultees.

³ For further information on SA and SEA see UK Government DCLG planning guidance website: <https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal>

Humber 2100+ Development Stage	SA Stage	Objective	Purpose
			Consultation on the preferred option(s) appraisal using the SA Report
Strategy adoption	Adoption stage, to prepare SA Post Adoption Statement	To adopt the Strategy and show how the economic, social and environmental issues and consultation feedback has been taken into account.	Document feedback on the SA Report and demonstrate how the SA process has influenced the Strategy preparation. Publish the Strategy, seek approval from Defra and provide a Post Adoption Statement for publication as soon as the Strategy is adopted, detailing the SA process and the role in Strategy preparation.

1.6 Report structure

This report is structured as follows:

- Section 1- Introduction;
- Section 2 - Methodology to be adopted for all stages of the SA, with details on determination of significance of effects;
- Section 3 – Regulations, Policies and Plans review - a key activity at the scoping stage, which will inform development of the SA Framework. (See Appendix 1);
- Section 4 - Social and Economic Factors Baseline section, which discusses social and economic themes that are relevant to the SA Framework and will inform future appraisal stages;
- Section 5 - Environmental Baseline section, which discusses relevant environmental themes that are relevant to the SA Framework and will inform future appraisal stages. (The figures are given in Appendix 2, and the additional information in Appendix 3);
- Section 6 - Sustainability Appraisal Framework, which discusses which social, environmental and economic topics will be scoped in or scoped out of the SA and the reasons. It presents the SA Framework with objectives, criteria and indicators. The Framework will be refined upon receipt of consultation responses to this report and it will be used to appraise the Humber 2100+ options in the subsequent stages. This section also includes discussion on compatibility testing between SA and Strategy objectives;
- Section 7- Next steps.

2. Methodology

2.1 Study area

The study area for the SA of Humber 2100+ will predominantly follow the area where flood risk management options are planned and where these options are predicted to have a significant impact - positive or negative. For the purposes of the Scoping Report, it will initially adopt the new Strategy study area (see Section 1.3) comprising the area of tidally-dominant flooding around the Humber Estuary, including the lower reaches of the Rivers Ouse, Aire, Don, Ancholme and Trent.

Other parallel studies, described in Section 2.8, will inform the SA and influence the study area. The other studies will also discuss impacts on potential environmental, economic and social receptors.

Due to the various parallel studies, and the variation in impact magnitude between the different environmental, social and economic topics, the SA study area may vary. A review of the study area will therefore be undertaken as the parallel studies develop and findings emerge, and, if necessary, modified for later stages of the SA if impacts are anticipated outside the Humber 2100+ study area.

2.2 Data sources

Key data sources used to build an understanding of the environmental, social and economic baseline presented in this Scoping Report are listed below. These comprise publicly available data from online sources and information from the Environment Agency and partners, including GIS-based data from most local authorities within the study area. The key data sources included:

Plans and reports

- Department for Communities and Local Government guidance on SA
- Websites of local authorities and county councils located within the study area for Local Plans and other planning documents
- River Basin Management Plan, Shoreline Management Plans, Coastal Habitat Management Plan and the previous Humber Flood Risk Management Strategies (and related documents)
- Studies within the Humber Estuary on environmental and economic aspects
- Website of the Humber and Lincolnshire Local Economic Partnership.

GIS data layers

- Environment Agency
- Local Authorities
- MAGIC, Defra websites
- Internal Drainage Boards (for example Shire Group IDB)
- Natural England
- Historic England.

2.3 Limitations

Baseline data gathered are typically from online sources for reports and statistics, and GIS layers on various topics were requested from local authorities that fall within the study area. We are grateful to all authorities who supplied the information, however this was not received from all authorities, hence there are gaps in data sets (shown in the figures in Appendix 2).

Some unpublished reports, made available by the Environment Agency, were used to inform the plans and policies review and baseline sections of this report (sections 3 and 4); it is likely that similar reports are available

with partner organisations which we were not able to access at the time of writing this report, subsequently gaps in baseline reporting may exist.

2.4 SA approach

The SA, incorporating a SEA, will assess the sustainability performance of the Humber 2100+ proposals. The approach is based on the DCLG Guidance on the SA of Plans, Policies and Programmes (2005). It follows four stages, which are continuously linked to the preparation of the Strategy: (i) Scoping; (ii) Initial Options Appraisal; (iii) Preferred Option Appraisal; and (iv) Adoption/Strategy Submission..

The main steps in the SA are discussed in sections 2.4.1 to 2.4.4 below.

2.4.1 Scoping

Scoping is the first step in SA, is the current stage of the Humber 2100+ SA. This stage involves:

- *Baseline setting for the study area:* This is a fundamental step in the SA process as it helps to identify the environmental, social and economic status against which changes can be measured. It helps define key issues and potential opportunities for Humber 2100+ and helps develop a robust SA Framework (see below). Data sources identified in section 2.2 inform the basis for the analysis. See sections 4 and 5 for the findings.
- *Relevant legislation, plans and policies review:* This step helps to inform the team of relevant legislation, plans and policies that may have implications or influences on the SA and the Strategy, and therefore need to be considered in developing the SA Framework.
- *SA Framework development:* Based on the baseline setting and analysis of relevant plans, policies and programmes, key issues and opportunities are identified to enable specific SA objectives to be developed for economic, environmental and social themes that are relevant to Humber 2100+. The framework (provided in Section 6 of this report) also includes sub-objectives/ assessment criteria which will be used to guide the assessment of Strategy options.
- *Scoping Report - consultation version:* The SA Scoping Report reports on the findings of the baseline setting, identification of relevant issues and opportunities, and the plans and policies review and presents the proposed SA Framework. A test on the compatibility of the SA objectives and the Humber 2100+ objectives was included. The first version was prepared for consultation.
- *Consultation:* The SA Scoping Report consultation version was presented for consultation with statutory bodies and other key stakeholders, including Natural England, Historic England, Marine Management Organisation, Local Planning Authority teams (planning and flood risk) and Environment Agency teams, and other relevant bodies, such as the Yorkshire and Lincolnshire Wildlife Trusts and RSPB, between December 2017 and January 2018, adhering to the statutory consultation period prescribed in the SEA Regulations (five weeks).
- *Final Scoping Report – post consultation version:* After the five-week consultation period, the responses were collated and analysed. Based on the responses, some baseline and policies information has been revised and the SA Framework refined in order to prepare the Final Scoping Report (this report). Details of the consultation responses and how these have been taken into account in this report are provided in Appendix 4.

2.4.2 Initial Options Appraisal

The second stage of the SA will provide assessments of the Humber 2100+ options being considered on the long list of options, followed by the short list. The main steps in the SA in this stage will be:

- *High-level appraisal of long list:* Using the SA objectives in the agreed SA Framework, a high-level appraisal of the long list will be conducted against the SA objectives integrated into the wider appraisal work. A high-level summary of the environmental, economic and social issues, where key adverse impacts and opportunities will be recorded. These sustainability findings will be used by the Humber 2100+ team to inform the development of the options and influence the selection of the short list.

- *More detailed appraisal of short list:* A more detailed appraisal of the options that remain on the short list will be conducted using the agreed SA Framework (and see evaluation method in section 2.5.1). The appraisal is reliant on expert judgement informed by the baseline and consideration of the possible probability, frequency, reversibility, magnitude, timing and spatial extent of potential effects, and the sensitivity of the receptor. The short-listed options, barring the ones which may be developed into a preferred option in the future stages, will be considered as ‘reasonable alternatives’⁴. A ‘do-nothing’ option will also be appraised as a comparator.
- *Initial Options SA Report:* Findings of the ‘do-nothing’, long list and short list options appraisal will be consolidated into an Initial Options SA Report, prepared for consultation.
- *Consultation:* Although it is not defined as a requirement for a SA, consultation on the Initial Options SA Report is a widely-accepted practice in the Local Plan preparation process, which is recommended to replicate. The consultation period will run for five-weeks.

2.4.3 Preferred Options Appraisal

This stage of the SA will complete the main assessment of the Humber 2100+ preferred options. The main steps in the SA in this stage will be:

- *Preferred option assessment:* A detailed assessment of the preferred options against the agreed SA objectives in the Framework will be conducted (and see evaluation method in section 2.5.1). The temporal and spatial scale will be discussed, along with commentary on the identified impact of the preferred options.
- *SA Report:* The SA Report will include assessment findings of the preferred options, ‘do-nothing’ option, ‘reasonable alternatives’ as well as cumulative, synergistic and secondary effects identified. For the purposes of this study, typical mitigation applied through regulation will be assumed and only ‘residual’ effects will be reported as predicted effects. A Mitigation and Monitoring Framework will be developed for the options that will be finalised and presented as part of the SA Report.
- *Consultation:* The SA Report will be presented along with the draft Humber 2100+ Strategy for consultation with identified stakeholders.

2.4.4 Adoption/Strategy submissions

This stage of the SA will provide the final SA documents for submission with the finalised Strategy documentation for approval. The main steps in the SA in this stage will be:

- *Statement of Environmental Particulars:* Consultee comments on the SA Report and responses will be recorded in a Statement of Environmental Particulars, unless significant changes to the draft Strategy preferred options are proposed post-consultation. If any significant changes are made to the Strategy options, re-appraisal and re-consultation of the amended SA Report will be undertaken. Due to an overlap in the purpose and content, the Statement of Environmental Particulars could potentially be combined with the Draft Adoption Statement document described below. This will be determined at the SA Report stage.
- *Draft Post-Adoption Statement:* a draft Post-Adoption Statement will be prepared so that a statement is ready for publication as soon as possible upon adoption of the Strategy. It will set out how the SA findings and consultation responses have been taken into account.
- *Approvals submission:* The finalised updated Strategy and Business Case will be submitted, accompanied by the SA Report, Statement of Environmental Particulars and a draft SA Post-Adoption Statement, for approval by the Environment Agency, Defra and HM Treasury. Once the Strategy is approved and adopted by all the partners, the Post-Adoption Statement will be published.

⁴ UK [Government guidance website](#) states, ‘Reasonable alternatives are the different realistic options considered by the plan-maker in developing the policies in its plan. They must be sufficiently distinct to highlight the different sustainability implications of each so that meaningful comparisons can be made. The alternatives must be realistic and deliverable’. It is important to assess reasonable alternatives to the same degree as one would appraise the preferred options.

2.5 Describing effects and their significance

2.5.1 Evaluation of effects

The SA will be an expert judgement-based assessment, supported by appropriate evidence and we will use experience gained by conducting SEA of other flood risk management strategies and from conducting Local Plan SAs. Where appropriate, the assessment will utilise mapping data and GIS to identify areas of potential impact, for example due to erosion risk or presence of environmental designations. Up-to-date, locally-specific environmental, social and economic data will be used to inform the impact assessment. For example, the SA will refer to specific areas targeted for economic development, through stakeholder engagement and using site allocations data obtained from local planning authorities and Local Economic Partnerships.

The assessment will focus on impacts associated with tidal flood risk. This assumes a flood risk baseline year of 2021. Impacts associated with other forms of flood risk will be considered as part of the cumulative impact assessment (see Section 2.5.3).

The impacts described in the SA will be those expected under 'do nothing', 'do minimum' and 'status quo' baseline scenarios for tidal flood risk. These scenarios will be described in the SA report commentary in relation to each SA topic, to allow easy comparison between each scenario and the flood risk management options.

The 'do nothing' scenario enables a comparison to be made with how the risk of flooding would look in the absence of the Humber 2100+ Strategy. This approach is consistent with the recommendations of the 2005 ODPM SA/SEA guidance.

The 'do minimum' scenario would effectively mean a reduced Standard of Protection for communities and infrastructure due to sea level rise. The do-minimum approach will be described in the SA report commentary, in relation to each of the SA objectives and for each flood area.

The 'status quo' scenario will assume we continue to deliver the existing 2008 Humber Strategy.

For the assessment of short listed and preferred options, the achievement of SA objectives will be considered against the baseline. This means that, where defences are already present, and the option is to maintain the existing defence line, then the option would have a neutral effect on properties affected, i.e. no change from the present day. However, the option may have a negative effect for the future with sea level rises linked to climate change scenarios.

The potential effects of the short listed options and the preferred options will be described in terms of their nature, permanence, spatial scale and duration, as shown in Table 2.1, with their significance criteria provided in Table 2.2. Due to the strategic nature of the assessment, and the multiple variables to consider, there will always be a significant level of uncertainty in the assessment.

Table 2.1 Aspects that will be used to describe the identified effects of the proposed strategy and options

Aspect	Descriptors to be used
Nature	Positive (+) Negative (-) Neutral (N) Uncertain (?)
Permanence and reversibility	A permanent effect (P) is one which results from a physical change that is anticipated to last beyond the life of the Strategy (i.e. 100 years) A temporary effect (T) is one which results from an operational change which results from an operational change which could change if there is a change of policy, or a short-term condition, which is anticipated to reverse in the future. A reversible effect (R) is an effect that can be reversed, for example an incident of water pollution can be cleaned up over time.

Aspect	Descriptors to be used
	An irreversible effect (I) is an environmental effect that cannot be reversed such as the loss of a historic feature or the loss of agricultural soil due to permanent development.
Spatial scale	Local (L): effect is restricted to a specific site or settlement within the study area. Regional (Re): effect is anticipated to cover a significant proportion of Humber and/or North Lincolnshire, North Yorkshire (part) and surrounding areas. National (N): effect covers the whole of England and/or the UK (also includes international).
Duration	Effects expected from the construction or operation of the proposed option(s) in the short term (ST), medium term (MT), and long term (LT). The timescales are to be determined once the number and duration of the Strategy epochs are defined, to allow comparison between the epochs and impact duration.

Table 2.2 Criteria to determine significance of identified effects of strategy options against the SA objectives

Significance	Symbols	Description
Major positive	++	The option would be significantly beneficial and contribute to the achievement of the SA objective by helping to resolve an existing social, economic or environmental issue and/or maximising opportunities for enhancement*.
Minor positive	+	The option would be partially beneficial and contribute to the achievement of the SA objective by helping to resolve an existing social, economic or environmental issue and/or offering opportunity for some enhancement. This effect would not be considered significant.
Neutral	N	The option would have a neutral effect in terms of achieving the SA objective, i.e. no change from the present day.
Uncertain	?	There is insufficient detail available on the option or the baseline situation to assess how significantly achievement of the SA objective would be affected by the option.
Minor negative	X	The option would partly undermine achievement of the SA objective by contributing to a social, economic or an environmental problem and/or partially undermine opportunities for any enhancement. This effect would not be considered significant.
Adverse (major negative)	XX	The option would significantly undermine achievement of the SA objective by contributing to a social, economic or an environmental problem and significantly undermine opportunities for any enhancement. This effect would be considered significant.

*Enhancement means going beyond mitigation on and/or to improve existing baseline condition

For the assessment of short-listed options and the likely preferred options, achievement of SA objectives will be considered against the baseline. This means that where defences are already present and the option is to maintain the existing defence line, then the option would have a neutral effect on properties affected, i.e. no change from the present day. However, the option may have a negative effect for the future with rises in sea level linked to climate change.

It is important to recognise that the baseline in the study area is evolving and will continue to evolve during the Humber 2100+ development, and after the adoption of the new Strategy, given the changing flood risk over time and the long-time period of the plan. For example, changes to bird populations and distribution in the

estuary are likely and in some cases irrespective of changes in flood risk. The possible trends in the baseline are presented in sections 4 and 5 of this report because the evolution of baseline needs to be considered in appraising the options, where practicable.

In addition, to enable a comparison to be made with how the risk of flooding would look in the absence of the Strategy, a scenario of 'do nothing' will be considered. This approach is consistent with the recommendations of the 2005 ODPM SEA guidance. Typical mitigation measures applied through regulation will be assumed and only 'residual' effects will be reported as predicted effects. No other Strategy-specific mitigation, unless stated, will be assumed. However, within this assessment, strategic mitigation measures will be recommended for any identified significant adverse effects.

2.5.2 Mitigation

Strategic mitigation measures will be recommended for any identified significant adverse effects. Mitigation measures applied at the strategic level will not be assumed in the scoring assessment. Mitigation and enhancement measures will be described in the Initial and Final SA Report text commentary, which will also describe predicted 'residual' effects after mitigation measures have been taken into account.

2.5.3 Cumulative, secondary and synergistic effects

Cumulative effects may arise where several developments each have insignificant effects but together have a significant effect. These may include the following:

- **Secondary or indirect** effects are effects that are not a direct result of the Strategy, but occur away from the original effect or as a result of a complex pathway. Examples of secondary effects are a development that causes hydrological changes and thus affects the ecology of a nearby wetland; and construction of one project that facilitates or attracts other developments.
- **Cumulative** effects arise, for instance, where several developments each have insignificant effects but added together have a significant effect; or where several individual effects of the plan (e.g. noise, dust, visual) have a combined effect.
- **Synergistic** effects interact to produce a total effect greater than the sum of the individual effects. Synergistic effects often happen as habitats, resources or human communities get close to capacity. For instance, a wildlife habitat can become progressively fragmented with limited effects on a species until the last fragmentation makes the areas too small to support the species at all.

Cumulative effects will be assessed at the preferred option(s) SA stage. There are significant levels of uncertainty associated with cumulative effects assessments, as they are largely based on subjective extrapolations, as recognised in the ODPM SEA Guidance.⁵

2.6 Consultation

Consultation with key stakeholders is planned at various stages of the SA. See Table 1.1 for consultation that has been completed and is planned.

Consultation on the Scoping Report has been completed. We thank the consultees from partner organisations who have identified a few additional sources, particularly policies and projects, during the SA Scoping Report consultation process. A record of consultation responses is provided in Appendix 4.

2.7 Inter-relationship with the Strategy-making process and SA process

The SA process is integral to Humber 2100+ development. The SA stages interact with the Strategy at key points of the programme, as described in Section 2.4, to help inform decision-makers about potential environmental,

⁵ ODPM, 2005. A Practical Guide to the Strategic Environmental Assessment Directive. Practical guidance on applying European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment". Office of the Deputy Prime Minister, September 2005.

social and economic impacts of the options. The main areas the SA will influence the Strategy will be through advising on the sustainability issues and opportunities during:

- the appraisal of options (on the long and short lists);
- selection of the preferred options; and
- development of the preferred options, enabling them to be modified to improve their environmental, social and economic performance.

It is important that the consultation on the SA Framework (which is a statutory requirement for the SEA element of this SA) via this Scoping Report is completed before the Strategy appraises the options (long list and short list). A high-level version of the SA framework of objectives will be incorporated in the Strategy options appraisal methodology (Appraisal Summary Table), integrating the two appraisals processes further.

The SA findings and consultation responses will be shared with the team members, client and partners who will be developing, reviewing and approving the Strategy at various stages, through team discussions, workshops and reports. The influence of the SA on the Strategy-making process will be reported in the Post-Adoption Statement.

2.8 Connections with other studies and assessments

2.8.1 Habitats Regulations Assessment

The Habitats Directive is transcribed into UK law by The Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations')(see Section 3.1). The project will complete a Habitat Regulations Assessment (HRA) of the preferred options to comply with the Habitat Regulations.

The Habitats Regulations require that where it is not feasible to prevent the deterioration of a Natura 2000 site, i.e. where a scheme will result in likely significant effects and adverse effects on the integrity of the site, but where there are no environmentally better alternatives and there are reasons of overriding public interest for the scheme to take place, compensatory measures should be taken to maintain or enhance the overall coherence of the Natura 2000 network. Compensatory measures can include creating habitat on a new or enlarged site, to be incorporated into the Natura 2000 network (European Commission, 2000). These would need to be set out for approvals in an 'appropriate assessment', reported in the HRA, as was done for the existing Strategy.

Information from the HRA will support the SA appraisal of options against biodiversity objectives relating to the Natura 2000 sites.

2.8.2 Water Framework Directive Assessment

The Water Framework Directive (WFD)⁶ 2000 requires all natural water bodies to achieve both good chemical status and good ecological status. Water bodies that are designated in the River Basin Management Plan (RBMP) as Heavily Modified Water Bodies (HMWB) or Artificial Water Bodies (AWB) such as the Humber, may be prevented from reaching good ecological status by physical modifications (e.g. navigation, flood defence, urbanisation). Instead they are required to achieve Good Ecological Potential (GEP), through implementation of a series of mitigation measures outlined in the applicable RBMP.

The project will complete a WFD compliance assessment of the preferred options to identify the likely effects on the waterbody and WFD status, including cumulative effects, alongside recommendations for achieving GEP through flood risk management-related mitigation measures.

⁶ Water Framework Directive (Directive 2000/60/EC), implemented in England by the Water Environment (Water Framework Directive) (England and Wales) Regulations (SI 3242/2003).

Information from the WFD assessment and recommended WFD mitigation measures will support the SA baseline setting and appraisal of options against SA objectives relating to the water environment, and refinement of the preferred option to improve sustainability performance.

2.8.3 Landscape, green infrastructure and investment studies

The project will be developing a detailed narrative for the study area that highlights the key opportunities where investment in flood risk management works could be integrated with landscape and green infrastructure opportunities, if additional funding was available. This work will also be considering the less tangible benefits of delivering flood risk management works, such as benefits related to the health system, social services, and infrastructure.

Information from this work will support the later stages of SA at appraisal of options against social, environmental and economic SA objectives relating to landscape and green infrastructure and less tangible benefits of the Humber 2100+ Strategy.

2018 Version

3. Regulations, Policies and Plans Review

3.1 Introduction

Flood risk management is subject to many pieces of international and national legislation. Since much of the international legislation relevant to the Humber 2100+ Strategy is implemented through the national and local level policies and plans, only the national, regional and local policies and plans relevant to the new Strategy have been reviewed. For example, the EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora has been transposed into national legislation as The Conservation of Habitats and Species Regulations 2017.

Recognising the UK's current EU exit process, the position of the Environment Agency is as follows: while the UK remains a member of the EU we must continue our business as usual and implement and enforce all EU law, unless an exception to this has been specifically stated. The EU (Withdrawal) Bill will convert all EU law into UK law, and will only allow the UK to make amendments are leaving the EU. We will continue to ensure compliance with EU directives beyond the UK's exit from the EU until such a time that they cease to be required under UK law.

A comprehensive list of national and local policies and plans is provided in Appendix 1. A summary of the key messages from this review is presented below.

3.2 Regulations

The Conservation Habitats and Species Regulation 2017.

Known as 'The Habitats Regulations', these Regulations consolidate and update the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations 2010"). The Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations 2017") transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive) and elements of Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive") in England, Wales and, to a limited extent, Scotland and Northern Ireland.

These regulations continue to provide for the designation and protection of 'European sites' (SACs and SPAs) or a 'European Marine Site' and the protection of 'European protected species' listed in Schedule 2. The Regulations require competent authorities to carry out an appropriate assessment in circumstances where a plan or project is likely to significantly affect a European site or a European Marine site (see section 2.8.1).

Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (SI 2003/3242).

The main objectives of the Water Framework Directive are to protect and enhance surface freshwater (including lakes, streams and rivers), Transitional and Coastal (TraC) waters, groundwaters and dependant ecosystems. The Environment Agency is the 'competent authority' in England and Wales responsible for implementing the regulations.

The Wildlife and Countryside Act 1981 (as amended).

Sites are notified as Sites of Special Scientific Interest under this Act for their important flora, fauna, geological or physiographical features, Limestone Pavement Orders, and Marine Nature Reserves. Assent from Natural England for operations by the Environment Agency is required under Sections 28H and 28I (Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000) before any works which might adversely affect a SSSI are undertaken. Sections 28G-I place duties on public bodies to further the conservation and enhancement of SSSIs, both in carrying out operations and in exercising decision-making functions. The Act also allows for the protection of wildlife (birds, some animals and plants) listed in Schedules 1, 5 and 8.

Marine and Coastal Access Act 2009

Provides a legal mechanism to help ensure clean, healthy, safe, productive and biologically diverse oceans and seas by putting in place a system for improved management and protection of the marine and coastal environment. The Act introduced a new system of marine management. This included a new marine planning system, which makes provision for a statement of the Government's general policies, and the general policies of each of the devolved administrations with regard to the marine environment, and also for marine plans which will set out in more detail what is to happen in the different parts of the areas to which they relate. The Act includes provision for changing the system for licensing the carrying on of activities in the marine environment. It provides for the designation of marine conservation zones (MCZs). It changes the way marine fisheries are managed at a national and a local level and modifies the way licensing, conservation and fisheries rules are enforced. It allows for designation of an Exclusive Economic Zone for the UK, and for the creation of a Welsh Zone in the sea adjacent to Wales. The Act also amends the system for managing migratory and freshwater fish, and enables recreational access to the English and Welsh coast.

3.3 National Policies and Plans

A Green Future: Our 25 Year Plan to Improve the Environment, 2018.

The 25 Year Environment Plan sets out government action to help the natural world regain and retain good health. It aims to deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats. It calls for an approach to agriculture, forestry, land use and fishing that puts the environment first. The plan commits the government to championing sustainable development, lead in environmental science and innovate to achieve clean growth and increase resource efficiency to provide benefits to both our environment and economy.

Countryside and Rights of Way (CROW) Act 2000.

Makes some amendments to the Wildlife and Countryside Act (1981) and provides additional protection to Areas of Outstanding Natural Beauty and Public Rights of Way.

The National Flood and Coastal Erosion risk Management Strategy for England, 2011.

The Flood and Water Management Act 2010 (section 7) requires flood and coastal erosion risk management authorities to aim to contribute towards the achievement of sustainable development when exercising their flood and coastal erosion risk management functions. The strategy details actions which can be taken to manage flood risk and mitigate impacts on communities and a key theme throughout is inclusion of communities at risk. To mitigate risks the FCERM identified that government will need to work with organisation, individuals and communities to- understand the risks of flooding and coastal erosion; avoid inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks; build, maintain and improve flood and coastal erosion management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society; increase public awareness of the risk that remains and engage with people at risk to make them more resilient; and improve the detection, forecasting and issue of flooding, planning for and coordinating a rapid response to flood emergencies and promoting faster recovery from flooding.

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

The NPPF sets out the government's planning policies. Of particular relevance to the strategy are policies relating to the historic environment, biodiversity and geological conservation, and climate change and flood risk.

Creating a better place - our ambition to 2020, 2016.

This strategy document sets out the Environment Agency's objectives and aspirations for 2020. The objectives are:

- A cleaner, healthier environment which benefits people and the economy.

- A nation better protected against natural threats and hazards, with strong response and recovery capabilities.
- Higher visibility, stronger partnerships and local choices.

Some of the aspirations for 2020 include, increased biodiversity and improved habitat, cleaner water used in a more sustainable way, productive lands and soils, well protected designated sites.

3.4 Regional, sub-regional and local policies and plans

3.4.1 Flood and coastal erosion risk management plans

The Humber Estuary Shoreline Management Plan (HESMP) 2001

Shoreline Management Plans are high level documents that set the long-term policy framework for coastal and estuarine flood risk management. The Environment Agency prepared the HESMP (2001) whose policy recommendations were as follows:

- 1) Hold the existing defences where there is no justification for moving them.
- 2) Identify sites where moving the defences will provide flood defence benefits, taking social, environmental and economic issues into account, and establish a programme for moving these defences.
- 3) Support the creation of new inter-tidal habitat to maintain the estuary's nature conservation status.

The HESMP identified locations throughout the Estuary where the above policies would be pursued, subject to further investigation, and provided a means of communicating these policies to the key consultees and the wider public. The HESMP and Humber Estuary Coastal Habitat Management Plan (CHaMP) (see below) were later developed into the existing Humber FRM Strategy (2008).

Flamborough Head to Gibraltar Point Shoreline Management Plan 2010

The Flamborough Head to Gibraltar Point Shoreline Management Plan was published in 2010, combining the study area of two earlier SMPs, thus superseding them, covering the east coast of England from Flamborough Head to Gibraltar Point. The study area of the Strategy has considerable overlap with this SMP study area, from Immingham to Saltfleet on the south bank, and Sunk Island to Easington on the north bank. The 2010 SMP was developed in cognisance of, and in alignment with, the current Humber FRM Strategy. Any changes now made to the Humber Strategy that have an impact on SMP implementation will be assessed and resolved.

The Humber Estuary Coastal Habitat Management Plan (CHaMP) 2005

The Humber Coastal Habitat Management Plan (CHaMP) (Environment Agency, 2005) was produced to inform the development of a more detailed strategy to manage the risk of flooding around the Humber Estuary. In addition to the increased risk to people, property and land uses, the rising sea levels are causing loss of inter-tidal habitats within the estuary; these habitats are prevented from migrating inland by the existing flood defences (a process known as 'coastal squeeze'). The CHaMP provides a framework for managing sites of European importance and Ramsar sites that are located on or adjacent to dynamic coastlines. The primary functions of the Humber Estuary CHaMP are to:

- provide a clear and agreed record of predicted habitat losses and gains, and other potential impacts on the habitats and species of European or international importance subject to shoreline change; and
- set the direction for habitat conservation measures to address net losses.

The Humber Estuary CHaMP commits the Environment Agency to compensate for the loss of inter-tidal habitat on the following basis (unless agreed otherwise on a site by site basis or as a result of future Strategy / CHaMP reviews):

- 1:1 replacement for coastal squeeze and temporary disturbance from FRM schemes (1 ha of new habitat for each 1 ha lost), and
- 3:1 replacement for permanent loss due to flood defence works (3 ha of new habitat for each 1 ha lost).

Humber River Basin Management Plan 2015

The RBMP was originally prepared under the Water Framework Directive assessed water body status of the various water bodies in the Humber area and subsequently updated in 2015 to report on the status of the water bodies, state the objectives and design an action plan to achieve the objectives. Key issues affecting the achievement of good ecological potential on the Humber, include physical modification to water bodies (e.g., because of flood defences), pollution from waste water, pollution from towns and cities and changes in water flow. The plan sets out various actions to address the issue of water pollution with an aim to achieve WFD objectives. The plan also informs on land-use planning as land and water resources are linked.

Flood Defences Cost Money, No Flood Defences Cost More: An Economic case for the Humber and United Kingdom 2014

This Briefing Paper summarises the strategic importance of the Humber Estuary to the regional and national economy and its susceptibility to a major tidal surge. It highlights the significant scale of expected damages to the economy from a surge incident equivalent to that experienced in December 2013 but with the added influence of climate change and less favourable wind and tide conditions. The briefing paper presents data relating to the cost of previous flood events and compare against predicted future costs in the event that investment is not procured for the Humber area.

Other flood risk management plans

The main tributaries draining into the Humber Estuary, which are included in the new Strategy study area, have other plans (e.g. Catchment Flood Management Plans (CFMP), Flood Risk Management (FRM) strategies) or draft plans in development. The documents reviewed are the Ouse CFMP, Tidal Trent FRMS, Grimsby and Ancholme CFMP, Aire CFMP, River Don FRMS, Isle of Axholme FRMS and the River Hull Integrated Catchment Strategy (RHICS).

3.4.2 Strategies for economic growth

Northern Powerhouse Strategy

The Strategy, published in Autumn 2016, sets the government's ambition to drive economic growth in the region through investing in improving transport linkages between the Northern cities, work with local authorities to promote education and skills and to establish that the North is an excellent destination for trade and investment.

2014-2020 Strategic Economic Plan (SEP) for the Humber, 2014

Prepared by the Humber Local Enterprise Partnership (LEP) in 2014, this SEP will form the basis of a Growth Deal with Government and will be a determinant of the Humber's allocation of the Local Growth Fund. The SEP is at the centre of the strategic framework through which economic development will be taken forward over the next five years and beyond. The document has five strategic aims-creating an infrastructure that supports growth: supporting businesses through the provision of expert guidance and appropriate finance; ensuring the availability of an excellent standard of housing, town centres and visitor attractions in the Humber LEP area; providing for a skilled workforce; and investing in flood defences and coastal risk management while promoting sustainable development activities.

2018-2022 East Riding Economic Strategy (under consultation)

Prepared by the East Riding of Yorkshire Council, the strategy identified four priorities to enable the East Riding to respond to the Government's vision at a local level and complement the ambitions of the Humber Local Enterprise Partnership and the York, North Yorkshire and East Riding Local Enterprise Partnership. The four priorities identified in the strategy are - Business growth; Lifelong learning; Quality locations and Sustainable economy. The strategy aims to build on the East Riding's specialisms, such as those in food, manufacturing and the renewable energy sector, while continuing to address longstanding challenges in productivity, innovation, business growth, skills demand and existing pockets of deprivation in urban, rural and coastal areas.

2015-2025 Strategic Economic Plan (SEP) for the York, North Yorkshire and East Riding LEP, 2016

This SEP forms the basis for ensuring York, North Yorkshire and East Riding Local economy is growing strongly, creating jobs and delivering major economic opportunities for the future. It details how this will be achieved but centrally it comes down to 5 priorities- Profitable and Successful Businesses; A Global Leader in Agri-Food and

Bio-renewables; Inspired People; Successful and Distinctive Places; and a Well-Connected Economy. The SEP has informed the Growth Deal and the Local Growth Fund.

Since securing funding 2017, York, North Yorkshire and East Riding (YNYER) has commenced works on a joint energy strategy with Leeds City Region which will form a Northern Powerhouse Energy Strategy with clear work streams for the M62 and also local network development. Although still in the early stage of development it may become relevant to the Humber Strategy study area.

Growth Ambitions for the Greater Lincolnshire LEP, 2014

Prepared by the Greater Lincolnshire LEP in 2014, the document sets growth ambitions for the region and also sets out series of actions to achieve this. The economic ambitions for Greater Lincolnshire are improved infrastructure; creating the right conditions for business growth; rural enterprise; retail; communications and engagement. The South Humber Industrial Investment Programme (SHIIP) is funded by Greater Lincolnshire LEP.

Sheffield City Region LEP, 2014

This Plan, combined with the Sheffield City Region European Structural and Investment Funds Strategy (ESIF), presents a strategy for accelerating business growth and job creation in the City Region (which includes the south-west of the study area). Over the next 10 years the City Region's ambition is to deliver 70,000 net additional jobs, increase GVA by 10% or £3bn and create 6,000 new businesses. The Plan objectives relate to aiding economic growth, attracting inward investment, enhancing skills of the workforce and infrastructure improvements.

Regeneration & Growth Strategy Bassetlaw District, 2014

Bassetlaw District falls within both the region covered by the D2N2 Local Enterprise Partnerships and the Sheffield City Region and therefore Bassetlaw District council is considered an 'over-LEP' authority. Prepared by Bassetlaw District Council, the document focuses on the long-term objectives for sustainability, positioning the district as an important economic centre outside of the major conurbations of Sheffield City Region and the economic centres covered by the D2N2 Local Enterprise Partnership (LEP).

Although not a plan, the Northern Powerhouse is a government initiative to increase inward investment in the Northern region which involves Local Enterprise Partnerships, academia, local and combined authorities and the private sector. Many projects and investment opportunities are being developed to provide a boost to the Northern region.

3.4.3 Local authority plans

At the time of writing this report the local authorities within the study area were at variable stages of a new Local Plan production process. These plans, when adopted, will replace existing planning policy documents such as Core Strategy but typically will have carried forward most of the saved policies from the Core Strategy. For this reason, we have reviewed draft new Local Plan documents that are in advanced stages of the plan preparation, assuming they will pass the legal test of soundness and will be eventually adopted. This section will be reviewed in the subsequent stages of the SA. Where New Local Plan preparation is in early stages, for example at Issues and Options Stage, we have reviewed the existing Core Strategy document to inform the SA Framework.

The content of the following planning policy documents informed the policies and plans review:

- Adopted East Riding of Yorkshire- Local Plan (2012-2029);
- Adopted East Riding of Yorkshire Councils Local Flood Risk Management Strategy (2015-2027);
- Adopted Kingston upon Hull- Local Plan (2017-2032);
- North Lincolnshire- Core Strategy has been reviewed as the new Local Plan Issues and Options stage has not started; status- not adopted.
- Bassetlaw- a new Bassetlaw Local Plan is in early stages of preparation; status- not adopted. Bassetlaw District Council neighbourhood plans are being developed for the parishes of Walkeringham and Misterton, adjoining the northern sections of the Trent within Bassetlaw.

- North East Lincolnshire- Further to the Planning Inspector Examination, Main modifications were made to the Local Plan and a public consultation on the Main Modifications is ongoing (October 2017); status- not adopted.
- West Lindsey District Council-Adopted Central Lincolnshire Local Plan (2012-2036)
- East Lindsey District Council- Following Submission and review, a Main Modifications draft of the Local Plan has now been prepared; status - not adopted.
- Adopted Selby District Council-Core Strategy Local Plan (2011-2017);
- Doncaster Metropolitan Borough Council- Local Plan is under production; submission is planned for Autumn 2017; status- not adopted.

All above mentioned local authorities have many Neighbourhood Development Plans or Neighbourhood Development Orders, both in draft format and some adopted. These Plans will be considered in the context of the Strategy to identify how they can complement each other as well as to capture potential conflicts. As the Strategy study area and flood cells are finalised, the SA will identify all relevant Neighbourhood Plans and consider them throughout the appraisal process.

3.5 Key messages

Key messages from the review of the national and local policies and plans that apply to the study area are:

- There are various flood risk management strategies for the study area, and themes of managing and responding to climate change throughout many policies and plans.
- The Environment Agency has a role to further the conservation and enhancement of natural beauty, and the conservation of flora, fauna and geological or physiographical features of special interest.
- The local authorities located within the study area also have a responsibility to the conservation of nature and heritage and have a role in the planning and management of land-use to meet current and future housing and economic growth demands. The Strategy options might be subject to these planning considerations.
- All local authorities incorporate flood risk management requirements for new development proposals, stated in their local plans or core strategy policies.
- Each of these local authorities propose spatial development areas and sites allocated for various land-use types, including residential and employment. In addition, some authorities also propose Area Action Plans for specific areas within their boundaries where masterplan development and supplementary planning policies might apply. See Appendix 1 for a brief review of relevant policies from the local plans and area action plans that the Strategy and the SA must take into consideration and Figure 7 in Appendix 2 for location of some of the proposed development areas.
- The Strategy should have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, historic or engineering interest.
- The Strategy should have regard to the desirability of preserving public access to the beaches, accessible areas of the coast or foreshore and other places of natural beauty.
- The Strategy should take into account effects that proposals may have on the preservation of public access or on the beauty or amenity of any rural or urban area, or on any flora, fauna, features, buildings, sites or objects.
- The Strategy should take into account effects that proposals may have on access to rural settlements that in turn could have an effect on employment and/or accessing community amenities.
- The Strategy should have regard to the aspiration and the various growth plans the sub-region, including that of the Northern Powerhouse Strategy and of individual local authorities to promote a low carbon economy, to promote renewable resources and contribute to reducing carbon emissions.
- In general, there are other government bodies and partner bodies such as the Local Authorities, Natural England, Humber LEP, Greater Lincolnshire LEP, Sheffield City Region LEP, Internal Drainage Boards who share similar objectives around flood risk management, economic development and environmental management. Opportunities for joint working, including seeking funding, exist for the Strategy. It is worth noting that the consultation on this Scoping Report is part of the efforts to support joint-working.

4. Baseline Reporting – Social and Economic Factors

4.1 Population and human health

4.1.1 Population

Over 1.5 million people live in Humber sub-region, with two thirds of the population living in urban areas and a third in rural areas. The proportion of rural or urban nature of the populations greatly differs between the local authorities within the study area (Table 4.1). Key urban centres include Kingston upon Hull, Goole, Immingham, Barton-Upon-Humber and Cleethorpes. These locations are also major employment and growth centres, and are important for housing, industrial and port operations. Bassetlaw and East Riding of Yorkshire are predominantly rural in nature; these areas along with North Lincolnshire and North-East Lincolnshire contribute significantly to the agricultural economy, both regionally and nationally.

The most recent census data was analysed for current population information based on the local authority areas, but data for the 'Yorkshire and the Humber' and 'East Midlands' sub-regions⁷ were reviewed for future projections.

Table 4.1 2011 Census population data for the study area

Local authority	Percentage rural population	Percentage urban population
East Riding of Yorkshire	43.9	56.1
City of Kingston upon Hull	0	100.0
North Lincolnshire	45.0	55.0
North East Lincolnshire	9.9	90.1
West Lindsey	76.1	23.9
East Lindsey	62.9	37.1
Bassetlaw District Council	42.2	57.8
Doncaster Metropolitan Borough	13.9	86.1
Selby	75.6	24.4

Note: Large Market Town Population has been classified as Urban Population

4.1.2 Demography

Age distribution appears to be similar across the local authorities within the study area (Table 4.2), with persons under 16 years ranging from 15% to 19%. The population over 65 years of age is lower in the urban settlements of Kingston upon Hull, Doncaster and Selby. The highest proportion of ageing population is at East Lindsey, followed by East Riding of Yorkshire.

⁷ Although the sub-regions do not formally exist, statistics and projections issued by ONS have been used for information.

Table 4.2 Population-age distribution

Local authority name	% Persons under 16	% Persons 16-44	% Persons 45-64	% Persons 65 and over
Bassetlaw District Council	17.86	34.79	28.79	18.55
Doncaster Metropolitan Borough	19.01	37.39	26.69	16.91
City of Kingston upon Hull	18.86	43.19	24.01	13.94
East Riding of Yorkshire	16.71	32.14	29.77	21.38
North East Lincolnshire	18.94	36.70	26.63	17.72
North Lincolnshire	18.72	35.34	28.00	17.94
West Lindsey	17.36	31.45	30.31	20.87
East Lindsey	15.38	28.60	30.04	25.98
Selby	18.35	35.19	29.67	16.78

Population over the age of 65 is projected to grow at the fastest rate by comparison to other age groups across the whole of England. In the 'Yorkshire and The Humber' sub-region the growth will be slightly slower at 18.3% than the England average of 20.4%, whereas in the 'East Midlands' growth is projected to be 22.0%.

Population projections for the year 2024 (using a Mid-2014 ONS (Office for National Statistics, 2014) population estimates) for Yorkshire and The Humber sub-region indicate a 4.6% growth, 2.9% slower than projected national growth. The projected growth for East Midlands (is 6.7%, which is 0.8% slower than the national average. Of the local authorities in the study area, Selby is projected to have the highest population change by 7.3% (2014-2024) and Northeast Lincolnshire with the lowest at 1.1%. Although growth is projected to be slower than the national average there will be a need to make housing space for the growing population, both in the rural and urban areas of the study area and to consider the needs of the ageing population. A review of the relevant policies and development plans are discussed in section 3, Appendix 1 and subsequent sections.

4.1.3 Flood risk and human health

Currently, the homes of more than 400,000 people around the estuary are at risk of tidal flooding (including storm surges in the North Sea), and are protected to varying standards by existing flood defences. Most of these people are concentrated in the urban areas, with relatively fewer people living in the larger, rural expanse of the study area.

The health of people living with flooding and the fear of flooding can be affected in the short and long-term. In addition to the risk to life and physical injuries and restriction to health services, recent studies by Public Health England (2017) noted impacts of flooding and flooding-related disruption on mental health and wellbeing. This includes high levels of probable depression, anxiety and PTSD amongst those who had floodwater in their homes, but also elevated levels in those whose homes were not flooded but whose lives were otherwise disrupted. Amongst those whose homes were flooded a number of factors, which may reflect severity of flooding, were associated with a higher risk of poor mental health outcomes.

Future trend:

- The population is projected to grow in 'Yorkshire and The Humber', and 'East Midlands' sub-regions, albeit slower than the national average, between years 2014 and 2024.
- Population aged 65 and over is predicted to grow at the fastest rate compared with other age groups in every region of England (2014 mid-year ONS estimates).

- Flood risk, and its associated physical and mental health impacts on the communities at risk, is predicted to increase in future with climate change.

Strategic issues:

- Communities are at flood risk throughout the study area, with differing standards of protection from existing defences, with concentrated areas of people at risk in the urban centres, and relatively fewer people at risk in the larger expanses of rural areas.
- Government funding for flood risk management is traditionally focussed where most people can benefit. Alternative sources of funding or less traditional measures such as adaptation and community resilience may need to be considered for the less populated areas.
- The percentage of urban versus rural population is almost in equal proportion when considered across the whole study area and across North Lincolnshire, followed by approximately a 60/40 urban/rural split at East Riding Yorkshire and Bassetlaw. However, population density in urban areas is high implying more people at risk of flooding are concentrated in the urban centres, and those at risk in rural areas are spread out in the study area.
- Local authorities with a higher proportion of rural populations have a higher proportion of people over 65 years of age.

4.1.4 Social deprivation

'Indices of Deprivation' is the official measure of deprivation in England and is a useful measure to help identify and evidence aspects of deprivation and social vulnerability in local areas. 'Indices of Multiple Deprivation' (IMD) consist of individual indices based on seven themes, or domains (with weightings in brackets): Income (22.5%), Employment (22.5%), Health and Disability (13.5%), Education, Skills and Training (13.5%), Barriers to Housing and Services (9.3%), Crime (9.3%) and Living Environment (9.3%). Analysis across individual domains help to better understand local level performance, however to inform the strategic nature of the SA, IMD is considered a good measure to present an overall picture of the state of the local area. For the purposes of this report, only the '10% Most Deprived Areas' and '20% Most Deprived Areas' were identified. See Figure 1 in Appendix 2 for the IMD map of the study area.

The urban centres of Hull, Grimsby, Immingham, Goole and Doncaster have populations living in the 10% and 20% Most Deprived Areas (GOV UK, 2015), and pockets in East Riding of Yorkshire, North Lincolnshire, and North-East Lincolnshire also host 10% and 20% Most Deprived Areas. Although East Lindsey and West Lindsey are reported to comprise many areas that also fall in the above category, they are not located within the study area boundary.

Future trend:

- The indices linked to IMD such as income and employment could be affected by the proposed economic growth plans in the region, depending on workforce skills. Similarly, a reduced risk of flooding could unlock opportunities that could be directly linked to the indices, for example Barriers to Housing and Services or Living Environment.

Strategic issues:

- The majority of the study area does not contain 10% or 20% Most Deprived Areas; however, where they are contained, they appear to be concentrated on few urban centres and towns where the majority of the study area's urban population reside and are at flood risk.

4.2 Access and recreation

Promoting sustainable development and green infrastructure links is a key overarching environmental goal in the Humber region. There are close links between access to community infrastructure, greenspaces, heritage assets, historic landscapes and local economic growth, community cohesion, leisure and recreation. It is in this context that this section discusses various access and recreation aspects in the study area.

Residents and visitors to the study area have formal access to the countryside and the coast via Public Rights of Way, National Cycle Routes, and National Trails (see Figure 2 in Appendix 2). This includes regional routes such as the Trans-Pennine Trail and the Viking Way. There is also informal access within the study area used for leisure or recreational purposes, including to the coast and estuary foreshore.

There is an ongoing proposal for the England Coast Path, a new National Trail around all of England's coast, due for completion in 2020⁸. This path is being developed by Natural England to comply with the Marine and Coastal Access Act. Within the study area, the proposed England Coast Path runs mainly along the edge of the estuary, with some inland diversions to avoid operational ports. The stretches encompassing the Humber Estuary start at Easington on the north bank, running westwards to Hessle, across the Humber Bridge and then eastwards along the south bank of Mablethorpe. The path will roll back in response to coastal erosion events or to reflect future changes to the coast due to managed realignment. The England Coast Path is designed to provide access on foot only. The route of the path and any restrictions applied to access will address impacts to the Humber Estuary designated site, alongside any mitigation measures that may be implemented. Of its many objectives, this Path is envisaged to adapt to the impacts of coastal erosion. The Coast Path is a pedestrian only path.

Based on the Natural England's Yorkshire and Humber Green Infrastructure Study (2010), the recent Humber Landscape and Green Infrastructure Study (Cambridge Studios (Sheils Flynn)), identified five strategic green infrastructure sites in the study area (see Figure 2 in Appendix 2 and section 5.4.3), with potential access and recreation uses for these. These are:

- Humber Bridge Hinterland – Wetlands, cycleways and Country Parks;
- Cleethorpes and Tetney – Eco-tourism and nature watching;
- Goole Hinterland – River views and farmland connections;
- Hull Waterfront – A string of destinations along the banks of the Humber; and
- Humber Estuary farmland – Options for dynamic flood management.

Further information on the Natural England Yorkshire and Humber Green Infrastructure Study and detailed description of green infrastructure within the study area can be found on their website⁹.

There are many recreation facilities and destinations within the study area (such as nature reserves, country parks, coastal paths, and seaside resorts - see section 4.3.3) where outdoor pursuits regularly take place, such as walking, cycling, bird-watching, horse-riding, fishing and water sports. Key visitor destination location was mapped as part of the Humber Integrated Landscape and Investment Study (Cambridge Studios (Sheils Flynn), unpublished) reproduced in Figure 3 of Appendix 2.

Angling is another recreation activity, with active participants along various parts of the study area, whose activity is dependent on physical access to fishing areas, water levels and water quality which in turn will influence fish availability. A few spots within the study area considered good for fishing are Spurn Head, Humber Estuary (East Halton Skitter, Hessle area near the Humber Bridge), North Wall of Grimsby Harbour, Barton Upon Humber and Cleethorpes promenade.

Future trend:

- Access to the coast is becoming more formalised, with sections of the study area proposed to be part of England Coast Path, a new National Trail.
- There is likely to be an increase in nature-based tourism and outdoor recreation, particularly with the growing interest in the region and new proposals, such as the England Coast Path.
- Strategy interventions should balance access and recreation with biodiversity considerations, as this will be crucial to complement the conservation objectives of biodiversity designations in the study area.

⁸England Coast Path, Natural England <https://www.gov.uk/government/collections/england-coast-path-improving-public-access-to-the-coast> (accessed 23.10.17)

⁹Natural England Green Infrastructure Mapping Project http://webarchive.nationalarchives.gov.uk/20140605112209/http://www.naturalengland.org.uk/regions/yorkshire_and_the_humber/ourwork/yandhgreeninfrastructuremappingproject.aspx

Strategic issues:

- The Humber area has numerous facilities and destinations for access and recreation, both inland and along the coast, and through formal and informal access. These might also house sensitive environmental features, such as nature conservation sites. Current networks of footpaths, bridleways and trails connect many of these destinations.
- Local communities may access inter-tidal or coastal areas to undertake traditional activities such as foraging - these may not always be formal access routes and are often facilitated by the presence of existing flood defences.
- Many parts of the study area offer excellent spots for angling and the sport is dependent on water levels and maintenance of access to designated fishing areas.
- Green Infrastructure in the study area has varied potential, ranging from leisure, nature-watching to flood management which the Strategy could consider exploring, providing the impact on environmental receptors are recognised and managed.
- Flood risk management measures may impact on formal or informal access to the estuary and this should be considered within the strategy development.

4.3 Economic activity

4.3.1 Key economic sectors

The key economic sectors in the Humber area can be classified as manufacturing, shipping and logistics, agriculture and fisheries. Manufacturing accounts for 17% of the employment, by comparison to the English average of 8% (ONS, n.d.).

The chemicals and petrochemicals industry contribute to the economy of the sub-region: about 25% of the liquid transport fuels of the country are refined in the Humber; and the Humber area hosts 20% of the UK's natural gas landings. The region holds an important position in terms of the presence of oil and natural gas as it benefits from the proximity to the Southern North Sea gas fields.

In recent years, the Humber Estuary has gained prominence and has positioned itself to becoming what is called the 'Energy Estuary' by securing major investments in wind energy from companies such as Dong Energy and Siemens. These investments created jobs in the area and are expected to generate further jobs, which will trigger further jobs through the supply chain. There are also investments in the education sector to promote offshore wind energy related education.

The Humber Estuary is also an important trade gateway with an average of 40,000 ship movements per year. The area contains the UK's largest ports complex and its ports and wharves handle 14% of the UK's international trade (Humber Nature Partnership website). The Humber's growth zones and corridors are centred on the major ports of Grimsby, Goole, Hull and Immingham. Port and port-related developments add value to the area's economy and they present significant economic development opportunity in the Humber, particularly in relation to the development of manufacturing and servicing facilities for the offshore wind industry.

See section 4.5.4 for more analysis on the rural economy, and Appendix 3-1 for detail on the employment by sector.

4.3.2 Economic indicators

Employment figures for the region, as of January 2017, indicates 73.5% of the working age population are in employment in the Yorkshire and the Humber region, which is below the national average. Unemployment rate was at 5% for the same period, slightly higher than the national average but had fallen by 1.2% in comparison with the year 2016 (ONS, n.d.).

Significant numbers of the local population are employed in the manufacturing, wholesale and retail trade sector, administrative and support services sector and the agriculture sector in comparison to the national average. Employment in the construction sector is almost on par with the national average. Analysis of workforce

employment across the sectors between 2015 and 2017 did not suggest major shifts across the sectors, although this trend may change with the proposed growth plans to move towards the renewable energy sector.

The Gross Value Added (GVA) measure provides a useful indication of the trajectory of the local economy and although there are technical issues with estimating GVA at the local and regional level, it is widely accepted as a key measure of overall economic activity that could provide an indication of how productively the economy is utilising its resources (including labour). Manufacturing contributes 27% of the GVA in the Humber. A study by Hull Business School commissioned by the Humber Local Enterprise Partnership (University of Hull, 2016) shows that the Humber is below the nation's average on key metrics such as economic prosperity, productivity, manufacturing output, value-added jobs, skills, employment and social mobility. The study stresses the need for action to reverse the trend in the region. Some of the recommendations are- to consolidate the Humber as the Energy Estuary (renewable energy generation and related manufacturing); to develop the port-based economy and to develop an integrated multi-modal freight and passenger Gateway; and to support/ develop other sectors such as chemicals and processing and information and communication. It is of note that although GVA continues to lag behind national levels, information available in 2016 suggests that this gap is closing between the Humber and the rest of England.

4.3.3 Tourism and recreation

The study area consists of many tourism attractions and destinations both along the coast and inland (see Figure 3 in Appendix 2). These range from outdoor attractions such as beaches, parks, and nature reserves, to urban centres, such as Goole, Kingston upon Hull, Barton-upon-Humber and Cleethorpes, and various museums, theatres, galleries, historic buildings, aquarium, and holiday parks for example. In addition, there are various gardens, including Registered Parks and Gardens and historic buildings, such as Brodsworth Hall in Doncaster and Selby Abbey in Selby. The Deep aquarium at Kingston upon Hull attracts visitors throughout the year. Many of the attractions provide educational resources for the local communities and visitors. These assets reflect the area and its diversity so would not be easily replaced elsewhere.

Visitor economy, which includes food and service management, gambling, hotels, bars, restaurants, holiday parks, private accommodation providers, tourist services and visitor attraction centres, employs about 14,000 people in the Yorkshire and the Humber region and contributes to 2.4% of the region's employment. In addition to the physical features, tourism has had a boost in terms of investments in recent years with Hull chosen to be the UK City of Culture 2017 and from other opportunities such as Water's Edge Country Park visitor's centre (which opened in 2006).

The England Coast Path, delivered by Natural England, will form a National Trail around the coast of England, with the aim of bringing economic and health benefits to both visitors and coastal communities. As nature tourism to the Humber increases, careful management will be utilised – both as a part of the formal coastal access proposals and through partnership working with local stakeholders and local access authorities in order to ensure that important estuarine habitats and species are protected.

The Humber Nature Partnership's Humber Recreation Management Plan (Humber Nature Partnership, 2016) proposes recreation management zones around the Humber Estuary and emphasises the need to balance tourism's economic potential with the impact on the many designated features in the study area.

Future trend:

- Ambitious economic growth activities are planned for the Humber sub-region whose aim is to make the region a leader in low carbon economy, take advantage of and develop its port-based economy, as well as the chemicals-processing and Information, Communications and Technology sectors.
- Tourism activities, including increased formal access to the coast, is expected to increase in the future. This could contribute to visitor economy, however needs to be balanced with protecting the designated features in the study area.

Strategic issues:

- The manufacturing, ports and logistics, and agriculture are key sectors of employment in the study area.

- Unemployment rates are higher than the national average but have fallen slightly between 2016 and 2017. Levels of income inequality and the costs of resource depletion are higher than national average.
- The Humber's countryside and the coast are a major draw for tourists and for the local population.

4.4 Economic growth and inward investment

4.4.1 Introduction

The study area has several areas for planned economic growth, indicated by strategic economic partnerships and development planned by the local authorities.

4.4.2 Strategic economic partnerships

The relevant Local Economic Partnerships (LEPs) are the Humber LEP, Sheffield City Region LEP, York, North Yorkshire and East Riding LEP, and Greater Lincolnshire LEPs (see 3.4). LEPs promote partnerships of business, education and local authorities that work to secure funding and develop projects ranging from infrastructure investment, flood defences, major housing development, rail electrification, road improvements, education facilities, city and town centre regeneration (namely Hull, Grimsby, Goole, Scunthorpe, Cleethorpes and Doncaster, West Lindsey, Lincolnshire Lakes in the study area). Local authorities, through their Local Plans or Core Strategies, propose land-use policies and spatial plans to enable economic growth and associated development such as housing, shopping and leisure.

The Humber LEP has proposed the Humber Enterprise Zone to boost economic growth in the Humber sub-region. There are more than 40 Enterprise Zones located in North Lincolnshire, East Riding, North East Lincolnshire and Hull, offering a total of up to 290 ha land, located close to the four main ports, Goole, Grimsby, Hull and Immingham (see Figure 4 in Appendix 2).

Green Port Hull launched recently sets a vision to establish Hull and the East Riding of Yorkshire as world class centre for renewable energy. Hull City Council, East Riding Council, Associated British Ports and their partner organisations have secured Regional Growth Funding to support growth in the renewable energy sector (for opportunities in offshore wind, biofuels, waste to energy, solar, wave and tidal power generation) and contributing to future employment opportunities. ABLE Marine Energy Park is another significant project that will be a bespoke facility for the Renewable Energy Sector, particularly Offshore Wind and there are plans for this Energy Park to grow further (consented project). Humber is the last deep-water port in Europe for room for expansion.

Sheffield City Region LEP area covers Doncaster and Bassetlaw. The Sheffield City Region's Infrastructure Improvement Plan discusses schemes that the LEP will promote in order to support their economic growth plan ambitions. Of relevance to this study might be the DN7 Spatial Package where significant opportunity for growth in the low carbon sector through infrastructure provision for carbon capture, flood defence provision and connectivity improvement are identified as desirable infrastructure outcomes to support economic ambition.

The York, North Yorkshire and East Riding LEP which covers Selby and East Riding areas, also have ambitious economic growth plans and have allocated investments from their Local Growth Fund. Of relevance to Selby and East Riding parts of the study area is that these areas are identified for investments in road network and flood alleviation schemes to protect businesses and to unlock further development opportunities and to help create a resilient economy.

A summary of Sheffield City Region LEP is provided in Appendix 1 as the LEP area covers Doncaster and Bassetlaw. A review of the York, North Yorkshire and East Riding LEP, which covers East Riding of Yorkshire and Selby is also provided in the Appendix 1 and the review findings will be considered in the SA. Review of the Humber LEP is also provided in Appendix 1.

4.4.3 Spatial planning and development policies

All local authorities propose policies and plans to contribute to the achievement of sustainable development. The local authorities manage existing development proposals and allocate sites for future housing, employment

and other land uses such as retail, open spaces, and traveller sites through their Local Plans or Core Strategies policies, which in-turn will support the regional economic growth plans.

Some of these spatial plans are currently in consultation but are presented as draft in the review of the Local Plan and Core Strategy policies of all local authorities in the study area Appendix 1. Current employment sites are shown in Figure 5 and the locations of local authority proposal areas are shown in Figure 6 in Appendix 2.

Future trend:

- Should the vision for economic growth be realised, the Humber sub-region will become a leader in the low carbon economy, develop its port-based economy, as well as its chemicals-processing and ICT sectors.
- All relevant LEPs place emphasis on investing in many road improvements, along with rail line improvements and enabling multi-modal connectivity to boost the region's economy.
- Planning for new residential and associated developments will be critical in supporting the economic development plans for the sub-region.

Strategic issues:

- The Humber sub-region has several ambitious plans for economic growth through strategic economic partnerships and local authorities' spatial planning.
- The Strategy could have an influence on the viability of some of the proposed economic growth zones through the flood risk management solutions.

4.5 Rural land use and rural economy

4.5.1 Land use classification

Significant part of the study area falls within the 'predominantly rural' of 2011 Census Rural-Urban Classification, these include local authority areas of Bassetlaw, Doncaster, East Riding of York, East Lindsey, North Yorkshire County Council and North Lincolnshire. The majority of the study area is in agricultural use.

4.5.2 Farming

The total farmed area in the wider Yorkshire and Humber region is approximately 12% of the farmed land in England. The agriculture land classification information shows most of East Riding Yorkshire, North Lincolnshire Council and East Lindsey is composed of Grade 1 and Grade 2 Agricultural land, and the rest of the study area with Grade 3 to 5. See Figure 7 in Appendix 2 for distribution of the agricultural land classifications by local authority boundary.

Recognising the need to manage water pollution linked to agriculture and farming as well as to manage the landscape character, the Catchment Sensitive Farming scheme and Environmental Stewardship schemes are being progressed in the study area. The RSPB, in association with Environment Agency, is working with farmers in the Humber area to trial and disseminate information on flood management and adaptation techniques (such as temporary flood storage) to the benefit of farming (RSPB, 2016).

It is worth noting that many organisations, local communities and local businesses have come together to tackle environmental issues in the study area. An example is where the Humberhead Levels Partnership is helping to create a unique network of wetlands whilst supporting communities and wildlife through adopting sustainable land management practices¹⁰.

4.5.3 Fisheries

The estuary is recognised as an area for many commercially important species: six species of fish are caught commercially (sole, plaice, roker, cod, dogfish, and eel), although commercial fisheries are small. The estuary also provides nursery grounds for commercially important North Sea fisheries.

¹⁰ <http://www.ywt.org.uk/what-we-do/creating-living-landscapes-and-living-seas/south/humberhead-levels-partnership>

4.5.4 Rural economy

Almost 70% of Yorkshire and the Humber is farmland and is one of the UK's most important agricultural regions, producing 12% of England's agricultural output and employing 10% of the country's agricultural workforce. The region grows most of UK's important arable crops, and also grows energy crops and specialist oilseed and fibre crops (BioVale, n.d.). There are about 14, 000 people employed in the food and agriculture sector, including livestock farming in the Humber area accounting for 4.1% of employment in the Humber (LMI Humber, n.d.). Hull hosts the world's largest pea-processing plant.

Defra's aggregate agricultural accounts for Yorkshire and the Humber (and for a smaller part of the study area, East Midlands) were reviewed to gather information on the state of the agricultural economy in the study area. In 2015, predominant farm types were cereals, general cropping and livestock in both regions. The total income from farming has decreased between 2011 and 2015, reflecting on the national trend but the percentage decrease in the Yorkshire and the Humber region was lower than the national figure and was marginally higher than the average in the East Midlands.

Bioeconomy is an evolving concept and the Yorkshire and the Humber region already contributes to 10 % of the country's bioeconomy (BioVale, n.d.) including large scale industrial processes such as the production of biofuel at Saltend. The region is also seeing an increase in the diversification of farmland into agri-tourism. The nature of the countryside in the study area offers opportunities for nature tourism, which also has links to the access, recreation and landscape considerations of the Strategy.

Future trend:

- The Yorkshire and the Humber region accounts for 10% of the nation's bioeconomy and with the global move towards concepts of circular economy, this trend is likely to continue, dependent on government commitment and market take up.
- Large expanses of farmland will be subject to greater risk of flooding with climate change, if the risk is not addressed.

Strategic issues:

- The impact of the Strategy options on high value agricultural land (grades 1 and 2) and commercial fisheries must be considered in the SA.
- Agricultural areas that are less populated are typically less attractive to government funding for flood risk management than more populated areas, but may also provide the space for the flood risk management solution (such as flood storage or managed realignment) and opportunity for farming to adopt environmental stewardship practices.

Agricultural land management, agricultural landscape, flooding, habitats and wildlife and water pollution are inter-related, which is being recognised within the study area. This has led to initiatives such as Humberhead Levels Partnerships and Catchment Sensitive Farming schemes. These existing networks could help to explore opportunities to manage flood risk in the study area.

4.6 Material assets

4.6.1 Critical infrastructure

For the purposes of the Humber 2100+ Strategy, it is proposed to use critical infrastructure definitions relating to Categories 3, 4 and 5¹¹ of the Criticality Scale for national infrastructure (see CIRIA Guide - Flood resilience and resistance for critical infrastructure- C688) (CIRIA, 2010). A Critical Infrastructure Study, which will form part of evidence base to the Strategy development will be undertaken at a later stage and it is envisaged that this

¹¹ CAT 5- The loss of infrastructure that would have a catastrophic effect on the UK. These assets will be of unique national importance and their loss would have national long-term effects and may affect several sectors. Relatively few are expected to meet the Cat 5 criteria.

CAT 4- Infrastructure of the highest importance to the sectors should fall within this category. The effect of loss of these assets on essential services would be severe and may affect provision of essential services across the UK to millions of citizens.

CAT 3- Infrastructures of substantial importance to the sectors and the delivery of essential services, the loss of which could affect a large geographic region or many hundreds of thousands of people.

study will inform future SA stages to identify impact. At this stage, based on available information, critical infrastructure is identified below relating to transport and hospitals, power stations and utilities, and will be refined at a later stage in the project.

Transport

Roads play an important role in connecting the ports, such as Immingham, Grimsby, Hull and Goole and the many wharves located in the study area. Broad road corridors that have a key role in economic growth and serving as a link between the ports and areas inland are the A63/M62 road on the north bank and the A180/M180 road in the south bank area. The iconic Humber Bridge forms a major link between the north and the south bank of the estuary.

A significant part of the study area is rural in nature and there is evidence to suggest that there is a high level of car dependence particularly in rural areas, both for economic and social purposes.

Passenger and freight rail networks connect Hull with Selby and Goole and further west and to the north of the study area; similarly, the key economic growth areas of Grimsby, Immingham, Barton upon Humber and Cleethorpes are connected to the west to Scunthorpe, Doncaster and beyond.

Goole also provides a key interface between rail, road, the Humber Estuary and the inland waterway network west to Leeds. The Goole Intermodal Project, which has received LEP endorsement, will help to facilitate a greater use of inland waterway.

As described in Section 4.4.1, the Humber Estuary is also an important trade gateway with an average of 40,000 ship movements per year. The area contains the UK's largest ports complex and its ports and wharves handle 14% of the UK's international trade (Humber Nature Partnership website). Port and port-related developments add value to the Humber area economy directly as well as indirectly in supporting the development of manufacturing and servicing facilities for the offshore wind industry and other industries.

Hospitals, power stations and utilities

The following are known critical infrastructure features that are located within the study area, gathered using open source data; with modelling data analysis due to be conducted as part of the Strategy, we will determine whether these features are at risk.

- Hospitals - Hull Royal Infirmary and Goole and District Hospital;
- Power stations - Immingham, Salt End, South Humber Bank and Drax (Selby); and
- Various petro-chemical and gas terminal transfer facilities including gas transmission pipelines.

There are likely to be emergency service assets, National Grid Power Sub-stations and linked assets, water and waste water treatment assets and schools and universities that fall within the study area boundary and which may be at risk of flooding. Humber is the landing area for a large amount of offshore wind, which is another potential source of power that is a key driver for economic growth in the area. Further stages will explore ways to gather this data, including reference to a proposed critical infrastructure study to inform the Strategy.

See Figure 8 in Appendix 2 for the strategic road, rail network with location of ports and known infrastructure within the study area. Further information, if received as part of this consultation, will be used to update this section for future SA stages.

4.6.2 Mineral sites

The Joint Minerals Plan Kingston Upon Hull & East Riding of Yorkshire (Hull City Council & East Riding of Yorkshire, 2004) reports that the joint area has significant deposits of a wide range of minerals. Its simplified geology map indicates deposits for the whole of Kingston upon Hull and eastern section of East Riding of Yorkshire composed of salt, central section of East Riding of Yorkshire composed of crushed rock and some sections of the western side of East Riding of Yorkshire composed of sand and gravel. Other minerals include chalk, clay, silica sand and peat. There are also potential resources of oil, gas and coal, and for underground storage of gas. The Joint Minerals Plan is currently being revised and expected to be adopted late 2017.

Also, the Humber Estuary includes one of the six main dredging areas off the coasts of England, which produces marine dredged aggregates (mixture of gravels, sandy gravels and gravelly sands, and sand banks) (Atkins, 2010).

North Lincolnshire Council are preparing a Minerals and Waste Development Plan document (Issues and Options), and are working on evidence base, for example, the draft Humber area Local Aggregates Assessment (commissioned by North East Lincolnshire, East Riding of Yorkshire and Kingston upon Hull Councils). In the absence of a Minerals and Waste Development Plan, the strategic minerals policy in the Core Strategy of North Lincolnshire Council (North Lincolnshire Council, 2011) will apply in the interim.

A plan showing mineral extraction zones and some areas safeguarded for possible future mineral extraction in the study area, and is shown in Figure 9 in Appendix 2.

Nottinghamshire County Council is currently in the process of preparing a new Minerals Local Plan, which when adopted will replace the current Mineral Local Plan. The Issues and Options consultation of the new plan is ongoing. When mineral sites and safeguarded sites information are updated as part of the new plan, this baseline chapter and Figure 9 in Appendix 2 will be updated (providing the new plan is complete before finalising the Strategy).

The study area hosts chemicals and petrochemicals and oil refineries that supplies significant resources to the rest of the country, hence an important mineral resource. Most of the study area is covered by onshore oil extraction licence which only indicates potential and not necessarily that oil is being or will be extracted from these locations. However, from the Strategy perspective, this information may be relevant when considering location specific options.

Future trend:

- The study area includes areas safeguarded areas for future mineral extraction. East Riding of Yorkshire's salt resources are limited - once mined they could be a suitable location for underground storage of gas.

Strategic issues:

- The Humber Estuary's critical infrastructure is important for the region's economy, especially the strategic road and rail networks and the ports, and for serving the local communities. Protecting these critical infrastructure assets from the risk of flooding will be crucial in advancing the planned economic growth of the region. The Strategy should seek to align with the strategic plans of Highways England, Network Rail, National Grid, the Humber LEP and other national or regional agencies.
- The study area comprises varied types of mineral resources. Mineral working can have positive or detrimental effects in managing flood risk. Strategy development should consider direct and cumulative impacts on minerals safeguarded areas, if any are near proposed option sites.

5. Baseline Report – Environmental Factors

5.1 Biodiversity

5.1.1 Statutory designated features

The Humber Estuary is a large, muddy, macrotidal estuary, providing a highly productive ecosystem that supports a wide range of habitats and species. The estuary has component intertidal and subtidal habitats (mudflats, sandflats and saltmarsh) and associated saline lagoons, sand dunes and standing waters. The assemblage of breeding birds is of importance, and the wildfowl and wader numbers can rise as high as 200,000 during winter months. The estuary also supports various mammals, fish, invertebrates and plants, some of which are rare or threatened, including Natterjack toads (*Epidalea calamita*), grey seals (*Halichoerus grypus*), river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*).

The Humber Estuary is recognised as one of the most important estuaries in Europe for nature conservation and is protected by multiple international nature conservation designations: the Humber Estuary Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Site. The Estuary also has national designations: Sites of Specific Scientific Interest (SSSI), and National Nature Reserves (NNR); and local designations such as Local Nature Reserves (LNRs). Some designations overlap the same areas, such as the Humber Estuary intertidal and subtidal areas are designated as SAC, SPA, SSSI and other designations.

The Humber Estuary supports a diverse fish community including resident, marine migrant, nursery-using and over-wintering species and those taking migratory route through the estuary. Over 85 species of fish have been identified in the estuary. Improvements in water quality in the inner estuary, and the lower reaches of the River Ouse, have led to the return of migratory fish species like salmon and trout.

Further inland in the study area, are additional SACs, SSSIs, NNRs and LNRs. These include, for example, the SAC, SPA and SSSI on the River Derwent and lower Derwent valley, which are considered to represent one of the best British examples of the classic river profile, supports plants uncommon to northern Britain in its floodplain meadows, rare fish species and otter (*Lutra lutra*), and a diverse assemblage of breeding and wintering waterfowl.

Another example are the species-rich meadows in the Aire floodplain (Eskamhorn Meadows SSSI) that would have traditionally been seasonally flooded.

Further information on the designated sites and their status is provided in Appendix 3 and the designations are shown in Figure 10 in Appendix 2.

Biodiversity in the study area, including the designated sites, has been historically under pressure from built development and agricultural intervention. In recent years many agri-environment schemes and evidence studies such as the Humber Green Mapping Project (Natural England) have been undertaken to manage the pressure on biodiversity and improve understanding to integrate land-use and economic development with nature conservation.

As part of the previous Strategy, commitments were agreed through the HRA to delivering a programme of habitat creation projects to compensate for effects on the Humber Estuary SAC, SPA and Ramsar site. As part of the Humber 2100+ development, the 'balance of habitat losses and gains will be reviewed and modified to meet the future compensatory habitat needs. Any compensatory habitat schemes in development anticipated to be completed by 2021 (starting period for the new Strategy) will be considered to form part of the SA baseline.

5.1.2 Non-statutory designated features

Biodiversity interests extend beyond the statutory designated sites into the countryside and within the built-up areas around the Humber. These include county wildlife sites, local wildlife sites, Sites of Importance for Nature Conservation (SINCs), Wildlife Trust nature reserves, community forests, other nature reserves, wildlife corridors and various habitats of principal importance for the conservation of biodiversity are listed in section 4.1 of the

NERC Act. Such features are also of amenity value for local communities. Some of these features are given in Figure 11 in Appendix 2.

For example, there are four RSPB reserves within the study area including Read's Island, which is important for supporting breeding avocets, and Blacktoft Sands, which has the largest area of tidal reedbed in England. To enable flood risk management activities around the estuary and meet UK legislation, the Environment Agency has created areas of new estuarine habitat through the managed realignment of existing tidal defences, such as at Paull Holme Strays (which is managed by Yorkshire Wildlife Trust) and Alkborough (which was also designed to store flood water). Much of the East Riding of Yorkshire and Kingston upon Hull area are covered by the Heywood Community Forest. Local community involvement is likely to be high on these sites and must be understood if these areas coincide with Humber 2100+ Strategy proposals.

In addition, Natura 2000 site habitat compensation areas that have been secured as part of development consent requirements for development projects in North East Lincolnshire, North Yorkshire and East Riding Yorkshire Council areas will also be considered in this Humber 2100+ as planning policy emphasises the need to consider them part of the designated site, indicated in Figure 11 in Appendix 2. These sites will be considered in the HRA, whose findings will feed into the SA in the later stages.

Other notable biodiversity present in the study area includes protected species and farmland bird populations. Farmland bird populations within the Humber area are considered important due to declines in populations elsewhere in the UK (as reported by the British Trust for Ornithology (Nov 2017)).

Peat is found in large deposits to the west of the Trent Valley and south of the River Ouse, such as on Goole Moors, Crowle Moors and the Isle of Axholme (some of which forms part of the Humberhead Peatlands NNR and associated SSSIs). Smaller deposits are found in the East Riding to the north of Newport/Gilberdyke in the Hotham Carrs area (Joint Councils, 2013).

Future trend:

- Predictions for sea level rise and foreshore erosion due to climate change will result in the loss of intertidal habitats ('coastal squeeze'). The previous Strategy estimated the coastal squeeze losses to be approximately 600 ha between 2000 and 2050 (this estimate will be updated as part of the Humber 2100+).
- Climate change and associated sea level rise pose continuing and new challenges to the management of all designated sites, habitats and species.
- Complex changes in bird populations and migratory patterns are taking place on a regional and global scale, and this is thought to be linked to climate and habitat change. The bird populations around the Humber are reported to have been declining in recent years and this may continue or may be part of a cycle.
- Predicted population growth, plans for growth such as around the ports-based economy, developments, increased formal access to the coast, and interest in nature tourism could put further pressure on biodiversity and future sites for habitat creation.

Strategic issues:

- The study area is of considerable importance for nature conservation, comprising many international, national and local statutory designated sites as well as non-statutory sites, and habitats and species, some of which are rare or threatened.
- Historically, the biodiversity of the Humber Estuary has been threatened and directly impacted by both urbanisation and agricultural intensification. The freshwater and wet grassland habitats are a particularly limited and threatened resource. Overall, the bird populations appear to be in decline - the reason for which is not well understood.
- Maintaining the defences in their current alignment will result in further coastal squeeze of SPA/SAC habitat, and along with any direct habitat losses from proposals, will require 'mitigation' and/ or 'compensation' for these losses.
- The Humber 2100+ Strategy presents opportunities for a co-ordinated approach between identifying opportunities for creation and delivery of priority habitats and flood risk management; for improving the

conservation status of designated sites; and for strengthening habitat networks, providing corridors and creating stepping stones which will increase resilience to climate change by reducing fragmentation and enabling species movement.

- Peat is linked to carbon sequestration - the potential impact of the Strategy on peatlands must be taken into account.
- The study area also includes non-statutory nature conservation sites, where local community involvement is likely to be important and must be understood if these areas coincide with Strategy proposals.

5.2 Water

5.2.1 Introduction

The study area comprises of a complex hydrological system with interconnected rivers, the estuary, ditches, canals, lakes/ponds and groundwater bodies. Ongoing economic activities, including industry and agriculture are both dependent on these systems and have an influence on the waterbodies, such as the way they flow and their quality. Flood risk management activities also have an impact on the hydrological system which must be understood as far as possible and considered by the Humber 2100+ Strategy.

5.2.2 Waterbodies

The Humber Estuary is one of the North Sea's principle estuaries, with a catchment approximately one fifth of the land area of England. The Humber Estuary and its principal tributaries, the rivers Trent, Ouse, Ancholme and Hull form the largest catchment area of any river system in England. See Figure 12 in Appendix 2 for the primary river network.

Water bodies are classified under the Water Framework Directive (WFD) (2000/60/EC)¹² and given a status according to their ecological/biological, hydromorphological and chemical characteristics. Several surface water bodies in the study area are classified under WFD: the Humber is classed as a 'Heavily Modified Transitional' water body (divided into Upper, Middle and Lower reaches); the Ouse and Derwent within the study area are 'Heavily Modified', and the Trent within the study area is an 'Artificial'. All these water bodies currently have overall 'Moderate' status according to the River Basin Management Plan (RBMP) (Environment Agency, 2015). Nine classified ground waterbodies fall within the study area, such as the Grimsby Ancholme Louth chalk unit; East Riding mercia mudstone; and Aire and Don Sherwood sandstone. All waterbodies have good and poor status for various elements.

For detailed information on these WFD classified water bodies, see Appendix 3.

Additionally, a network of drains crosses the study area, draining large areas of farmland. The small internal drains feed into large soke dykes located directly behind the existing flood embankments beside the estuary. The soke dykes are predominantly freshwater but collect any seepage of estuarine water through the banks or overtopped flood water. Water from land drainage and from overtopping is largely discharged to the estuary through pumping stations and passive outfalls fitted with tidal exclusion doors or flaps. Larger tributaries such as the New River Ancholme discharge through sluice gates or similar structures.

5.2.3 Water quality

Water quality within the Humber Estuary is largely dependent on the input from effluent treatment plants on its banks and from the densely populated and industrialised parts of the inland catchment (Black and Veatch 2004). Water quality throughout the catchment has improved over recent decades, associated with the decline in polluting industries in the catchment, and more stringent controls on the release of pollutants. This has resulted in an increase in numbers of migratory fish (i.e. salmon and trout) in the estuary.

The estuary does not show any symptoms of eutrophication and is unlikely to become eutrophic as organic inputs to the estuary are declining (Boyes & Elliot, 2006) The trend is likely to continue because of the primary

¹² Water Framework Directive (Directive 2000/60/EC), implemented in England by the Water Environment (Water Framework Directive) (England and Wales) Regulations (SI 3242/2003).

and secondary treatment of sewage entering the estuary. Periodically, a temporary reduction in dissolved oxygen (DO) (a 'sag') occurs in the mid-upper estuary when higher than average summer temperatures and low fluvial flows occur. Sediment transport and concentrations of suspended sediments have the potential to affect water quality (see section 5.2.3). Ongoing investigations into Dissolved Oxygen issues relating to abstraction and reduced flows are known at the time of writing this report and may be referred to when location specific options are developed as part of the Strategy.

A Nitrate Vulnerability Zone (NVZ) covers most of the study area, possibly due to the predominant agricultural land use, which is a designated under EC Nitrate Directive (91/676/EEC) (European Commission, 1991) where nitrate concentrations in sources of public drinking water exceed, or are likely to exceed, the EC limit of 50mg/l. See Figure 13 in Appendix 2.

Groundwater is important for maintaining river flows and water quality. Source Protection Zones (SPZ) are designated where the risk of contamination might cause pollution of important ground water bodies. Generally, the closer the activity is to groundwater source, then the greater the risk to groundwater. Three areas of the study area have GSPZs: in East Riding of Yorkshire (northern part of the study area) and North Lincolnshire and Northeast Lincolnshire near places such as Barton-upon-Humber, Goole, Immingham and Cleethorpes. There might be other areas that are vulnerable to pollution but not designated. Where this information is available and appropriate for strategic level, it will be considered in the SA.

The study area also has number of designated Groundwater and Drinking Water Safeguard Zones (SGZ) to manage nitrate concentrations in groundwater. These are areas where drinking water supplies are at risk of deterioration due to the use of substances like pesticides or nitrates. The Environment Agency works in partnership with Water Companies and Natural England to encourage farmers and land managers to make voluntary changes which will reduce nitrate pollution. Risks of saline intrusion is also noted in the study area, particularly for the Hull and East Riding Chalk Groundwater Body which is currently at Poor status for saline intrusion.

Catchment Partnerships or a Catchment-Based Approach (CaBA) has been developed around the country which takes a holistic approach to managing river catchments. This is a collaborative working arrangement between non-government organisations, Water Companies, Local Authorities, Government Agencies, Landowners, Angling Clubs, Farmer Representative Bodies, academia and local businesses to deliver cross-cutting improvements to the water environment. Within the study area there are many catchment partnerships, including Humber Catchment Partnership which deliver variety of activities whose outcomes include, addressing diffuse/ point pollution, flooding, restoration (ecology), engagement or recreation or improving fish migration. The Catchment Partnerships can help manage flood risk, especially through natural flood risk management.

5.2.4 Water resources

The whole study area is dotted with numerous water abstraction licences, ranging from small to large abstractions for tidal, surface and ground water, contributing to the drinking water supply as well as industrial uses in the Humber area and around the country. In the outer part of the Humber Estuary, large licensed tidal abstractions are located near Kingston upon Hull and near Immingham Docks, possibly to supply to power stations and the port areas, and others are located in the inner estuary. Also, the whole of the hinterland is scattered with groundwater and surface water abstraction licences¹³.

The entire water supply for Hull City comes from the groundwater catchment zone of the Humber Estuary. Part of the Selby Wellfield public water supply abstractions fall within the SPZ, highlighting the need to consider the close link between water resources and pollution.

¹³ Environment Agency water abstraction licences map: http://maps.environment-agency.gov.uk/wiyby/wiybyController?topic=water_abstractions&layerGroups=default&lang=e&ep=map&scale=6&x=524133.3333333333185&y=415259.4270833337#x=490146&y=408911&lq=1,2,3,6,10,&scale=5 (accessed 02.10.17)

Future trends:

- Predicted climatic changes combined with the anticipated population growth in the study area will put additional pressures on the water environment, potentially affecting drinking water supplies, wildlife, and industries in future.
- Climate change predictions show that temperatures will continue to rise, winter rainfall will increase, more rain will fall in intense storms and sea level rise will continue (Environment Agency, 2015). This is predicted to result in increased flooding and foreshore erosion, which without coordinated FRM activities, would lead to the existing defences being breached or overtopped and the large low-lying areas behind the defences being inundated more frequently.
- Current passive outfalls will be impacted by sea level rise on low water, for example, compromising ability to drain land for agriculture and potential impacting on third party infrastructure.
- Climate change predictions also indicate an increase in seasonal variation (Environment Agency, 2015) in flows (less in summer, more in winter), with a reduction in flow overall. Consequently, there will be less water available for abstraction and supporting wildlife (Environment Agency 2015).
- Predicted population growth and changes in rainfall patterns have the potential to increase pollution entering waterbodies. In urban areas there will be increased pressure on the sewer network due to increasing stormwater overflows and surface water runoff. Flooding of contaminated land would also increase pollution risk. In rural areas, intense rainfall is likely to exacerbate erosion and sediment runoff. Flooding of agricultural land is also likely to lead to increased pollution from fertilisers, herbicides and pesticides.
- With the increase in population and plans for economic growth, new developments around the estuary, such as housing developments, port expansions and industries, could also increase the demand for abstraction and physical modifications to the water environment.

Strategic Issues:

- All of the water bodies within the study area are classified as Heavily Modified or Artificial water bodies and have a Moderate status (in relation to the Water Framework Directive), implying that, with appropriate mitigation, they could be improved to achieve a Good Ecological Potential status. The Strategy must aim to prevent deterioration of the WFD status of surface waters and groundwater, and consider opportunities to include relevant mitigation measures to help achieve Good status, such as:
- **Flood protection measures:** avoid or reduce the impacts of physical modifications of the waterbodies, remove obsolete structures, realign flood defences, soften and rehabilitate banks, and encourage habitat preservation and restoration, enable fish passage.
- **Operations and maintenance:** sediment management regimes; retain and enhance habitats.
- **Habitat creation:** intertidal habitat creation; bank improvement; 'Green Infrastructure' and other types of habitat creation.
- The study area has several NVZs, SGZs and GSPZs, indicating areas to protect from pollution, and many water abstraction sources to be aware of when developing Strategy options.
- Encourage the creation and management of permanent grass field margins and buffers to watercourses, thus reducing nutrient and sediment run-off, and protecting key sewerage infrastructure from flood risk.
- Conserve the network of watercourses, ponds/lakes, drains, ditches and dykes and manage their habitats to improve biodiversity and value as landscape features.

5.3 Geomorphology

5.3.1 Overall morphological form

The Humber is one of the largest estuaries in the UK with a catchment an area of around 24,500km² (Edwards and Winn, 2006). The estuary decreases in width upstream from its mouth where it is around 15km wide. The mouth itself is constrained by a spit, Spurn Point, whose existence is partly dependant on underlying geology.

The previous estuary strategy and shoreline management plan divided the Humber Estuary into three regions with differing in geomorphology characteristics:

- **The Inner Humber - Trent Falls to the Humber Bridge.** This region is characterised by extensive intertidal sand/mud banks including Redcliff, Middle Sand, Winteringham, Barton Ness Sand and Hessele. This is the most dynamic region with significant lateral movements in channel positions.
- **The Middle Humber - Humber Bridge to Grimsby.** In this region, the main estuary channels generally have a stable configuration, with a dominant northern channel and an ephemeral channel along the southern shore. The Halton Middle channel forms the main channel.
- **The Outer Humber - Grimsby to Spurn Point.** This region shows increased movements of channels and banks. It has a 'three channel' system (the Haile, Bull and Hawke channels) with the Hawke Channel artificially extending across Middle Shoal as the Sunk Dredged Channel.

The Humber includes extensive intertidal areas (<http://www.estuary-guide.net>) composed mainly of mudflats and saltmarshes. These areas are important in terms of habitats and the birds that they support. Prior to the construction of defences around the estuary, much of the present-day flood plain of the estuary would have been intertidal marshes and mudflats.

5.3.2 Physical processes

Over the last 4000 years, sea levels have been rising relative to land levels at an average rate of about 1 mm per year. The relative rate of rise over the last 100 years has been between 2 and 2.5 mm per year. Present rate of sea level rise is superimposed on a number of cyclical changes, one of which (the lunar nodal tidal cycle) has a period of some 18 years and a maximum amplitude of about 50 mm (Environment Agency, 2000).

Superimposed on top of sea level rise are the main physical processes of waves, tides and freshwater flows. Additionally, low pressure atmospheric systems associated with high wind speeds can cause storm surges which can raise water levels up to 3 m above normal levels (Environment Agency, 2000). The importance of the various processes varies along the estuary, with wave processes generally being more important in the outer estuary and freshwater flows being more important in the inner estuary. Waves up to 4 m high can occur in the outer estuary between Cleethorpes and Donna Nook on the south bank and near Hawkins Point on the north bank, but reduce to little more than 1 m high upstream of Hull (Environment Agency, 2000). Tidal heights increase up estuary and on mean spring tides high water increases from 3.8m ODN at Spurn Head, to 5.2m at Owston Ferry in the River Trent and 5.3m ODN at Goole in the River Ouse.

Although the tidal limits extend into the tributaries, the Humber Estuary is often defined as extending from its mouth to the confluence of the River Trent and River Ouse at Trent Falls – a distance of 62km. The tidal influence extends a further 62km up the River Ouse to Naburn Weir near York, and 72km up the River Trent to Cromwell Weir at Gainsborough. Other significant tributaries to the Humber include Aire, Don and Hull.

Suspended sediment levels are high throughout the estuary (JBA Consulting, 2011). The high concentrations of suspended sediment are derived from a variety of sources, but fine sediment eroded from boulder clay cliffs on the Holderness coast are the most significant. Suspended sediment concentrations in the Inner and Middle part of the estuary are generally more than 200 mg/l (Boyes & Elliot) although higher concentrations (over 20 g l⁻¹) can occur in the turbidity maxima (Edwards and Winn, 2006; Uncles et al, 2006a; Uncles et al, 2006b). Suspended sediment concentrations are lower in the Outer Estuary (Boyes & Elliot, 2006). The position of the turbidity maximum varies seasonally, being further downstream during periods of higher freshwater flow (Mitchell *et al.*, 2012).

Future trends:

Evolution of the estuary- or uncertainties/unpredictability

- Predicting the future evolution of an estuary such as the Humber is subject to large uncertainties arising from a number of sources, including: (i) the driving forces (e.g. sea level rise, sediment supply, channel movement); (ii) anthropogenic influences (e.g. dredging, reclamation) and (iii) the estuary responses (e.g. erosion/accretion).

- The previous Humber Estuary Strategy estimated losses of habitat as 600 ha between year 2000 and 2050. These losses were all termed 'coastal squeeze' and assumed to be connected in some way with flood defences around the estuary. More recently, studies have illustrated that there are numerous causes for habitat loss in estuary environments as well as the influence of coastal defences.
- Work is currently being considered to look more closely at the actual losses of habitat in the Humber over the last 25 years to make a better assessment of the future losses associated with flood defences.

Strategic issues:

- Aim to prevent deterioration of the WFD status of the waterbodies, and consider opportunities to include relevant mitigation measures.
- Seek opportunities for enabling natural coastal and estuarine processes to continue, to benefit geomorphology and allow habitats to respond to the constantly changing patterns of accretion and erosion.
- Seek opportunities to increase the extent of intertidal habitats (saltmarsh, reedbeds and mudflats) to provide effective defence against wave energy and to support biodiversity.

5.4 Landscape

5.4.1 Landscape character

The Humber Estuary is the most significant component of the regional landscape – it has a unifying presence and is a focus for settlement, communication routes and the economy. It is a low-lying estuarine landscape with open and expansive waters, and vast intertidal habitats. Much of the adjacent land has been reclaimed and the wider area includes flat, low-lying, large scale agricultural landscapes bound by diverse topography. Several major rivers and a network of drainage ditches flow across the area. There is very little woodland in the rural areas so the ditches form important networks for linking the few other semi-natural habitats.

There are strong contrasts within this landscape. Much of it is open and expansive, with long views and tranquil and remote places, such as Spurn Point, Blacktoft and Skitter Ness, or quiet rural areas dominated by farming. The open landscape is broken up by urban infrastructure, isolated developments, large towns such as Hull and Immingham, and industrial complexes.

The landscape in the study area is characterised by 11 National Character Areas (NCA)¹⁴: Central Lincolnshire Vale; Lincolnshire Wolds; Holderness; Northern Lincolnshire Edge with Coversands; Humber Estuary; Humberhead Levels; Lincolnshire Coast and Marshes; Lincolnshire Wolds; Vale of York; Spurn Heritage Coast; and Yorkshire Wolds. In addition, four local authorities have adopted their own Local Landscape Character Areas following the production of their individual Landscape Character Assessments (LCAs), which provide further information on the local characteristics. The East Riding of Yorkshire Council have recently begun the process of preparing a new LCA.

Maps and further details of the National Character Areas and Local Landscape Character Areas are provided in Figure 14 in Appendix 2 and Appendix 3, respectively.

5.4.2 Landscape designations

The study area hosts the Spurn Heritage Coast, also known as Spurn Head Hook, located within East Riding of Yorkshire. This is a 5 km long sand and shingle spit arcing into the mouth of the Humber River which is constantly reshaped by coastal drift and maintained by the deposition of soft sediments from the coastline to the north. Heritage Coast is a non-statutory designation between the local authority and Natural England to protect coastlines of special scenic and environmental value from undesirable development. The coast is a stopover point for thousands of migrating birds in the spring and autumn and is also a Yorkshire Wildlife Trust Nature Reserve.

¹⁴ Natural England's National Character Areas: <http://publications.naturalengland.org.uk/category/587130> (accessed 02.10.17)

No other landscape designations are found within the study area, but the Lincolnshire Wolds, to the south of the study area, is designated as an Area of Outstanding Natural Beauty (AONB) on account of its high scenic beauty.

5.4.3 Other studies

In addition to Natural England's green infrastructure studies described in section 4.2, recent studies were completed on landscape and green infrastructure that could be delivered through FRM in the Humber Estuary, including the Humber Estuary and Green Infrastructure Study Report (Cambridge Studios (Sheils Flynn)). This report focussed on five strategic areas (for the Humber Bridge, Cleethorpes and Tetney, Goole, Hull waterfront, and Humber Estuary farmland) and developed a suite of localised studies around the whole estuary, characterising the local landscapes, investigating partnership investment opportunities and developing a suite of conceptual landscape designs.

Some of the agri-environment schemes around the study area, described in section 4.5.2, integrate opportunities for protecting and enhancing the local landscape.

Future trend:

- Predicted sea level rise due to climate change would lead to the existing defences being breached or overtopped and the large low-lying areas behind the defences being inundated more frequently, and to the erosion and loss of intertidal areas against existing defences.
- Potentially there could be pressure on landscape character from the predicted increase in population and planned economic growth and development around the estuary in the future.

Strategic issues:

- Much of the landscape character is open and expansive, dominated by the Humber Estuary, with long views and tranquil and remote places, such as Spurn Heritage Coast, or quiet low-lying rural areas dominated by farming and managed with a network of ditches such as along the banks of the Don, Ouse and Aire. This is in contrast with the large towns and industrial complexes, such as at Hull and Immingham. Maintaining the character while adopting changes relating to development remains a challenge and presents opportunities.
- Recent landscape and green infrastructure studies for the Humber Estuary highlight the potential for flood risk management projects to deliver creative opportunities that benefit users, landscape, landscape character and green infrastructure through dynamic partnership-working with stakeholders.
- Local communities are involved in many integrated landscape and agri-environment schemes who may be considered as potential stakeholders whilst developing the Strategy in specific locations where landscape is valued.

5.5 Cultural heritage and archaeology

5.5.1 Historical overview

The study area's prehistoric landscape was part of the Doggerland, the land bridge connecting Britain to Europe when a warming climate after the last major ice age exposed a continental shelf. Humans inhabited this historic landscape, which comprised of coastlines and dunes with extensive marshlands and grazed wet grassland. With further warming and rising seas, the land bridge was flooded and the island of Britain was formed. The dramatic changes in the Humber landscapes over history from climatic changes and the loss of diverse landscapes from land use practices over time provide the long-term context for flood risk management strategies and plans for sustainable development.

The Estuary and its floodplain contain a complex array of historic buildings, settlements, landscapes and archaeological sites that are a fundamental component of the regional identity. Archaeological evidence shows it has been a key trade and communications route since prehistoric times.

As the northern frontier of the Roman Empire, several Romano-British settlements were established in the study area¹⁵. Place names indicate that both the Saxons and Danes settled in the area, and the extensive river system was used by invading Angles and Danes to penetrate deep into the country.

The slightly higher, drier land inland formed islands within the wetland, enabling early settlement during the medieval period, shown by the remnants of turbaries (peat cutting), 'ridge and furrow' fields as well as the largest stretch of open strip field systems in the country at the Isle of Axholme, which is of international significance¹⁶. Towns developed along river trade routes and moated sites were established to the north of Doncaster, and around the Isle of Axholme.

The Humber continued to have great importance for trade and communication, with populations and wealth increasing through the medieval period. The historic landscape was altered from the 17th century by the extensive drainage and flood protection works reclaiming areas from the sea and protecting developing towns and industrial areas. In the 16th and 17th centuries, the area declined in prosperity as a result of competition for trade and improvements to inland transport systems. Hull, however, prospered and became the principal port and town in the area¹⁷.

A key part of the cultural heritage interest in the study area is associated with the management of water and industrial activity, evidenced by old river courses such as the Don, historic ditches, berms, dykes, canals, bridges, disused windmills, water towers and canals, reflecting both the reclamation of the area for cultivation and the importance of the waterways as major transport routes¹³. Many of these assets are linked by historic footpaths, and these collectively with the assets themselves contribute towards the opportunity for interpretation of the historic landscape.

5.5.2 Statutory designations

There are 59 Scheduled Monuments within the study area, a designation that protects heritage features of national importance. 34 of the Scheduled Monuments are found at East Riding of Yorkshire, three within Kingston Upon Hull, one within North East Lincolnshire, eight within North Lincolnshire, four within Selby District and nine within Doncaster Metropolitan Borough.

There are 35 Grade I Listed Buildings within the study area which are widely distributed across eight of the local authorities: Doncaster, East Lindsey, East Riding, Hull, North East Lincolnshire, North Lincolnshire, Selby and West Lindsey. There are also many more Grade II and Grade II* Listed Buildings, though for this report these are not considered. However, it is worth noting that the Humber Bridge is Grade I listed and Hull Barrier is Grade II listed.

Conservation Areas, designated for their special architectural and historic interest are found in the study area. There are no World Heritage Sites or Protected Wreck Sites within the study area. The designated sites are shown in Figure 15 in Appendix 2.

5.5.3 Archaeology

Within the study area, there are significant palaeo-environmental and archaeological evidence that are preserved within the Estuary's wetland soils, for example bronze-age boats have been discovered in the intertidal areas. There are many known archaeological finds in the study area, including, pottery finds, flint finds and paleoenvironmental data (Cambridge Studios (Sheils Flynn), unpublished). Areas of Archaeological Potential are areas where archaeological finds are considered to be likely, possibly due to previous finds within the location. The majority of the study area at and near to the Humber Estuary is either an important Areas of Archaeological

¹⁵ Natural England National Character Area 41 Humber Estuary: <http://publications.naturalengland.org.uk/publication/2285747> (accessed 02.10.2017)

¹⁶ Natural England National Character Area 39 Humberhead Levels: <http://publications.naturalengland.org.uk/publication/1843305?category=587130> (accessed 05.11.2017)

¹⁷ Natural England National Character Area 41 Humber Estuary: <http://publications.naturalengland.org.uk/publication/2285747> (accessed 02.10.2017)

Potential, or an Area with High Archaeological Potential. A map of archaeological potential is reproduced from the Humber Landscape and Green Investment Study in Figure 16 of Appendix 2.

Future trend:

- Sea level rise linked with climate change might pose risks to heritage assets or buried archaeology not already at risk of flooding. Conversely it might aid in preservation of palaeo environmental and archaeological features that are at risk of being dried out.
- Challenges might arise in the future on selecting which heritage features to protect and/or manage in a continually changing landscape.

Strategic issues:

- The Estuary and its floodplain contain a complex array of historic buildings, settlements, landscapes and archaeological sites that are a fundamental component of the regional identity and focus for education, tourism and recreation, which the Humber 2100+ Strategy must consider; as much as reducing disturbance to these sites are important, the Strategy could seek opportunities to protect and enhance these assets.

There are no known strategic issues relating to buried archaeology, but at a local level, the Strategy options could present risks to 'unknown' or buried archaeology, or present opportunities to improve understanding of this resource, or aid in the preservation of palaeo-environmental and archaeological features from being dried out. The Strategy will need to consider and respond to short-term and long-term implications for heritage assets.

5.6 Climate change

The Climate Change Act 2008 set a UK government target for reducing greenhouse gas emissions and to make provisions for adapting to climate change, amongst other things. Climate change adaptation refers to *making changes to prepare for and negate the effects of climate change, thereby reducing the vulnerability of communities and ecosystems. Adaptation can occur as a response to an event or in anticipation of an event. By adapting to cope with the effects of climate change, communities, enterprises and institutions can build up their climate change resilience* (Action on Climate, 2015).

Under the 2008 Climate Change Act, the UK government is required to publish a UK-wide Climate Change Risk Assessment (CCRA) every five years, which assesses the risks for the United Kingdom from current and predicted impacts of climate change. The CCRA consists of a series of 'evidence' collated from a number of different sources including local authorities, including East Riding of Yorkshire Council.

The Humber 2100+ Strategy will consider climate change impacts by estimating the flood water levels with predicted sea level rise scenarios to predict flood risk in the study area, and propose a programme of coordinated measures for improving climate change adaptation and resilience in the study area.

Future trend:

- Climate change predictions show that temperatures will continue to rise, winter rainfall will increase, more rain will fall in intense storms and sea level rise will continue. This is predicted to result in increased flooding and foreshore erosion, which without coordinated FRM activities, would lead to the existing defences being breached or overtopped and the large low-lying areas behind the defences being inundated more frequently.

Strategic issues:

- The Strategy will consider how to help communities to adapt to climate change effects (sea level rise, storm events, extreme weather).
- The embedded carbon of the Strategy proposals will be considered to help select a sustainable approach to flood risk management.

5.7 Waste and contaminated land

There are over 150 historic landfill sites across the study area. The landfill sites cover all types of waste, including inert waste, industrial waste, commercial waste, household waste, special waste and liquid and sludge. Active landfill sites and known or potential contaminated land within the study area are located across the whole study area. There might be water pollution related issues with landfills within the study area. These sites are shown on Figure 18 in Appendix 2, prepared using data supplied from Environment Agency data and from some local authorities within the study area.

Where the Strategy options are likely to interact with these landfill sites, location specific baseline will be reviewed at a later stage to inform the SA, alongside site-specific information, for example, the East Riding of Yorkshire Contaminated Land Inspection Strategy.

Strategic issues:

- Consideration must be given to the location of active and historic landfill sites when assessing the strategy options to identify potential impacts of flood risk and works on soil and water pollution.
- Potential opportunities in terms of land remediation may be identified in the Strategy where these coincide with Strategy proposals.
- Consider a strategic approach to minimising the waste and materials use of the Humber 2100+ Strategy proposals.

2018 Version

6. Sustainability Appraisal (SA) Framework

6.1 Introduction

The Appraisal Framework enables the likely effects of the proposed Humber 2100+ Strategy to be assessed and measured against in the SA. This is done through setting out the objectives of the SA assessment in a framework, together with the decision-making criteria and indicators which will be used in the assessment.

The proposed SA Framework that has been developed to assess the new Strategy is presented in Table 6.1. It is divided into social, economic and environmental themes. The SA Framework will be revised based on consultation comments received, availability of further baseline information, and any issues and opportunities that may not have been identified to date. An agreed version of the SA Framework is intended to be created at the end of this consultation. Any changes or suggestions to the SA Framework should therefore be put forward by stakeholders during this consultation.

6.2 Scoping of SA topics

This section will discuss the key social, economic and environmental issues that are currently proposed to be addressed within the SA and those that will be scoped out.

The SA will not address any impact likely to result during the implementation of any built solution, for example construction impacts or raising of coastal defences at a local level. However, the cumulative effects on receptors at an estuary level will be considered. An exception to reporting on construction impacts at a local level will be dependent on the severity of impact which cannot be mitigated and on the reversibility, or irreversibility of the predicted impact. Most construction issues are more appropriately considered during project-level Environmental Impact Assessment (EIA) undertaken for specific schemes.

Table 6.1 Summary of issues scoped in and out of the Humber 2100+ SA

SA topic	Issue – Scoped in	Issue – Scoped out
Population and human health	Population and properties within flood risk areas.	Noise and vibration: The effect of flood risk management projects that arise out of the Strategy on human receptors due to noise should be considered at project EIA stage. Air quality: There are four Air quality management areas within the Study Area. Much of their management will be dependent on local intervention which the Strategy is unlikely to influence. The impact of projects that arise out of the Strategy on receptors will reviewed at project level through an EIA.
Place and communities	Socially deprived communities whose quality of life may be affected by flood risk management. Access to the countryside via rights of way and cycle routes and recreation destinations that may be affected by flood risk management decisions or pedestrian access to coast that may be affected by flood risk management decisions. Green infrastructure that may be affected by flood risk management decisions.	
Economic growth and economic development	Existing and proposed housing, industry, commercial and economic activities as well as tourist, recreational and amenity resources that may be affected by flood and coastal management decisions.	
Rural land-use and rural economy	Grade 1 and 2 agricultural land that may be affected by flood risk management decisions.	Geology and soils: The Strategy will not have a significant effect on local geology or soils but these may require consideration at project EIA stage.

SA topic	Issue – Scoped in	Issue – Scoped out
	Issues and opportunities linked to agricultural land-use, including soil erosion or loss of top soil.	
Material assets	<p>Critical infrastructure (CAT 3-5) that may be affected by Strategy, including transport networks.</p> <p>Navigation routes that may be affected by Strategy.</p> <p>Current and safeguarded mineral extraction areas that may be affected by flood risk management activities.</p> <p>Current or historic landfill sites and contaminated land may be affected by flood and coastal management decisions, positively (remediation) or negatively (flooding and water pollution).</p>	
Biodiversity	<p>International (Ramsar, SPA and SAC), national (SSSI, NNR) and local conservation sites may be affected by flooding and defence intervention and/or by coastal squeeze.</p> <p>Priority habitats known to be found within the study area (based on available information).</p>	Individual species: Individual protected, rare or notable species. These will be surveyed, where appropriate, as part of individual scheme development.
Water	WFD waterbodies that may be affected by the Strategy.	Drainage: Small-scale drainage systems, and the effect of the Strategy on these or vice-versa, unless discussed as part of the Strategy.
Geo-morphology	Geomorphology of the estuary and rivers that could be affected by flood risk management decisions.	
Landscape, townscape and seascape	Landscape character areas, local character and Heritage Coast that could be significantly affected by flood risk management decisions.	Visual amenity: Visual amenity and potential view impacts from small/ individual interventions (for example raising defence at specific locations) on individual or small settlement type receptors should be assessed at the project EIA stage.
Heritage and archaeology	Known designated assets and their settings including scheduled monuments, listed buildings, Registered Parks and Gardens, conservation areas and the potential for 'unknown' or buried archaeological remains within study area that may be affected by flood risk management decisions. Known non-designated sites, where information is available from local authorities.	Climate change cause: The Strategy will not address the issues that cause climate change. It will also not discuss other indicators of greenhouse gas emissions associated with the Strategy, other than embodied carbon.

SA topic	Issue – Scoped in	Issue – Scoped out
Cumulative Effects and Evolution of Baseline	<p>Inter-relationships between topics where relevant i.e. where strategic options give rise to the potential for secondary or indirect effects. Synergistic effects.</p> <p>Cumulative effects from other proposed developments at a high level.</p> <p>Evolution of baseline in absence of Strategy i.e., do-nothing will be assessed.</p>	Cumulative effects of small-scale developments, due to the strategic nature of the study.

Based on the review of the key sustainability baseline for the study area on environmental, social and economic factors (see sections 4 and 5), and key messages from the relevant plans and policies (see section 3 and Appendix 1), sustainability topics were selected for the assessment.

The topics that have been selected reflect the topics listed in: Annex I of Directive 2001/42/EC of the European Parliament on 'The Assessment of The Effects of Certain Plans and Programmes' (the SEA Directive); and *Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents*, ODPM, November 2005.

6.3 SA objectives and criteria

The next step was to identify and develop the sustainability (SA) objectives. The objectives have been focussed on those issues that are directly relevant to the Humber 2100+ study area.

A range of criteria and indicators associated with achieving the objectives have been identified to provide guidance for the future appraisal process. The criteria focus specifically on the items which are of direct relevance to the Strategy and study area. The criteria are essentially sub-objectives, to serve as guidance questions for the appraiser. The SA objectives are not mutually exclusive, as with the sustainability topics, for example cultural heritage, landscape and rural economy are all inter-linked. The inter-relationships are also listed in Table 6.2. The acknowledgement of such inter-relationships will continue in later stages of the SA process.

6.4 Potential monitoring indicators

The potential monitoring indicators outlined in the following SA Framework for each objective are primarily derived from relevant indicators identified at the European, national, regional and local level. These indicators could form the basis for a future Strategy monitoring plan, and can be used to measure progress against the identified SA objectives.

The SA Framework Table

Table 6.2 SA Framework Table

**text in italics relate to Environment Agency statutory duties*

Topic	Objective	Criteria	Inter-relationship with topics	Potential indicators/ monitoring information
SOCIAL FACTORS				
1. Population and human health	To manage risk of flooding to the existing and the growing population, including the socially vulnerable population.	Will the option affect current level of flood risk to people and property and settlements?	Place and communities	Standards of Protection Population within the floodplain Risk to Life
		Will the option address flood risk in the 20% Most deprived areas?		
		Will the option be effective in addressing flood risk for future [Ⓔ] housing developments in the area?		
2. Place and communities	To maintain or improve access links to civic amenities, greenspaces and to minimise impact on viability of settlements.	Does the option affect access or connectivity for the communities? For example, PROW, cycle paths, bridle paths, access to waterfronts, coastal path (and Heritage Coast), countryside, features that contribute to well-being or recreational and green infrastructure?	Population and Human health; Material assets	Length of footpaths access, quality and quantity of recreational resources Humber Estuary Integrated Landscape and Investment Study
		Does the option affect access or connectivity for smaller rural settlements? For example, access to GPs, post offices, schools etc.	Population and Human health; Material assets	
		Will the option help safeguard of existing greenspaces, including open spaces, common, amenity space, child and young people play area and/ or ecological corridors?	Landscape character; Population and Human health; Biodiversity	Local Green Infrastructure Strategies and Policies delivery

[Ⓔ] Refers to proposals in the relevant Planning Authority Local Plan

		Will the option support or enable the provision of new green-blue infrastructure?	Biodiversity; Landscape character	
		Will the option create conditions that could have an impact on community severance and/ or viability of communities/ settlements?	Material assets; Population and Human health	
ECONOMIC FACTORS				
3. Economic development	Manage the flood risk to support and where possible enhance the local and wider economy	Will the option have an impact on inward investment in the study area and on large scale indigenous business growth in the study area?	Population and Human health	Number of days agricultural land flooded
		Does the option affect existing employment land or their viability?	Material assets	
		Does the option affect proposed [Ⓢ] employment land or their viability?	Climate change; Material assets	
		Will the option affect countryside communities and rural economy?	Rural land-use	
		Will the option affect viability of existing or proposed tourist and visitor attractions or create new tourist development and education opportunities?	Places and communities	
		Will the option present opportunities to adapt agriculture related land-use? For example, flood risk resilient farming or agri-tourism?	Rural land-use; Places and communities; Climate change	
4. Rural land use		Does the option affect existing or proposed high value (grade 1 and 2) agricultural land?	Population and human health	Agricultural Land

[Ⓢ] Refers to proposals in the relevant Planning Authority Local Plan

	To minimise loss of agricultural and farming land and to promote soil remediation	Does the option provide the opportunity to manage or reduce flood risk to improve productivity of agricultural land?	Population and human health; Economic development	Classification Grade Number of days agricultural land flooded Changes to agricultural output Agricultural Land Classification Grade Number of days agricultural land flooded
5. Material assets	To support the operation and maintenance of existing and proposed material assets.	Will the option help manage flood risk to the strategic road network and transport infrastructure, such as railway stations and wharfs?	Economic development; Place and communities	Connection of transport infrastructure routes
		Will the option help manage flood risk to critical infrastructure?	Population and human health; Place and communities	Vulnerability to flooding (depth and duration) of roads
		<i>Will the option affect current navigation routes?</i>	Place and communities	Length of navigable river
		Will the option support the development of new critical infrastructure?	Economic development; Population and Human health; Rural land-use	Connection of transport infrastructure routes
		Will the option affect operations of current mineral sites?	Economic development	Changes to gravels and minerals extraction sites
		Will the option affect safeguarded mineral sites?	Economic development	
		Will the option affect land-fill sites, current or historic or contaminated land	Population and Human health; Biodiversity	Waste management sites

ENVIRONMENTAL FACTORS				
6. Biodiversity	Conserve and enhance habitats, biodiversity, ecological corridors and create enabling environments for biodiversity	<i>Will the option manage tidal flood risk in a way which facilitates enhancement (or prevents deterioration) of international and nationally important habitats?</i>	Geomorphology; Water	Percentage achievement of conservation objectives for Natura 2000 sites
		Will the option manage tidal flood risk in a way which enhances regional or locally important habitats?	Geomorphology; Water	Favourable condition status of SSSIs
		Does the option contribute to prevent habitat fragmentation?		Habitats supporting protected species populations
		Will the option lead to net gain in biodiversity or lead to no net loss to biodiversity?	Climate change	OM4a- hectares of net water-dependent habitat created
		Will the option affect resilience of habitats to climate change?		OM4h- Hectares of habitat created through FCRM
		Will the option affect migratory routes of eels and fishes and/or affect nursery and spawning sites.	Water	EA KPI768 – creation of priority habitats
7. Water	To manage risks from tidal flooding to water resources and to maintain or enhance the water environment.	Will the option increase or reduce the likelihood of waterbodies within the Study Area achieving Good Ecological Potential by 2027 (in line with the WFD)?	Geomorphology; Biodiversity	Percentage achievement of conservation objectives for Natura 2000 sites
		Will the option <i>manage risk to saline intrusion and/or siltation</i> or the ingress of contaminants into a source protection zone or, <i>ground/surface water abstraction point</i> ?	Geomorphology; Biodiversity	Favourable condition status of SSSIs

		Will the option lead to a change in the availability of water resources, including for irrigation purposes?	Rural land-use	OM4e- Kilometres of water body opened up to fish and/or eel passage through FCRM Surface water quality Groundwater quality Source Protection Zone Surface water abstraction points Groundwater abstraction points
8. Geomorphology	To facilitate natural estuarine geomorphological processes.	Will the option work with natural processes and contribute to or complement the natural function of catchments including sediments, tidal prism, flow, erosion, rivers, floodplains and coasts?	Water; Biodiversity	WFD status (RBMP monitoring)
		Will the option enhance habitats such as saltmarshes that help dissipate wave energy at the coast?	Water; Biodiversity	Erosion and channel movements monitoring OM4b- hectares of net inter-tidal habitat created
9. Landscape, townscape and seascape character	To manage, conserve and/or enhance the character and quality of townscapes, landscapes and seascapes, maintaining and strengthening local distinctiveness and sense of place.	Will the option significantly affect the special qualities of sites or places of landscape, townscape or seascape value of regional, national or international importance?	Rural land-use; Places and communities; Economic development; Cultural heritage	NCAs and Local Landscape Character Areas showing no significant change or change consistent with character area descriptions and management strategies. Conservation Area appraisals Townscape Character Assessments Seascape Character Assessments Heritage Coasts
		Will the option manage tidal flood risks to the landscape character of the area and/or contribute to maintain or enhance the landscape character?		
		Will the option conserve or enhance the townscape, landscape and seascape character of the area contributing to maintaining or enhancing the sense of place?		

				<p>AONBs</p> <p>Local Authority Areas of High Landscape Value</p> <p>Conservation Areas</p> <p>Registered Parks and Gardens</p>
10. Cultural heritage	To manage, maintain and enhance cultural heritage assets and the historic environment	<p>Will the option allow heritage assets to adapt to changes in flood management whilst retaining their significance and current societal value?</p> <p>Where a negative impact is proposed can a positive outcome be gained by the recording of the asset and making the results available to the public or through public participation?</p>	Rural land-use; Economic development	<p>Scheduled monuments</p> <p>Listed buildings</p> <p>Conservation Areas</p> <p>Designated and undesignated heritage places and assets of regional, national or international importance.</p> <p>Areas of significant archaeological and palaeo-environmental potential</p> <p>Damage to viability of cultural heritage assets of regional, national and international importance</p> <p>Sites and areas of heritage tourism and historic character</p> <p>Historic land-use activities/ reversion to a former land-use (which we now realise to be environmentally beneficial and more sustainable with the progression, evolution, of the landscape through climate/environmental changes)</p>

2018 Version

11. Climate change	To enable climate change adaptation and resilience and to enhance carbon management opportunities	Will the option, if required provide sufficient time for community adaptation to climate change?	Population and human health	Standard of Protection
		Will the option, if required provide sufficient time for businesses, recreation and tourism centres for adaptation?	Economic development	Number of properties at flood risk
		Will the option allow sufficient information (including timescales) to allow infrastructure, for example water treatment plants or wastewater treatment plants and businesses to be relocated or adapted to climate change?/?	Material assets; Population and human health; Economic development	Type of utilities at flood risk Number of utilities at flood risk
		Will the option create opportunities for the generation of/ use of renewable sources, during operations and maintenance?	Economic development	Source of energy
		Will the option create opportunity to develop carbon neutral (balance carbon sink and carbon source) approach to flood risk management?	Rural land-use; Economic development	Carbon calculator

2018

6.5 Compatibility testing

6.5.1 Purpose

A test of compatibility between the proposed Strategy objectives and the SA objectives (from the SA framework) is typically conducted at an early stage of a plan making process to help identify whether the Strategy or a plan is aligned with the principles of sustainable development, and if not, discuss how they might be integrated.

As well as helping to establish compatibility between the SA objectives and the Strategy objectives, the testing of compatibility is an opportunity to set the scene for the future assessment stages and to act as a guide for the SA team and the Strategy development team to ensure that sustainable development thinking is integral to the Strategy preparation process.

Eight Strategy objectives are proposed which can be broadly classified under four categories – engagement with stakeholders, working with partners, delivery and rigorous data analysis to inform decision making. These objectives were tested against the 11 SA objectives defined in the Framework above (section 6.5.3). It is acknowledged that the Strategy objectives will work on conjunction with each other, but for purposes of compatibility they are tested against each SA objective in isolation.

The Draft Strategy objectives are presented below, and the compatibility with the SA objectives (listed by topic) is given in Table 6.3.

6.5.2 Humber 2100+ Objectives

The Environment Agency, Local Authorities and the Humber LEP will work in partnership to support sustainable development and a prosperous Humber. We will do this by redefining the strategic approach to managing tidal flood risk on the Humber for our communities and the Country, setting the way forward for the next 100 years taking into account predicted sea level rise and climate change.

The new strategy, which builds on existing work, will be adopted by the Local Authority partners and will obtain Defra approval.

With our partners:

- We will support long-term, resilient, growth and maximise funding, by aligning flood risk investment with other stakeholders' and developers' infrastructure and economic growth programmes. We will ensure the agreed strategic solution delivers the most sustainable, cost-effective and suitable approach to managing tidal risk.
- We will deliver multi-benefit schemes, seeking to protect and enhance our natural capital, achieving environmental outcomes and delivery of social and economic enhancements through flood risk management.
- We will provide greater certainty and clear strategic direction, supporting investment and helping the Humber realise its full potential. We will deliver an adaptable approach to better protect homes and livelihoods, businesses and potential development opportunities from flooding, helping to promote sustainable economic growth, and improving resilience, taking account of climate change and sea level rise.
- We will make decisions that respond to local needs as well as the long term global trend of sea level rise. We will engage with stakeholders, local people, businesses and key industry partners to seek support, ideas, and agreement on innovative solutions to managing tidal flood risk around the estuary as well as improve their understanding of flood risk and the action they can take to reduce their own risk.
- We will share and use the best available data and most appropriate information on the existing defences, the current flood risk and how this may increase with climate change, to inform open and fair decisions about how to manage risk.

- We will ensure the Strategy is continually relevant, committing to necessary and timely reviews of the strategy, as we develop new understanding, including following significant tidal flooding, to ensure it continues to deliver its agreed objectives for the benefit of lives, livelihoods and infrastructure.

6.5.3 Compatibility between the Strategy objectives and the SA objectives

Table 6.3 Strategy objectives and SA objectives-compatibility matrix

Strategy objectives	SA1 – Population and human health	SA2 – Communities and connectivity	SA3 – Economic development	SA4 – Rural land-use	SA5 – Material assets	SA6 – Biodiversity	SA7 – Water	SA8 – Geomorphology	SA9 – Landscape, townscape and seascape character	SA10 – Cultural heritage	SA11 – Climate factors
1. The Environment Agency, Local Authorities and the Humber LEP will work in partnership to support sustainable development and a prosperous Humber. We will do this by redefining the strategic approach to managing tidal flood risk on the Humber for our communities and the Country, setting the way forward for the next 100 years taking into account predicted sea level rise and climate change.	C	C	C	C	C	C	C	C	C	C	C
2. The new strategy, which builds on existing work, will be adopted by the Local Authorities partners and we aim to obtain Defra approval in 2019.	C	C	C	C	C	C	C	C	C	C	C
With our partners											
3. We will support long-term, resilient, growth and maximise funding, by aligning flood risk investment with other stakeholders' and developers' infrastructure and economic growth programmes. We will ensure the agreed strategic solution delivers the most sustainable, cost-effective and suitable approach to managing tidal risk.	C	C	C	C	C	-	-	-	-	-	C
4. We will deliver multi-benefit schemes, seeking to protect and enhance our natural capital, achieving environmental outcomes and delivery of social and economic enhancements through flood risk management	C	C	C	C	C	C	C	C	C	C	C
5. We will provide greater certainty and clear strategic direction, supporting investment and helping the Humber realise its full potential. We will deliver an adaptable approach to better protect homes and livelihoods, businesses and potential development opportunities from flooding, helping to	C	C	C	C	C	-	-	-	-	-	C

promote sustainable economic growth, and improving resilience, taking account of climate change and sea level rise.												
6. We will make decisions that respond to local needs as well as the long-term global trend of sea level rise. We will engage with stakeholders, local people, businesses and key industry partners to seek support, ideas, and agreement on innovative solutions to managing tidal flood risk around the estuary as well as improve their understanding of flood risk and the action they can take to reduce their own risk.	C	C	C	?	-	-	-	-	-	-	-	C
7. We will share and use the best available data and most appropriate information on the existing defences, the current flood risk and how this may increase with climate change, to inform open and fair decisions about how to manage risk.	C	C	C	C	C	C	C	C	C	C	C	C
8. We will ensure the Strategy is continually relevant, committing to necessary and timely reviews of the strategy, as we develop new understanding, including following significant tidal flooding, to ensure it continues to deliver its agreed objectives for the benefit of lives, livelihoods and infrastructure.	-	-	-	-	-	-	-	-	-	-	-	-
c=compatible; - = no relation; ?= uncertain; nc= not compatible												

The results of the compatibility test (shown in Table 6.3) do not indicate any incompatibility. Most of the Strategy objectives are compatible with most SA objectives, although no relationship could be established between the SA objectives and Strategy objective 8, as it relates to the Strategy production process.

Strategy objective 4 (delivering sustainability enhancements) is fully compatible with all SA objectives as it specifically supports the delivery of schemes that will benefit the environmental, social and economic aspects and measures that support sustainable development.

As local authorities will be involved in the Strategy production process and that adherence to their own Local Plan policies relating to social, economic and environmental factors are likely to be tested through their engagement at a high level, Strategy objectives 1 and 2 are found to be compatible with all SA objectives.

7. Next steps

7.1 Next steps

The SA Scoping Report has been updated following consideration of the responses to the SA Scoping Report consultation held between December 2017 and January 2018 and subsequent revision of the study area boundary, to form this post-consultation Final SA Report. The updates mainly related to revisions to the baseline information and the plans and policies review (Appendix 1) and minor changes to the SA Framework. This SA Framework will now be adopted for use in the appraisal of the Humber 2100+ Strategy options.

As described in Table 1.1, the next stage in the SA will be to assess the initial Strategy options. This will be documented in the Initial Options Appraisal Report.

2018 Version

8. Abbreviations and glossary

Abbreviation/ term	Description
Adverse effect (on site integrity)	An effect on the qualifying interests of a European site which is negative in terms of the achievement of the conservation objectives for that site.
Alternative solutions	<p>This is a part of the tests in Article 6(4) of the Directive and regulations 85C and 49 of the Habitats Regulations.</p> <p>In any exceptional case, where regulation 85C or 49 is applied to a proposed plan, the plan-making body must first be satisfied that there are no alternative solutions.</p> <p>The UK Government expects these special provisions to be used only in the most exceptional circumstances, with plans being amended to avoid adverse effects on European sites, so rendering the application of the alternative solutions test unnecessary.</p>
Appropriate assessment (AA)	<p>AA is one part of the Habitats Regulations Appraisal process.</p> <p>An AA is only required where the plan-making body determines that the plan is likely to have a significant effect on a European site in Great Britain, or a European Offshore Marine Site, either alone or in combination with other plans or projects, and the plan is not directly connected with or necessary to the conservation management of the site.</p>
Artificial Water Bodies (AWB)	<p>Article 2 (8) of the WFD defines an artificial water body as a 'body of surface water created by human activity'.</p> <p>WFD permits Member States to identify and designate artificial water bodies (AWB) and heavily modified water bodies (HMWB) according to Article 4(3) WFD. The assignment of less stringent objectives to water bodies and an extension of the timing for achieving the objectives is possible under other particular circumstances. These derogations are laid out in Articles 4(4) and 4(5) of the WFD.</p>
Bioeconomy	The production of renewable biological resources and their conversion into food, feed, energy, chemicals and other materials is referred to as the bio economy.
Biodiversity opportunity areas	Biodiversity Opportunity Areas' are areas where conservation action, such as habitat creation, restoration or expansion, is likely to have the greatest benefit for biodiversity. They are centred on existing areas of biodiversity interest, but have a key role as areas which offer strategic opportunities for biodiversity enhancement.
Birds Directive	Directive 2009/147/EC of the European Parliament and of the European Council of 30th November 2009 on the conservation of wild birds.
ChAMP	Coastal Habitat Management Plan.

Abbreviation/ term	Description
Community Forests	<p>Community Forests have a national accord with the Forestry Commission. Each Community Forest is a partnership between local authorities and local, regional and national partners including Natural England.</p> <p>The Community Forest programme creates high-quality environments for millions of people by revitalising derelict land and providing opportunities for leisure, recreation and cultural activities, and by enhancing biodiversity, preparing for climate change, and by supporting education, healthy living and social and economic development.</p>
Competent authority	<p>An expression used in the Habitats Directive and Habitats Regulations, referring to the authority that is responsible for making a decision about a project application or adopting a plan.</p> <p>Any public body or public office is capable of being a competent authority as defined by regulation 6 of the Habitats Regulations.</p>
Conservation objectives	<p>These are referred to, but not defined, in the Habitats Directive and Regulations.</p> <p>They are set by Natural England for each qualifying interest of each European site.</p> <p>They form the basis of assessing the potential effects of plans and projects on European sites.</p>
DCLG	Department for Communities and Local Government
Defra	Department for Environment, Food and Rural Affairs
Ecological connection	<p>In the context of this report this is intended to refer to areas shared by qualifying interest habitats and species. In the context of SPAs this also includes foraging of SPA bird species.</p>
Environment stewardship scheme	<p>Run by Natural England, this is an incentive based agri-environment scheme aimed at encouraging farmers to adopt practices that will result in - reduced soil erosion; improved water quality; improve conditions for farmland wildlife; maintain and enhance landscape character as well as protect the historic environment.</p>
European site	<p>European Sites in this context are Special Protection Areas (SPA), classified under the EC Birds Directive 1979, and Special Areas of Conservation (SAC) designated under the EC Habitats Directive 19926.</p> <p>Footnote 2 of the DCLG guidance of 2006 correctly states that Ramsar sites are not European sites within the meaning of the legislation. However, the Government expects public authorities to treat all Ramsar sites and potential SPAs (pSPA) as if they are fully designated European Sites, for the purpose of considering development proposals that may affect them. Ramsar sites should</p>

Abbreviation/ term	Description
	be included in the assessment. The collective term for European sites and Ramsar sites in this report is 'international sites.'
Flood and Coastal Erosion Risk Management (FCERM)	<p>Significant flooding in 1998, 2000, 2005, 2007, 2009 and 2013 highlighted the need for comprehensive, integrated and forward-thinking approaches to managing flood and coastal erosion risks in England and Wales.</p> <p>The government's strategy for flood and coastal erosion risk management for England (Making Space for Water, MSfW) identifies that sustainable development should be firmly rooted in all flood and coastal erosion risk management decisions and operations (Defra, 2004).</p>
Good Ecological Potential (GEP)	<p>Ecological Status is classified in all Water Bodies. For Heavily Modified Water Bodies' and Artificial Water Bodies', a separate classification process applies because these water bodies cannot reach good ecological status due to socio-economic uses. Whether a HMWB or AWB meets its Ecological Potential or not is assessed by:</p> <ul style="list-style-type: none"> • Identifying the impacts affecting the water body; • Identifying the mitigation measures necessary to ensure the hydromorphological characteristics of a water body are consistent with Good or Maximum Ecological Potential; • Assessing whether those measures have been taken. <p>Where all applicable mitigation measures have already been taken or screened out, the water body can be classified as Good Ecological Potential or better. This will then be combined with the outcomes from other assessments to give an overall classification.</p>
Gross Value Added (GVA)	<p>GVA is a measure of the increase in the value of the economy due to the production of goods and services. It is measured at current basic prices, which include the effect of inflation, excluding taxes (less subsidies) on products (for example, Value Added Tax). GVA plus taxes (less subsidies) on products is equivalent to gross domestic product (GDP).</p> <p>Regional estimates of gross value added are measured using the income approach, sometimes denoted by GVA(I). This involves adding up the income generated by UK resident individuals or corporations in the production of goods and services. It is calculated gross of deductions for consumption of fixed capital, which is the amount of fixed assets used up in the process of production in any period.</p>
Groundwater Safeguard Zones (SGZ)	SGZ's are designated where raw drinking water supplies (in this case groundwater) are at risk of deterioration due to the use of substances like pesticides or nitrates. This reduces the need to build expensive new drinking water treatment plants and helps Environment Agency to meet the Water Framework Directive.

Abbreviation/ term	Description
Groundwater Source Protection Zone (SPZ)	<p>SPZs are areas of groundwater where there is a particular sensitivity to pollution risks due to the closeness of a drinking water source and how the groundwater flows to the source. They are used to protect abstractions used for public water supply and other forms of distribution to the public such as mineral and bottled water plants, breweries, and food production plants. Smaller abstractions for private potable water supply will have a default SPZ area defined for them. Generally, the closer the activity is to a groundwater source, then the greater the risk to groundwater</p>
Habitats Directive	<p>EC Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora.</p>
Habitats Regulations	<p>Covers both the EC Birds (Council Directive 2009/147/EC) and Habitats Directives (Council Directive 92/43/EEC). The Birds Directive protects all wild birds, their nests, eggs and habitats within the European Community. It gives EU member states the power and responsibility to classify Special Protection Areas (SPAs) to protect birds which are rare or vulnerable in Europe as well as all migratory birds which are regular visitors.</p> <p>The Habitats Directive builds on the Birds Directive by protecting natural habitats and other species of wild plants and animals. It gives EU member states the power and responsibility to Special Areas of Conservation (SACs).</p> <p>Together with the Birds Directive, it underpins a European network of protected areas known as Natura 2000. This network includes SPAs classified under the Birds Directive (SACs) classified under the Habitats Directive.</p>
Habitats Regulations Assessment (HRA)	<p>HRA is the whole procedure of plan appraisal, including deciding whether a plan is subject to the Regulations; the 'screening' process for determining whether an AA is required; and the AA stage itself, including consultation with Natural England.</p>
HESMP	<p>Humber Estuary Shoreline Management Plan. The HESMP provided the framework for investment in defences to reduce the risk of flooding to people, property and the environment. This has since been superseded by the Flamborough Head to Gibraltar Point Shoreline Management Plan and HFRMS.</p>
Heavily Modified Water Body (HMWB)	<p>HMWB are bodies of water which, as a result of physical alterations by human activity (for example straightening of a river - channelisation), are substantially changed in character and cannot, therefore, meet "good ecological status" (GES).</p> <p>WFD permits Member States to identify and designate artificial water bodies (AWB) and heavily modified water bodies (HMWB) according to Article 4(3) WFD. The assignment of less stringent objectives to water bodies and an extension of the timing for achieving the objectives is possible under other particular</p>

Abbreviation/ term	Description
	<p>circumstances. These derogations are laid out in Articles 4(4) and 4(5) of the WFD.</p>
<p>Humber 2100+ , also referred to as 'the project' or 'Strategy'</p>	<p>The current review and new version of the Humber Flood Risk Management Strategy that was published in 2008. The project will be undertaken in full partnership with the Lead Local Flood Authorities and Local Planning Authorities around the estuary, as well as other Statutory Agencies, Risk Management Authorities and other key stakeholders. The aim is to produce a revised Strategy that sets out the strategic approach to managing tidal flood risk around the Humber Estuary for the next 100 years and that is agreed and formally adopted by all partners.</p>
<p>Hydrological connection</p>	<p>Any pathways through which water could travel between two areas.</p>
<p>Imperative reasons of overriding public interest (IROPI)</p>	<p>This is a part of the tests in Article 6(4) of the Directive and regulations 85C and 49 of the Habitats Regulations.</p> <p>Different criteria relate to priority habitats.</p> <p>The UK Government expects these special provisions to be used only in the most exceptional circumstances.</p> <p>Plans should be amended to avoid adverse effects on European sites, so rendering the application of the imperative reasons of overriding public interest test unnecessary.</p>
<p>Indices of Multiple Deprivation- 10% Most deprived 20% Most deprived</p>	<p>The Indices of Deprivation 2015 provide a set of relative measures of deprivation for small areas (Lower-layer Super Output Areas) across England, based on seven different domains of deprivation:</p> <ul style="list-style-type: none"> • Income Deprivation • Employment Deprivation • Education, Skills and Training Deprivation • Health Deprivation and Disability • Crime • Barriers to Housing and Services • Living Environment Deprivation <p>Combining information from the seven domains produces an overall relative measure of deprivation, the Index of Multiple Deprivation. In addition, there are seven domain-level indices, and two supplementary indices: the Income Deprivation Affecting Children Index and the Income Deprivation Affecting Older People Index.</p> <p>It is common to describe how relatively deprived a neighbourhood is by saying whether it falls among the most deprived 10 per cent or 20 per cent. To help with this, deprivation 'deciles' allow you to describe an area as, for example, being amongst the 20 per cent most deprived neighbourhoods in the country.</p>

Abbreviation/ term	Description
In combination	<p>The requirement in the Habitats Regulations is to undertake an AA of a plan if it would be likely to have a significant effect on a European site <i>"either alone or in combination with other plans or projects"</i>.</p> <p>The AA should take into account in combination effects where relevant.</p>
Likely significant effect (LSE)	<p>A likely effect is one that cannot be ruled out on the basis of objective information.</p> <p>The test is a <i>'likelihood'</i> of effects rather than a <i>'certainty'</i> of effects.</p> <p>Where a project is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on the site.</p> <p>The assessment of that risk must be made in the light, amongst other things, of the characteristics and specific environmental conditions of the site concerned.</p> <p>The identification of LSE requires AA to be carried out (see definition of AA in this glossary). Natural England (2009) guidance describes that an AA will be required as <i>"if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either individually or in combination with other plans and projects"</i></p> <p>Refer to the Waddenzee judgement at the end of this glossary.</p>
Managed realignment areas	<p>Managed realignment typically involves landward realignment of and existing flood defence embankment, creating an area of inter-tidal habitat. These sites may provide compensatory habitat, under the Habitats Regulations, to replace that lost through flood risk management activities around the estuary.</p>
National Character Areas	<p>National Character Areas (NCAs) divide England into 159 distinct natural areas, each defined by a unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity (Natural England, 2014). Typically, these areas share the same landscape characteristics and the profiles information linked with the NCAs contribute to decision making about development around these areas.</p>
National Planning Policy Framework (NPPF)	<p>The recent revision to the planning system in the year 2012 resulted in the production of the NPPF which replaces the previous Planning Policy Guidance and Planning Policy Statements. The NPPF gives more responsibility to the Local Authorities in the decision making of planning matters on the premise that the presumption for sustainable development is always upheld.</p>
Natura 2000	<p>The Europe-wide network of Special Protection Areas and Special Areas of Conservation, in all member states, that is intended to provide protection for the bird species and assemblages in</p>

Abbreviation/ term	Description
	accordance with the Birds Directive, and for the species and habitats listed in Annexes 1 and 2 of the Habitats Directive.
Nitrate Vulnerable Zone (NVZ)	Areas designated as being at risk from agricultural nitrate pollution. Defra reviews NVZs every four years to account for changes in nitrate concentrations.
ODPM	Office of Deputy Prime Minister, now Department for Communities and Local Government (DCLG).
Predominantly rural (Census 2011 Urban-Rural classification)	≥ 50% of the resident population lives in rural areas or rural-related hub towns.
Predominantly urban, including urban with city and town and urban with minor conurbation (Census 2011 Urban-Rural classification)	≥ 74% of the resident population lives in urban areas.
Qualifying interests	The habitats or species for which a site has been classified (SPA) or designated (SAC).
Ramsar site	<p>A site listed as a wetland of international importance under the provisions of the 'Ramsar Convention'.</p> <p>A Ramsar site is not a European site as a matter of law, but all Ramsar sites in England are also European sites and/ or Sites of Special Scientific Interest and are protected under the relevant statutory regime.</p>
River Basin Management Plan (RBMP)	River basin management plans (RBMPs) set out how organisations, stakeholders and communities will work together to improve the water environment. See link for further details.
Screening	<p>'Screening' is a term used in guidance for convenience, to describe the initial stages of the HRA in the consideration of whether the policies and proposals of a plan are likely to have a significant effect on a European site, either alone or in combination with other plans or projects, and should thus be subject to appropriate assessment.</p> <p>It is not a term used in either the Directive or the Regulations.</p>
Sea level rise	The rise in sea level caused by thermal expansion of the oceans and to a lesser extent from melting of the ice caps and glaciers. Relative sea level rise refers to the effective change in sea level relative to the land surface and also takes account of long-term land movement.
Shoreline Management Plan (SMP)	The SMP is a high-level policy document from which the organisations that manage the shoreline set their long-term plan.
Site condition	Site condition gives an indication of the conservation status of habitats and species at the site level.

Abbreviation/ term	Description
	It is linked to the concept of 'favourable conservation status' which is defined in detail in Article 1 of the Habitats Directive; in summary, the conservation status is 'favourable' where all that is necessary to sustain the habitats or species in the long-term is in place.
Site integrity	See adverse effect (site integrity) above.
Special Area of Conservation (SAC)	<p>Area designated in respect of habitats and/or species under Articles 3 – 5 of the EC Habitats Directive.</p> <p>All SACs are European sites and part of the Natura 2000 network. Special Areas of Conservation are protected sites which are designated under the European Commission Habitats Directive to conserve 189 habitat types (78 of which are in the UK) and 788 species across Europe (JNCC, Special Areas of Conservation (SAC), 2017).</p>
Special Protection Area (SPA)	<p>Area classified in respect of bird species under Article 4 of the Birds Directive.</p> <p>All SPAs are European sites and part of the Natura 2000 network.</p>
Storm (tidal) surge	The temporary increase, at a particular locality, in the height of the sea due to extreme meteorological conditions (low atmospheric pressure and/or strong winds). The storm surge is defined as being the excess above the level expected from the tidal variation alone at that time and place.
Strategic Environmental Assessment (SEA)	<p>The SEA procedure can be summarised as follows: an environmental report is prepared in which the likely significant effects on the environment and the reasonable alternatives of the proposed plan or programme are identified. The public and the environmental authorities are informed and consulted on the draft plan or programme and the environmental report prepared.</p> <p>The European SEA Directive 2001/42/EC required that all member states of the European Union should have ratified the Directive into their own country's law by 21 July 2004 and in England it is transposed as The Environmental Assessment of Plans and Programmes Regulations 2004.</p>
Sustainability Appraisal (SA)	A Sustainability Appraisal (SA), typically conducted for Local Development Documents, is required under the new planning system for certain plans/strategies, by law this must also incorporate the requirements of the European Strategic Environmental Assessment Directive (SEA). The main purpose of the Sustainability Appraisal process is to predict the positive and negative impacts of policies, whether social, environmental or economic, at an early stage, allowing any negative effects to be mitigated against. The appraisal is subject to consultation, and takes place alongside the preparation of the plan/strategy.

Abbreviation/ term	Description
Waterbody status	<p>The ecological component uses biological quality elements, hydro morphology, physio-chemical and pollutants to assess the state of a water body.</p> <p>Some water bodies cannot achieve good ecological status because of modifications and structures within the water body and so are classed as heavily modified, and have to reach Good Ecological Potential (GEP) through implementation of a series of mitigation measures outlined in the applicable River Basin Management Plan (RBMP).</p>
Water Framework Directive	<p>In October 2000 the 'Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy' (Water Framework Directive or WFD) was adopted and came into force in December 2000. The purpose of the Directive is to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater.</p> <p>The Directive is transposed into national law in England through the following regulation: The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.</p>

2018 Version

9. References

ABPmer . (2004). Humber holocene chronology .

Action on Climate. (2015, December). Mitigation, adaptation and resilience: terminology explained. UK.

Atkins. (2010). *Joint Minerals Development Plan Document*.

Bhatia, N. (2012). Ecological and economic valuation of managed realignment sites, Humber Estuary. *Phd thesis, University of Hull*.

BioVale. (n.d.). Retrieved from <https://www.biovale.org/our-region/farming/>

Black and Veatch . (2004). *Report for the EA. Humber Estuary Shoreline Management Plan Phase 2 Summary of Geomorphology Studies*.

Black and Veatch . (2004). *Report for the Environment Agency. STRATEGIC ENVIRONMENTAL ASSESSMENT FOR THE LONG-TERM PLAN. ANNEX 2. FINAL REPORT*. 76 pp.

Black and Veatch . (2005). *Humber Estuary Shoreline Management Plan Phase 2 Geomorphology Addendum 1*.

Boyes, S., & Elliot, M. (2006). Organic matter and nutrient inputs to the Humber Estuary, England. *US National Library of Medicine National Institutes of Health*, 136-143.

Cambridge Studios. (n.d.). *Humber Estuary Landscape and Green Infrastructure Study Report*. unpublished.

Cambridge Studios. (unpublished). *Humber Estuary Integrated Landscape and Investment Study*.

CIRIA. (2010). *Flood Resilience and Resistance for Critical Infrastructure* .

Clapp, J. (2009). Managed realignment in the Humber Estuary: factors influencing sedimentation. *Phd thesis, University of Hull*.

DEFRA. (2009). *Flood and Coastal Erosion Risk Management Policy*.

Environment Agency (2001). *The Humber Estuary Shoreline Management Plan* .

Environment Agency (2005). *The Humber Coastal Habitat Management Plan*.

Environment Agency (2008). *Humber flood risk management strategy*. Leeds: Environment Agency .

Environment Agency (2016). *Humber River Basin District Flood Risk Management Plan*.

Environment Agency (2000). Planning for rising tides. The Humber Estuary Shoreline Management plan, September 2000.

Environment Agency. (2005). *Humber River Basin Management Plan*.

Environment Agency. (2015). *The Humber Estuary RBMP*.

Environment Agency. (2015). *Water for life and livelihoods- updated*. Environment Agency.

Environment Agency. (2016). *Creating a better place-Our ambition to 2020*.

Environment Agency. (2017, October 22). *Water Abstraction Licences*. Retrieved from Environment Agency: http://maps.environmentagency.gov.uk/wiyby/wiybyController?topic=water_abstractions&layerGroups=default&lang=en&ep=map&scale=6&x=524133.333333333185&y=415259.4270833337#x=490146&y=408911&lg=1,2,3,6,10,&scale=5

Environment Agency and Mott Macdonald. (2014). *Implementing the Water Framework Directive Environmental Condition and WFD Status in the Humber Estuary*.

European Commission. (1991). Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0676>

European Commission. (2000). *The EU Water Framework Directive*.

European Commission. (2000). *Natura 2000*.

GOV UK. (1981). *Wildlife and Countryside Act*.

GOV UK. (1994). *The Conservation (Natural Habitats, &c.) Regulations*.

GOV UK. (2000). *Countryside and Rights of Way Act*.

GOV UK. (2017). *The Conservation of Habitats and Species Regulations*.

GOV UK. (2010). *Flood and Water Management Act*.

GOV UK. (2011). *The National Flood and Coastal Erosion Risk Management Strategy for England*.

GOV UK. (2012). *National Planning Policy Framework*.

GOV UK. (2015). *English Indices of Deprivation 2015*. Retrieved from: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>

GOV UK. (2015). *Indices of Multiple Deprivation*. Retrieved from:

<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>

GOV UK. (2017). *The Public Health England Study*.

Greater Lincolnshire Local Economic Partnership . (n.d.). *2014-2020 Strategic Economic Plan for the Humber*.

Halcrow and Black & Veatch. (2005). *HEFDS Strategy Development Study SEA Environmental Report*. Environment Agency.

HARBASINS Report. (2008). *Managed Realignment in the Humber Estuary, UK. Institute of Estuarine & Coastal Studies*.

Historic England. (2017). *Conservation Areas*. Retrieved from

<https://historicengland.org.uk/listing/what-is-designation/local/conservation-areas/> Last accessed: 22/09/2017

Hull City Council. (2004). *East Riding of Yorkshire Council and Kingston upon Hull City Council: Joint Minerals Development Plan Document* .

Humber Nature Partnership. (2016). *Humber Management Scheme Action Plan*. Retrieved from

<http://www.humburnature.co.uk/>

JBA Consulting . (2011). *Review of the Geomorphological Dynamics of the Humber Estuary* . 55 pp.

JNCC. (2017). *Special Areas of Conservation (SAC)*. Retrieved September 13, 2017, from

<http://jncc.defra.gov.uk/page-23>

JNCC. (2017). *Special Protection Areas (SPAs)*. Retrieved September 13, 2017, from

<http://jncc.defra.gov.uk/page-162>

LMI Humber. (n.d.). *Food & Agriculture*. Retrieved from LMI Humber: <http://lmihumber.co.uk/sectors/food-agriculture/>

Metcalf, S., Ellis, S., Horton, B., Innes, J., McArthur, J., Mitlehner, A., . . . Tooley, M. (2000). The Holocene evolution of the Humber Estuary: reconstructing change in a dynamic environment . *Geological Society of London Publications*, 97-118.

Mitchell, S., Uncles, R., & Akesson, L. (2012). Observations of turbidity in the Thames Estuary. *Water Environment* , 511-520.

Natural England . (2014). *National Character Areas profiles: data for local decision making* . Retrieved from:

<https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making>
Last Accessed: 22/09/2017/

Natural England. (2010). *Yorkshire and Humber Green Infrastructure Study*.

Natural England. (n.d.). *Humber Green Mapping Project*. Retrieved from http://webarchive.nationalarchives.gov.uk/20140605112209/http://www.naturalengland.org.uk/regions/yorkshire_and_the_humber/ourwork/yandhgreeninfrastructurereadingproject.aspx

North Lincolnshire Council. (2011). *Core Strategy* .

Office for National Statistics. (2014). *Population estimates*. Retrieved from <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/2015-06-25>

ONS. (n.d.). Retrieved from <https://www.ons.gov.uk/>

ONS. (2017a). *H103 Regional labour market: Headline indicators for Yorkshire and The Humber*. Retrieved from <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforyorkshireandthehumberh103>

ONS. (2017b). *H104 Regional labour market: Headline indicators for the East Midlands*. Retrieved from <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsfortheeastmidlandsh104>

Pontee, N., 2013. Defining coastal squeeze: a discussion. *Ocean and Coastal management*. 84. 204-207pp

Public Health England . (2017). *The English National Study for Flooding and Health: First year report Briefing for policy makers and practioners*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/597846/NSFH_briefing_for_policymakers_and_practitioners.pdf

Townend, I., & Whitehead, P. (2003). A preliminary net sediment budget for the Humber Estuary . *Science for The Total Environment*, 755-767.

Uncles, R., Stephens, J., & Harris, C. (2006b). Properties of suspended sediment in the estuarine turbidity maximum of the highly turbid Humber Estuary system, UK. *Ocean Dynamics*, 235-247.

Uncles, R., Stephens, J., & Law, D. (2006a). Turbidity maximum in the macrotidal, highly turbid Humber Estuary, UK: Flocs, fluid mud, stationary suspensions and tidal bores. *Estuarine, Coastal and Shelf Science*, 30-52.

University of Hull. (2016). *GVA Growth in the Humber Economy Breifing note for Humber Local Enterprise Partnership Board*. Retrieved from http://www.humberlep.org/wp-content/uploads/2016/04/Paper-C-Appendix-GVA-growth-in-the-Humber-Economy_V17.pdf

Wilson, S. (2010). *Humber Estuary Coastal Authorities Group Flamborough Head to Gibraltar Point Shoreline Management Plan Non-Technical Summary*.

10. Appendices

2018 version

If you would like to find out more about Humber 2100+, email the Humber Team at:

HStrategy@environment-agency.gov.uk

2018 version

Appendix 1 – Regulations, Policies and Plans

Title	Description	Relevance
National		
The Wildlife and Countryside Act 1981 (as amended).	<p>Sites are notified as Sites of Special Scientific Interest under this Act for their important flora, fauna, geological or physiographical features, Limestone Pavement Orders, and Marine Nature Reserves.</p> <p>Assent from Natural England for operations by the Environment Agency is required under Sections 28H and 28I (Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000) before any works which might adversely affect a SSSI are undertaken. Sections 28G-I place duties on public bodies to further the conservation and enhancement of SSSIs, both in carrying out operations and in exercising decision-making functions. The Act also allows for the protection of wildlife (birds, other animals and plants) listed in Schedules 1, 5 and 8, and prevents the spread of non-native species listed in schedule 9.</p>	<p>The SA will support this act and consider and uphold the protection, conservation and enhancement of SSSIs and any statutory designations.</p>
The Conservation of Habitats and Species Regulations 2017.	<p>Known as 'The Habitats Regulations', these regulations consolidate and update the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations 2010"). The Conservation of Habitats and Species Regulations 2017 provide for the designation and protection of 'European sites' (SACs and SPAs) or a 'European Marine Site' and the protection of 'European protected species' listed in Schedule 2.</p> <p>The Regulations require competent authorities to carry out an appropriate assessment in circumstances where a plan or project is likely to significantly affect a European site or a European Marine site. The Regulations require competent authorities to carry out an appropriate assessment in circumstances where a plan or project is likely to significantly affect a European site or a European Marine site. Habitats Regulations Assessment (HRA) refers to the whole process, including the appropriate assessment stage (where one is required), which is being undertaken as part of the strategy.</p>	<p>The SA should look to protect these sites and include mitigation/compensation measures where this may not be possible.</p>

Countryside and Rights of Way (CROW) Act 2000.	<p>Makes some amendments to the Wildlife and Countryside Act (1981), strengthening the protection of SSSIs and providing additional protection to Areas of Outstanding Natural Beauty, access to the countryside and Public Rights of Way.</p>	<p>The SA should look to protect SSSIs, Areas of Outstanding Natural Beauty, access to the countryside and Public Rights of Way, where possible.</p>
Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.	<p>The main objectives of the Water Framework Directive are to protect and enhance surface water (including lakes, streams and rivers), groundwaters and dependent ecosystems. The Environment Agency is the 'competent authority' in England and Wales responsible for implementing the regulations.</p>	<p>The SA should align with this Directive to protect and enhance waterbodies.</p>
The UK Government Sustainable Development Strategy: Securing the Future, DTI – Mar 2005.	<p>This strategy is the highest-level plan for sustainable development in the UK. Key objectives relate to:</p> <ul style="list-style-type: none"> Living Within Environmental Limits; Ensuring a Strong, Healthy and Just Society; Achieving a Sustainable Economy; Promoting Good Governance; and Using Sound Science Responsibly. 	<p>The SA should take into account the key objectives and targets of the Strategy.</p>
Natural Environment and Rural Communities Act 2006.	<p>Known as the 'NERC Act', this also makes some amendments to the Wildlife and Countryside Act (1981) and implements key aspects of the Government's Rural Strategy published in July 2004. It established Natural England as responsible for managing England's natural environment, working in partnership with others such as the Environment Agency and local authorities. It places a duty to conserve biodiversity on public authorities in England.</p>	<p>The SA should support this act and consider the conservation and enhancement of biodiversity.</p>
Climate Change Act 2008.	<p>The Climate Change Act creates a new approach to managing and responding to climate change in the UK, by:</p> <ul style="list-style-type: none"> -Setting ambitious, legally binding targets of at least an 80 percent cut in greenhouse gas emissions by 2050 and emission reduction of at least 34 percent by 2020- both against at 1990 baseline; -Taking powers to help meet those targets; -Strengthening the institutional framework; -Enhancing the UK's ability to adapt to the impact of climate change; and -Establishing clear and regular accountability to the UK Parliament and to the devolved legislatures. 	<p>Purpose of the strategy should aid adaptation to climate change impacts and the SA should encourage more sustainable proposals to help to achieve these targets.</p>
UK Climate Change Risk Assessment 2017 Evidence Report, DEFRA, 2017.	<p>The UK Government is required under the 2008 Climate Change Act to publish a UK-wide Climate Change Risk Assessment (CCRA) every five years. The Act stipulates that the Government must assess 'the risks for the</p>	<p>The SA should support the findings of the report and take into consideration the relevant risks and opportunities identified within the report.</p>

	United Kingdom from the current and predicted impacts of climate change’.	
Future Water – Water Strategy for England, DEFRA, 2008.	<p>This strategy sets out the Governments aspirations for the water sector by 2030 and the action plan required to meet this vision.</p> <p>The strategy is a response to the pressures faced by the water sector as a result of climate change (droughts and floods).</p> <p>The vision is for the sustainable delivery of secure water supplies and an improved and protected water environment.</p> <p>Targets set by the vision for 2030 are:</p> <ul style="list-style-type: none"> • Improved the quality of our water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from our taps; • Sustainably managed risks from flooding and coastal erosion, with greater understanding and more effective management of surface water; • Ensure a sustainable use of water resources, and implement fair, affordable and cost reflective water charges; • Cut greenhouse gas emissions; and embed continuous adaptation to climate change and other pressures across the water industry and water users. 	The SA should align with this strategy in considering water resources issues and improvements to flood risk management.
A Green Future: Our 25 Year Plan to Improve the Environment, DEFRA, Jan 2018.	<p>The 25 year Environment Plan sets out the aims and actions of the UK government over the next 25 years to deliver cleaner air and water in cities and rural landscapes, protect threatened species and provide richer wildlife habitats. By adopting the plan the UK government aims to achieve the following;</p> <ul style="list-style-type: none"> • Clean air. • Clean and plentiful water. • Thriving plants and wildlife. • Reducing the risks of harm from environmental hazards. • Using resources from nature more sustainably and efficiently. • Enhancing beauty, heritage and engagement with the natural environment • Mitigating and adapting to climate change. • Minimising waste. • Managing exposure to chemicals. • Enhancing biosecurity. 	The SA should take into account the aims of the 25 Year Environment Plan, contributing to the achievement of the UK governments goals and targets by encouraging proposals which align with the plans aspirations.
Making Space for Water: Taking Forward a Government	The government is trying to implement a more holistic approach to managing flood and coastal erosion. It takes into account all sources of flooding, embedding flood and coastal risk management across a range of government	The SA should align with the objectives and issues identified in the document.

<p>Strategy for Flood and Coastal Erosion Risk Management in England. Latest Government Response, DEFRA, Dec 2007.</p>	<p>policies and reflecting other relevant government policies in policies and operations of flood and coastal erosion risk management.</p> <p>It aims to manage risks by employing an integrated portfolio of approaches which reflect both national and local priorities to:</p> <ul style="list-style-type: none"> - Reduce threat to people and their property; - Deliver the greatest environmental, social and economic benefit consistent with government sustainable development principles. The aim of this new strategy response has an additional aim: - To secure efficient and reliable funding mechanisms that deliver the levels of investment required to achieve the vision of this strategy. 	
<p>Defra and The Environment Agency (2011) Understanding the Risks, Empowering Communities, Building Resilience – The National Flood and Coastal Erosion Flood Risk Management Strategy for England.</p>	<p>Document advises how flooding and coastal erosion can have a devastating impact on communities and outlines a strategy which is more effective risk management.</p> <p>The strategy enables people, communities, business, infrastructure operators and the public sector to work together to:</p> <ul style="list-style-type: none"> - Ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively; - Set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining risk; - Manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment; - Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; - Help communities to recover more quickly and effectively after incidents. <p>The strategy shows how communities can be more involved in local flood and coastal erosion risk management. It also emphasises the need to balance national and local activities and funding.</p>	<p>The SA should align with this strategy and will take into account the key aims which will improve the climate change resilience and adaptation of communities, empower communities and encourage them to work together.</p>
<p>The National Flood and Coastal Erosion Risk Management Strategy for England, 2011.</p>	<p>The National Flood and Coastal Erosion Risk Management Strategy for England developed by the Environment Agency provides the overarching framework for future action by all risk management authorities to tackle flooding and coastal erosion in England.</p>	<p>The SA should align with this strategy, assessing the contribution towards the achievement of sustainable development of the flood and coastal erosion risk management proposals.</p>

	<p>The Flood and Water Management Act 2010 (section 7) requires flood and coastal erosion risk management authorities to aim to contribute towards the achievement of sustainable development when exercising their flood and coastal erosion risk management functions.</p> <p>Guidance has been produced which gives a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;</p>	
<p>National Planning Policy Framework (2012).</p>	<p>The National Planning Policy Framework (NPPF) sets out the Government’s economic, environmental and social planning policies for England. Taken together these policies articulate the Government’s vision for sustainable development, which should be interpreted and applied locally to meet local aspirations. The framework replaces all existing Planning Policy Statements, Planning Policy Guidance Notes and some circulars.</p> <p>The NPPF recognises that the purpose of the planning system is to achieve sustainable development, which can be achieved when economic, social and environmental gains are sought jointly. In this, contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.</p>	<p>The SA should take into account the objectives of the NPPF, contributing to the achievement of sustainable development through the flood risk management proposals.</p>
<p>Creating a better place- Our ambition to 2020 (Environment Agency 2016).</p>	<p>This report sets out objectives and aspirations for 2020. The objectives are:</p> <ul style="list-style-type: none"> • A cleaner, healthier environment which benefits people and the economy. • A nation better protected against natural threats and hazards, with strong response and recovery capabilities. • Higher visibility, stronger partnerships and local choices. <p>Few of the aspirations for 2020 include, increased biodiversity and improved habitat, cleaner water used in a more sustainable way, productive lands and soils, well protected designated sites.</p>	<p>Purpose of the strategy is to help achieve the objective related to protection against natural threats and hazards with strong response and recovery capabilities.</p> <p>The strategy and the SA should consider the aspirations for 2020, especially relating to increased biodiversity and improved habitat, protected designated sites, productive lands and soils and water quality.</p>

<p>Planning (Listed Buildings and Conservation Areas) Act 1990.</p>	<p>This is an Act relating to special controls in respect of buildings and areas of special architectural or historic interest.</p> <p>The Act provides listings of buildings of special architectural or historic interest and sets in place the process of compiling and publishing of the listed building lists. It also introduces Building Preservation Notices and authorisation procedures for works to be carried out on listed buildings. Chapter 3 defines the legal rights of owners of Listed Buildings, rights of appeal and the prevention of deterioration and damage, urgent preservation and grants.</p>	<p>The purpose of this act is to preserve and conserve buildings and areas of special architectural or historic interest. The SA should seek to encourage development proposals which seek to protect and preserve buildings and areas covered within the Act.</p>
<p>Ancient Monuments and Archaeological Areas Act 1979.</p>	<p>The Act defines sites that warrant protection due to their being of national importance as 'ancient monuments'. These can be either Scheduled Ancient Monuments or "any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it".</p>	<p>The SA should support this act and consider the conservation and revitalisation of ancient monuments within the study area.</p>
<p>Making Space for Nature – The Lawton Report (2010) (England), Lawton, J.H., <i>Et al.</i></p>	<p>An independent review of England’s wildlife sites and the connections between them, published in September 2010, with recommendations to help achieve a healthy natural environment that will allow our plants and animals to thrive.</p> <p>The review was set up to look at wildlife sites and whether they are capable of responding and adapting to the growing challenges of climate change and other demands on our land.</p>	<p>The SA should take into consideration the recommendations of the report and encourage development which does not impact or increase the pressures identified within the report.</p>
<p>Making Space for Nature: a review of England’s wildlife sites and ecological network (2010), Lawton, J.H.</p>	<p>The report summarises what is happening to England’s wildlife, causes of its decline and the formal definition of an ecological network. The report also describes future pressures, particularly the impacts of climate change and provides a description of the nature and status of our current wildlife sites. The report is considered a primer in basic ecology that lays the groundwork for action underpinned by science. The report concludes with recommendation to mitigate identified issues and pressures.</p>	<p>The SA should take into consideration the recommendations of the report and encourage development which does not impact or increase the pressures identified within the report.</p>
<p>Biodiversity 2020: A strategy for England’s wildlife and ecosystem services, DEFRA, 2011.</p>	<p>This biodiversity strategy for England provides a comprehensive picture of how we are implementing our international and EU commitments. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Sub-Regional</p>		

<p>Countryside Character Areas Volume 3. Yorkshire and the Humber, Countryside Agency 1999.</p>	<p>The majority of the site areas fall within the Humber Estuary Character Area. The Countryside Character Areas do not set any targets, however they do provide good qualitative indicator for monitoring and assessing impacts on landscape character.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the landscape character.</p>
<p>The Humber Flood Risk Management Strategy March 2008 (Planning for the Rising Tides).</p>	<p>This is the current long-term strategy that sets out the Environment Agency's vision for managing the risk of flooding from the Humber Estuary as the climate changes and sea levels rise.</p> <p>The strategy identifies works required in 5, 15 and 100 years of the strategy.</p> <p>It aimed to ensure a good standard of protection from tidal flooding for the first 25 years and beyond for 99% of residents around the estuary and the important industrial areas. There were however substantial lengths of frontage for which making defence improvements was uneconomic, and so the standard of protection would diminish as sea levels rise. The Strategy indicated that it will go under review and update at regular intervals.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Flamborough Head to Gibraltar Point Shoreline Management Plan 2010</p>	<p>The SMP presents the short, medium and long-term Plans for managing the shoreline between Flamborough Head and Gibraltar Point. The main aim of the SMP is develop a sustainable management approach for the shoreline which takes into account key issues and achieves the best possible balance of all the values and features that occur around the shoreline over the next 100 years. The boundary of the SMP overlaps with the HFMRMS boundary. Policies detailed within the take into consideration the strong relationship with social, economic and environmental activities around the shoreline.</p>	<p>The SA should contribute to supporting the aims of this SMP.</p>
<p>Environment Agency (2009) Grimsby and Ancholme Catchment Flood Management Plan.</p>	<p>The majority of North East Lincolnshire is within the Grimsby and Ancholme catchment, with the southern section near Cleethorpes being in the Louth Coastal catchment. Within the Grimsby and Ancholme catchment, North East Lincolnshire falls within two sub-areas.</p> <p>Ancholme, North Lincolnshire Wolds and Laceby sub-area to the west, is an area of low to moderate flood risk where existing flood risk management actions can generally be reduced. The Immingham, Grimsby and Buck Beck sub-area to the east is an area of low, moderate or</p>	<p>The SA should contribute to supporting the aims of this plan.</p>

	<p>high flood risk where flood risk is already managed effectively but where further actions may be needed to keep pace with climate change.</p>	
<p>Aire Catchment Flood Management Plan (2010).</p>	<p>Of most relevance to the Humber Strategy will be the Lower Aire sub-catchment which is predominantly flat sub-area. River flooding and tidal influence of the Humber Estuary combined with surface water and sewers contribute to flooding in this sub-area. The area has number of controlled washlands which store water during a flood. Vision for this sub-area is that the condition and function of the washlands will be improved to reduce runoff rates and the high frequency of local flood events. As climate change develops, the washlands will help to mitigate the effects.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>Ouse Catchment Flood Management Plan (2010).</p>	<p>The CFMP covers districts of Bradford, Craven, East Riding of Yorkshire, Hambleton, Harrogate, Leeds, Ryedale Richmondshire, York and Selby. 95 per cent of the CFMP area comprises agricultural land and the river systems that are included in the CFMP study area are The Rivers Swale; Ure; Nidd; and Wharfe.</p> <p>The areas with highest risk of flooding include Selby/Barlby, Goole and York where key communities with over 100 properties are at risk of flooding, not taking into consideration defences. Of most relevance to the Humber Strategy will be the Tidal Ouse and Wharfe sub-catchments covering areas from Selby down to Goole. Flooding is from both fluvial and fluvial/ tidal sources as well as surface water. Policy 4 linked to areas of low, moderate or high flood risk applies, to continue to manage flood risk as current but further action might be required to keep pace with climate change.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>River Don' Flood Risk Management Strategy (2009).</p>	<p>The River Don' catchment covers an area of approximately 1700km², including the major towns and cities of Chesterfield, Rotherham, Sheffield, Barnsley, Doncaster and Goole. The strategy proposes combination of solutions for the catchment from maintaining the current standard of protection in some areas, to improving structural integrity of embankments protecting low-lying areas, including areas susceptible to tidal flooding, local realignment of flood defences (natural flood management) and re-naturalising the River Don' flood plain</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>

	and finally to continue and improve flood warning and emergency preparedness.	
Draft Isle of Axholme Strategy (2011).	<p>The Strategy covers an area of approximately 520 km² of which approximately 380 km² is artificially drained low-lying land with ground levels of less than 3.0 mOD.</p> <p>The Isle of Axholme covers the Local Authorities of East Riding of Yorkshire, Doncaster, North Lincolnshire and Nottinghamshire. Within this area is 30,000 hectares of Grade 1 and Grade 2 land; which is excellent or very good quality agricultural land. There are approximately 28,000 homes within the study area.</p> <p>Preferred option for the Isle of Axholme was identified as modifying existing raised flood defences to provide the standard of protection against flood events with a 1.33 % (1 in 75) or greater chance of flood happening each year. Other measures recommended and feasible to implement a scheme to formalise the Kilham Flood Storage Area which will reduce flooding to approximately 112 ha of agricultural land between Kilham Farm and Tunnel Pits Pumping Station.</p>	The SA should contribute to supporting the aims of this strategy.
Greater Lincolnshire LEP (2013) Growth Ambitions for the Greater Lincolnshire LEP.	<p>The economic ambitions for Greater Lincolnshire are:</p> <ul style="list-style-type: none"> -Improved infrastructure -Creating the right conditions for business growth -Rural enterprise -Retail -Communications and engagement 	The SA should support the policy and should reflect on it when developing the SA Framework criteria.
Humber Local Enterprise Partnership (LEP) (2014) 2014-2020 Strategic Economic Plan (SEP) for the Humber.	<p>This SEP will form the basis of a Growth Deal with Government and will be a determinant of the Humber's allocation of the Local Growth Fund. The SEP is at the centre of the strategic framework through which economic development will be taken forward over the next five years and beyond. The document has five strategic aim:</p> <ul style="list-style-type: none"> - Creating an infrastructure that supports growth. -Supporting businesses through the provision of expert guidance and appropriate finance. - Ensuring the availability of an excellent standard of housing, town centres and visitor attractions in the Humber LEP area. 	The SA should support the policy and should reflect on it when developing the SA Framework criteria.

	<ul style="list-style-type: none"> - Providing for a skilled workforce. - Investing in flood defences and coastal risk management while promoting sustainable development activities. 	
<p>Sheffield City Region (SCR) Local Enterprise Partnership (LEP) (2014) 2015-2025 Strategic Economic Plan (SEP).</p>	<p>This Plan, combined with the SCR European Structural and Investment Funds Strategy (ESIF), presents a strategy for accelerating business growth and job creation in the City Region. Over the next 10 years the City Region’s ambition is to deliver 70,000 net additional jobs, increase GVA by 10% or £3bn and create 6,000 new businesses. This will be done through the six themes which are:</p> <ul style="list-style-type: none"> - Ensure new businesses receive the support they need to flourish, - Facilitate and proactively support growth amongst existing firms, - Attract investment from other parts of the UK and overseas, and improve our brand, - Increase sales of SCR's goods and services to other parts of the UK and abroad, - Develop the City Region’s skills base, labour mobility and education performance, - Secure investment in infrastructure where it will do most to support growth. 	<p>The SA should support the policy and should reflect on it when developing the SA Framework criteria.</p>
<p>York, North Yorkshire and East Riding Local Enterprise Partnership (LEP) (2016) 2016-2021 Strategic Economic Plan (SEP).</p>	<p>This SEP forms the basis for ensuring York, North Yorkshire and East Riding Local economy is growing strongly, creating jobs and delivering major economic opportunities for the future. It details how this will be achieved but centrally it comes down to 5 priorities:</p> <ul style="list-style-type: none"> -Profitable and Successful Businesses, -A Global Leader in Agri-Food and Bio renewables, -Inspired People, -Successful and Distinctive Places and -A Well Connected Economy 	<p>The SA should support the policy and should reflect on it when developing the SA Framework criteria.</p>
<p>Hull Integrated Catchment Strategy (2015).</p>	<p>The study provides an integrated framework for the management of flood risk in the natural River Hull Valley, for all five flood Risk Management Authorities (RMAs) that operate in this area:</p> <p>Beverley and North Holderness Internal Drainage Board, East Riding of Yorkshire Council, Environment Agency, Hull City Council, Yorkshire Water Services Ltd).</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>

	<p>After series of optioneering exercises, eight solutions have been proposed which range from Tidal Barrier at River Hull mouth, dredging and reprofiling of river Hull channel, raising embankments, increasing capacity of pumping stations and maintenance of existing assets, to be delivered in phases over a period of 20 years.</p>	
<p>Humber River Basin District River Basin Management Plan (18 February 2016).</p>	<p>Originally prepared under the Water Framework Directive, the purpose of this river basin management plan is to provide a framework for protecting and enhancing the benefits provided by the water environment. The plan sets out various actions to address the issue of water pollution with an aim to achieve WFD objectives. This plan contains 4 sets of information that groups who manage land and water should pay particular attention to:</p> <ol style="list-style-type: none"> 1. Baseline classification of water bodies, 2. Statutory objectives for protected areas, 3. Statutory objectives for water bodies, 4. Summary programme of measures to achieve statutory objectives. 	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the protection and preservation of water resources.</p>
<p>Lincolnshire Wolds Area of Outstanding Natural Beauty Management Plan 2013-2018.</p>	<p>The Management Plan includes a number of overarching objectives for the AONB which are supported by more detailed policies. The objectives, among other things, relate to protection and enhancement of the AONB character and having regard to wildlife and biodiversity, water environment, woodland, grass verges, historic environment, transport linkages and geological features.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of landscape character.</p>
<p>Humber Management Scheme 2016.</p>	<p>Developed and managed by the Humber Nature Partnership, the Humber Management Scheme (HMS) provides a coordinated and joined up approach for the management of the Humber Estuary EMS. With support from both statutory and non-statutory organisations, actions are developed and delivered to bring the estuary into what is known as 'favourable condition'.</p>	<p>The SA should reflect on the cross-cutting themes when developing the SA Framework and include relevant information in the baseline chapters of the Scoping report.</p>
<p>East Inshore and East Offshore Plan.</p>	<p>These two plans, East Inshore and East Offshore, are the first two marine plans to be produced for English seas. The East Inshore Marine Plan area includes the coastline stretching from Flamborough Head to Felixstowe, extending from mean high water out to 12 nautical miles, including inland areas such as the Broads and other waters subject to tidal influence, and covers an area of 6,000 square kilometres.</p>	<p>The SA should consider the policies and the plan objectives when developing the SA Framework, particularly for economic and environmental topics.</p>

	<p>The plan includes policies whose purpose is to provide direction or guidance on how decisions should be made to ensure the plan objectives are met. Plan policies are central to the role of marine plans and, in many cases, apply to new, rather than existing, developments, uses and management measures.</p>	
<p>Greater Lincolnshire Water Management Plan 2017.</p>	<p>Developed by the Greater Lincolnshire LEP this plan considers the effective management of flood risk and water resources to be a critical factor in enabling economic growth across the area and it aims to promote this integration. Salient action points the plan discusses are: to increase water provision (capacity), water use efficiency (industries and households), flood risk management and linking flood risk management and water provision.</p>	<p>The SA should consider the integrated approach discussed in the plan and reflect on the action points when developing the SA Framework.</p>

2018 Version

Local Plans and Policies Review

Plan, Policy, Programme title	Key message/ brief review	Implication for the SA/SEA
Hull City Council		
Hull Local Plan – Adopted 2017.	This plan provides the framework for managing development and addressing key planning issues in Hull.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan – Adopted 2017.Site Allocations.	This document allocates sites for development (such as housing, retail, or industry) or protection (such as open space or land for transport schemes).	The SA should consider implication of the policies on the Strategy and on the SA.
Hull Local Plan Policy 1: Economic Growth.	This policy makes specific reference to the Port of Hull supporting major development needs associated with Green Port Hull and designates employment areas.	
Hull Local Plan Policy 2: Employment Allocations.	This policy allocates land for employment uses.	
Hull Local Plan Policy 3: Housing requirement and site allocations.	This policy will require provision for the development of 12,160 new homes in Hull during the period 2016 to 2032.	
Hull Local Plan Policy 4: Housing regeneration and brownfield land.	This policy allocates areas to be regenerated and encourages housing on brownfield sites and states that brownfield sites allocated for housing with no constraints will be deemed to have 'permission in principle'.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 8: Traveller provision.	This policy will require that travellers are sited in locations that have the lowest flood risk or in Flood Zone 3a if mitigation measures are possible.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 9: City Centre and Policy 10: City Centre Mixed Use Sites.	<p>This policy identifies that the City Centre will accommodate a full range of main town centre uses and necessary infrastructure to promote</p> <p>key objectives for economic growth and to make Hull a world class visitor destination.</p> <p>Policy 11 allocates sites for mixed-use development.</p>	The SA should contribute to supporting the aims of this plan.

Hull Local Plan Policy 15: Local Distinctiveness.	The policy promotes the re-establishment of connections with the River Hull and Humber Estuary.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 16: Heritage Considerations.	This policy will require that proposals and initiatives preserve or enhance the significance and setting of the city's heritage assets.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to preserving the historic/cultural environment.
Hull Local Plan Policy 28: Classified Road Network.	This policy will require that new vehicle crossovers on to classified roads will only be allowed where they are acceptable in terms of the amount of surface water run-off likely to be created.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 35: Water transport.	This policy will require water based transport proposals to demonstrate that they meet environmental safeguards and do not cause a detrimental impact upon flooding.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 36: Walking and Cycling.	This policy will require that cycle tracks and footpath routes are safeguarded to protect them from other forms of development that would otherwise prevent their delivery.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 37: Flood Defences.	This policy will require that development proposals do not reduce the effectiveness of flood defences and that proposals to improve the standard of flood defences be supported.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 38: Surface Water Storage and Drainage.	This policy will require that strategic schemes for the storage of water will be supported where they are well designed and can be shown to improve the flood resilience of the city.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 39: Sustainable Drainage.	This policy will require that planning applications provide sustainable drainage and that site layouts should have regard to flood risk, with special provision for a failsafe mechanism.	The SA should contribute to supporting the aims of this plan.
Hull Local Plan Policy 42: Open Space.	This policy will seek to create new and maintain existing open space of a defined standard and will also seek to protect existing open space from being built upon, unless: the space is surplus to requirements, the loss would be replaced, or the development provides an alternative provision that clearly outweighs the loss.	The SA should contribute to supporting the aims of this plan and the SA Framework include a criterion relating to open spaces.
Hull Local Plan Policy 43: Green Infrastructure.	This policy will protect a designated area called the Green Network, wherein or in proximity to it, any development should enhance the functionality and connectivity of its corridor.	The SA should contribute to supporting the aims of this plan and the SA Framework should include a criterion relating to support of green infrastructure.

Hull Local Plan Policy 44: Biodiversity and wildlife.	<p>This policy reinforces the legal requirements for work that affects European and national statutory designed wildlife sites. It will also afford robust protection to local wildlife sites from loss or significant harm, including Local Wildlife Sites and Sites of Nature Conservation Interest in the Hull Local Plan 2000. It also requires that proposals seek to achieve a net gain in biodiversity improvements.</p>	<p>The SA should contribute to supporting the aims of this plan and the SA Framework should include a criterion relating to the retention of biodiversity.</p>
Hull Local Plan Policy 52: Infrastructure and Delivery.	<p>This policy will require support for the provision of new infrastructure including schemes that mitigate and adapt to climate change and any cross-boundary schemes.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
Hull and Humber Ports City Region Development Programme II, September 2006 (statistical update in 2010).	<p>The objectives of the second Hull and Humber Ports City Region and Development Programme rests in particular on the first two of its "guiding principles":</p> <ul style="list-style-type: none"> • To look at the North of England as a whole in order to identify pan-Northern investments which would add value to that which is being undertaken in each of the individual regions; • To be based on how best to build on the North's strengths, clearly defining what Government must do to realise benefits from these assets. 	<p>The SA should contribute to supporting the aims of this programme.</p>
Hull City Plan 2013- ongoing.	<p>Led by Hull City Council, the City Plan is delivered by a private sector led City Leadership Board. The City Plan has many ambitions and key themes are around promoting Hull as UK hub for new and emerging industries with a focus on renewable energy (Green Port Hull, Siemens wind turbine manufacturing plant); to promote as a destination for travellers (City of Culture 2017) and support local communities.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
Hull Infrastructure Study 2011.	<p>Three types of infrastructure classifications can be made: Strategic Infrastructure; Place Shaping Infrastructure; and Enabling Infrastructure.</p>	<p>The SA should contribute to supporting the aims of this study.</p>
East Riding of Yorkshire Council		
East Riding of Yorkshire Council Local Plan Strategy Document April 2016.	<p>This plan provides the framework for managing development and addressing key planning issues in East Riding of Yorkshire.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>

East Riding of Yorkshire Council Local Plan Allocations Document 2016.	This document allocates sites for development (such as housing, retail, or industry) or protection (such as open space or land for transport schemes).	The SA should contribute to supporting the aims of this plan.
Policy S3: Focusing Development.	This policy sets out how new development will be supported where it is focused within the defined Settlement Network or within key Employment Sites along the East-West Multi-Modal Transport Corridor. Major Haltemprice Settlements, Principal Towns and Towns will be the main focus of growth. New development will be encouraged where it involves re-use of suitable previously developed land.	The SA should contribute to supporting the aims of this policy.
Policy S4: Supporting Development in Villages and the Countryside.	This policy sets out how development of settlements outside of those listed in Policy S3 will be supported to help maintain the vibrancy of Villages and the Countryside.	The SA should contribute to supporting the aims of this policy.
Policy S5: Delivering Housing Development.	This policy states that provision will be made for at least 23,800 (net) additional dwellings in the East Riding between 2012 and 2029, and sets out the distribution of the new homes across the region.	The SA should contribute to supporting the aims of this policy.
Policy EC1: Supporting the Growth and Diversification of the East Riding Economy.	This policy seeks to strengthen and encourage growth of the East Riding economy by supporting employment development where the proposal is of a scale suitable to the location. It sets out where proposals will be encouraged, including where proposals involving the loss of land or premises from employment use will be supported. The policy also encourages farm diversification schemes under given criteria.	The SA should contribute to supporting the aims of this policy.
Policy EC2: Developing and Diversifying the Visitor Economy.	This policy encourages tourism developments including attractions, facilities and accommodation, particularly those helping to meet existing deficiencies, to help strengthen and broaden the tourism offer across the East Riding. The policy states that proposals for tourism development in the countryside will be supported where their scale and cumulative impact is appropriate for the location (among other criteria). Tourism and recreation proposals that require a seafront location will also be supported.	The SA should contribute to supporting the aims of this policy.
Policy A1: Beverley and Central Sub-area.	This policy sets out the criteria that plans, strategies and development decisions in the Beverley & Central sub area should meet, including multiple criteria for housing,	The SA should contribute to supporting the aims of this plan.

	economy, environment and community and infrastructure.	
Policy A4: Goole & Humberhead Levels Sub Area.	This policy sets out the criteria that plans, strategies and development decisions in the Goole and Humberhead Levels sub area should meet, including multiple criteria for housing, economy, environment and community and infrastructure.	The SA should contribute to supporting the aims of this plan.
Policy A5: Holderness & Coastal Sub Area.	This policy sets out the criteria that plans, strategies and development decisions in the Holderness and Southern Coastal sub area should meet, including multiple criteria for housing, economy, environment and community and infrastructure	The SA should contribute to supporting the aims of this plan.
East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, S4: Supporting development in Villages and the Countryside.	This Policy requires that development be supported if it does not involve a significant loss of best and most versatile agricultural land.	The SA and strategy should consider loss of best and most versatile agricultural land throughout the appraisal process.
East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, S6: Delivering employment land.	<p>The policy sets out how the future needs of the economy will be met through the allocation of employment land across the East Riding. It states that:</p> <p>"205 hectares of land will also be allocated at Hedon Haven through the Allocations Document or a Neighbourhood Development Plan to cater for the expansion of the Port of Hull. The provision of at least 39 hectares of enhanced habitat will be required to mitigate the impact of development on the adjacent Humber Estuary Special Protection Area and Ramsar Site. In addition, proposals must be considered in the context of the statutory protection which is afforded to the Humber Estuary Special Area of Conservation. The development will also be required to preserve or enhance those elements which contribute to the significance of the designated heritage assets in the area."</p>	The SA should support the policy and should reflect on it when developing the SA Framework criteria.
East Riding of Yorkshire Council, East Riding Local Plan Strategy Document S8: Connecting	This policy requires safeguarding of certain transport infrastructure, such as wharfs.	The SA should contribute to supporting the aims of this policy.

<p>people and places.</p>		
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document H3: Providing for the needs of Gypsies and Travellers.</p>	<p>This policy recognises and requires that accommodation for members of the traveling community should be placed in areas that are at the least risk of flooding.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document EC6: Protecting mineral resources.</p>	<p>This policy requires that mineral resources are safeguarded and not adversely affected.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the monitoring and mitigation of change upon safeguarded mineral sites.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, ENV1: Integrating high quality design and Policy ENV2: Promoting a high-quality landscape.</p>	<p>These policies require that developments safeguard landscape character and appearance.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, ENV3: Valuing our heritage.</p>	<p>This policy requires that certain heritage assets are conserved and that development which causes harm to heritage assets is justified.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, ENV4: Conserving and enhancing biodiversity and geodiversity.</p>	<p>This policy requires that proposals do not adversely affect or cause significant harm to local and national biodiversity and geodiversity sites.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of geo/biodiversity.</p>
<p>East Riding of Yorkshire</p>	<p>This policy requires that development proposals within or in close proximity to a</p>	<p>The SA should contribute to supporting the aims of this policy</p>

<p>Council, East Riding Local Plan Strategy Document, ENV5: Strengthening green infrastructure.</p>	<p>green infrastructure corridor should enhance the functionality and connectivity of the corridor.</p>	<p>and the SA Framework should include a criterion relating to support of green infrastructure.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, ENV6: Managing environmental hazards.</p>	<p>This policy requires that flood risk, and other environmental hazards such as coastal change, do not result in unacceptable consequences to users, the wider community and the environment. It supports proposals for sustainable flood risk management and coastal change management (including coastal defence improvement and managed realignment).</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>East Riding of Yorkshire Council, East Riding Local Plan Strategy Document, C3: Providing public open space for leisure and recreation.</p>	<p>This policy requires that development proposals be supported only where there is a surplus of provision, where the replacement land is superior in terms of quality, quantity and accessibility, where this meets a local deficiency in needs (e.g. sports grounds) or where this does not result in an unacceptable detrimental impact upon the amenity or character of the area.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to open spaces.</p>
<p>East Riding of Yorkshire Rural Strategy (2016-2020).</p>	<p>This strategy which has now been adopted is cross cutting and is jointly developed and delivered with the East Riding of Yorkshire Rural Partnership. The Rural Strategy and Rural partnership present an avenue for this high-level Flood Risk Management Strategy to engage with a wide range of rural interests at a catchment/local level.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to flood risk and rural communities and rural economy.</p>
<p>East Riding of Yorkshire Council and Hull City Council – Joint Plans</p>		
<p>Health Inequalities and Health Promotion - A Snapshot, East Riding & Hull, September 2000.</p>	<p>The Report undertook intensive research into the current health status of the most disadvantaged communities, to inform the national and local debate on tackling health inequalities and identify how best to address some deep-rooted issues.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>Draft Joint Minerals Development Plan Document- East Riding of Yorkshire and</p>	<p>This plan will replace the Minerals Plan adopted in 2004 and is currently planned for Adoption late 2017.</p> <p>The Joint plan will provide the key policy framework for minerals development management; identify site allocations and sets</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the monitoring and mitigation of change upon mineral sites.</p>

<p>Kingston upon Hull-Summer 2016.</p>	<p>criteria based policies against which future proposals for minerals development will be determined.</p> <p>Review and subsequent amendments currently scheduled for Spring 2018.</p>	
<p>BASSETLAW DISTRICT COUNCIL</p>		
<p>Bassetlaw Core Strategy and Development Management Policies DPD (Adopted December 2011).</p>	<p>This plan provides the framework for managing development and addressing key planning issues in Bassetlaw.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Policy DM4: Design and Character.</p>	<p>This policy ensures that all major development proposals comply with certain design principles, for example, complement and enhance the character of the built, historic and natural environment. It also states that 'New development will need to demonstrate that careful consideration has been given to minimising CO2 emissions and measures that will allow all new buildings in Bassetlaw to adapt to climate change.'</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy DM6: Gypsies, Travellers and Travelling Showpeople.</p>	<p>This policy advises that sites will need to demonstrate that they are not located in an area at high risk of flooding.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>Policy DM8: The Historic Environment.</p>	<p>This policy supports development proposals or regeneration schemes (particularly in central Worksop, Retford and Tuxford) that protect and enhance the historic environment and secure its long-term future, especially the District's Heritage at Risk.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to preserving the historic environment.</p>
<p>Policy DM9: Green Infrastructure; Biodiversity & Geodiversity; Landscape; Open Space & Sports Facilities.</p>	<p>Development proposals will be expected to support the Council's strategic approach to the delivery, protection and enhancement of multi-functional Green Infrastructure, to be achieved through the establishment of a network of green corridors and assets at local, sub-regional and regional levels.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure, geo/biodiversity, open spaces and landscape character.</p>
<p>Policy DM12: Flood Risk, Sewerage & Drainage.</p>	<p>Proposals for the development of new units in Flood Zones 2, 3a and 3b that are not defined by national planning guidance as being suitable for these zones will not be supported while development sites remain available in sequentially superior locations across the District. Proposals must demonstrate to the Council's satisfaction that the proposed</p>	<p>The SA should contribute to supporting the aims of this policy.</p>

	<p>development will not exacerbate existing land drainage and sewerage problems in these areas. All new development (other than minor extensions) will be required to incorporate Sustainable Drainage Systems (SuDS) and provide details of adoption, ongoing maintenance and management. Preference will be given to systems that contribute to the conservation and enhancement of biodiversity and green infrastructure in the District.</p>	
<p>Bassetlaw District Council (2009) Landscape Character Assessment.</p>	<p>This document defines the landscape character of the administrative area of Bassetlaw District Council [BDC]. It will be used by BDC to aid development control decisions on planning applications. The document provides an objective methodology for assessing the varied landscape within Bassetlaw and contains information about the character, condition and sensitivity of the landscape to provide a greater understanding of what makes the landscape within Bassetlaw locally distinctive. The study has recognised this by the identification of Policy Zones across the 5 Landscape Character Types represented in Bassetlaw.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.</p>
<p>Bassetlaw District Council (2013) Sustainability Strategy.</p>	<p>The Bassetlaw District Council Sustainability Strategy provides a framework for good practice that is applicable to every service, and every decision made must consider the sustainability impact, be it carbon emissions, household or trade waste, or the natural environment.</p> <p>The strategy builds upon the work already identified in the Carbon Management Plan and the Climate Change Strategy and complements and informs other Council strategies. The strategy addresses the need to work with the Councils partners to reduce its impact on the environment and to progress delivery through the Councils partnerships.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to preservation of the natural environment.</p>
<p>Bassetlaw District Council (2013) Climate Change Strategy 2013.</p>	<p>This strategy highlights the work planned, showing that Bassetlaw is addressing its local and global responsibilities to tackle climate change. The strategy intends to show that climate change is correlated to a number of different issues, transport, waste and energy generation and use are but a few and massive change is needed if Bassetlaw is to reduce its contribution to global climate</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to resilience to climate change.</p>

	change.	
Bassetlaw District Council (2014) Regeneration and Growth Strategy 2014 – 2028.	<p>This strategy sets out realistic ambitions that builds on the Council's past successes in the economic development arena, along with current and emerging strategies. In undertaking this task, it is acknowledged that the district is not an isolated economy, and that other economic factors whether sub-national, national and international will impact on the productivity and competitiveness of the district. Building a competitive vision for North Nottinghamshire looks to create a sustainable and prosperous future that will:</p> <ul style="list-style-type: none"> -Strengthen the area's economic competitiveness, which will underpin development of sustainable growth; -Develop an appropriately educated and skilled workforce; -Support the innovation of enterprise that will help diversify the business base; and -Recognise the importance of strategic and sustainable areas of economic growth and investment. 	The SA should support the strategy and should reflect on it when developing the SA Framework criteria.
Bassetlaw District Council (2014) Rural Plan Action Plan 2014 – 2017.	<p>The priorities of the rural plan are:</p> <ul style="list-style-type: none"> -Supporting and strengthening local communities; -Improving employment opportunities; -Building homes to support a diverse rural population; and -Preventing rural deprivation. 	The SA should contribute to supporting the aims of this plan and the SA Framework should include a criterion relating to rural communities.
North Lincolnshire Council		
North Lincolnshire Core Strategy (2011).	<p>The Core Strategy's spatial vision provides the direction needed to deliver the spatial aspects of the Sustainable Community Strategy and the four shared ambitions up to 2026. The vision also takes into account the spatial aspects of other plans, strategies and programmes at regional, sub-regional and local level that deal with urban renaissance, housing, regeneration, economic development, the protection and enhancement of a world class environment including climate change, transport, investment, health, culture and safety, amongst other matters.</p>	The SA should support the strategy and should reflect on it when developing the SA Framework criteria.
CS1: Spatial Strategy for North Lincolnshire.	<p>This policy outlines the spatial vision and the future development requirements for North Lincolnshire. It advises that all future growth regardless of location should contribute to sustainable development.</p>	The SA should contribute to supporting the aims of this strategy.
CS2: Delivering more Sustainable Development.	<p>Policy advises that a 'sequential approach' will be applied to ensure that development is, where possible, directed to those areas that</p>	The SA should contribute to supporting the aims of this policy.

	<p>have the lowest probability of flooding, taking account the vulnerability of the type of development proposed, its contribution to creating sustainable communities and achieving the sustainable development objectives of the plan. Where development does take place in the flood plain, mitigation measures should be applied to ensure that the development is safe.</p>	
<p>CS4: Creating a Renaissance in North Lincolnshire.</p>	<p>This policy lists number of major transformational projects. It states that 'All development will meet the highest possible flood risk management standards, including the use of sustainable drainage systems to be incorporated, where practicable and viable.'</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>CS6: Historic Environment.</p> <p>Saved policy LC 14: Isle of Axholme.</p>	<p>This policy ensures the safeguarding of historic assets. All new development must respect and enhance the local character and distinctiveness of the area in which it would be situated, particularly in areas with high heritage value.</p> <p>Isle of Axholme has been designated as an Area of Special Historic Landscape Interest and policy applies for development proposals in this area.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of historical/cultural assets.</p>
<p>CS8: Spatial Distribution of Housing Sites.</p>	<p>This policy's principal focus is providing housing on previously developed land and buildings within the development limits of Scunthorpe followed by a greenfield urban extension to the west of the town.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>CS10: Gypsies, Travellers and Travelling Showpeople Sites.</p>	<p>This policy lists considerations that will be taken into account when designating sites for members in the travelling community. For example, it states that 'sites should not have an adverse impact on environmental assets such as landscape, historic environment, biodiversity, open space and green infrastructure, and avoid areas shown as at risk of flooding in the Strategic Flood Risk Assessment (SFRA).'</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>CS11: Provision and Distribution of Employment Land.</p>	<p>This policy allocates land for employment.</p>	<p>The SA should support the policy and should reflect on it when developing the SA Framework criteria.</p>
<p>CS12: South Humber Bank Strategic Employment Site – A Broad Location.</p>	<p>This policy allocates land for the South Humber Bank Strategic Employment Site (SHBSES). It states that the SHBSES should safeguard and improve the flood defences of the SHBSES from tidal flooding through partnership</p>	<p>The SA should support the policy and should reflect on it when developing the SA Framework criteria.</p>

	working with the Environment Agency and its Humber Flood Risk Management Strategy (March 2008), North Lincolnshire and North-East Lincolnshire Councils, Yorkshire Forward, landowners and industry. This will include managing the predicted effects of climate change in harmony with the development of port related activities by managing and minimising the risk of flooding.	
CS15: Culture and Tourism.	This policy supports a balanced and socially inclusive cultural and evening economy within North Lincolnshire, such as museums, theatres, restaurants, café bars and leisure uses within Scunthorpe town centre and market towns.	The SA should contribute to supporting the aims of this policy.
CS16: North Lincolnshire's Landscape, Greenspace and Waterscape.	This policy requires the council to protect, enhance and support a diverse and multi-functional network of landscape, greenspace and waterscape.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
CS17: Biodiversity.	This policy ensures developments take into account biodiversity.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of biodiversity.
CS18: Sustainable Resource Use and Climate Change.	The council will actively promote development that utilises natural resources as efficiently and sustainably as possible. The policy states that the council will 'Support the necessary improvement of flood defences and surface water infrastructure required against the actions of climate change, and preventing development in high flood risk areas wherever practicable and possible.'	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to resilience to climate change.
CS19: Flood Risk.	The policy states that the council will support development proposals that avoid areas of current or future flood risk, and which do not increase the risk of flooding elsewhere.	The SA should contribute to supporting the aims of this policy.
CS20: Sustainable Waste Management.	This policy lists areas for new and enhanced facilities for the treatment and management of waste.	The SA should contribute to supporting the aims of this policy and the SA Framework have regard to adaptation of any waste management to ensure sustainability.
CS22: Community Facilities and Services.	This policy encourages the provision of new community facilities, or the improvement of existing community facilities, which meet the needs of local residents. It ensures the loss of	The SA should contribute to supporting the aims of this policy.

	community facilities or land allocated for such purposes will be resisted, unless there is no longer a need for the land or building in any form of community use, or there is an acceptable alternative means of meeting such need.	
CS26: Strategic Transport Infrastructure Proposals.	This policy lists strategic transport infrastructure proposals. It states that 'In delivering the key strategic infrastructure schemes and programmes it is vital to ensure that necessary nature conservation, landscape and flood risk issues are addressed and mitigated against, particularly at the South Humber Bank area and potentially at Sandtoft Airfield.'	The SA should contribute to supporting the aims of this policy.
Lincolnshire Lakes Area Action Plan (2016).	<p>The Lincolnshire Lakes Area Action Plan (AAP) sets out the planning policy framework to deliver the Lincolnshire Lakes development in a consistent and properly planned way.</p> <p>This project will create a number of high quality, sustainable village communities on land between the western edge of Scunthorpe and the River Trent, set within an attractive waterside environment with major opportunities for leisure, sport and recreation.</p>	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character including water resources.
North Lincolnshire Landscape Character Assessment and Guidelines (Spg5).	This document includes guidelines and assesses the special character, distinctiveness and qualities of the landscape of North Lincolnshire.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
North Lincolnshire Contaminated Land Inspection Strategy 2001.	The strategy sets out a detailed five-year inspection programme. This aims to identify areas of potentially contaminated land where historical industrial activity may have left pollution in, on or under the land.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of land and soil quality.
Local Transport Plan 2011 to 2026.	The Transport Strategy sets out the strategic approach to transport in North Lincolnshire over the next 15 years.	The SA should contribute to supporting the aims of this plan.
Lincolnshire Historic Landscape Characterisation (HLC) Project 2011.	The document aim is to categorise and characterise the landscape of the county.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.

Lincolnshire Biodiversity Action Plan 3rd Edition October 2011 (Revised October 2015) (LBP)	<p>The LBP details the actions and targets required to achieve the following aims;</p> <ul style="list-style-type: none"> • Conserve and enhance Lincolnshire's biodiversity; • Ensure that biodiversity is recognised as an essential element of life in the historic county of Lincolnshire: • Ensure biodiversity conservation is sustainable; • Provide and gather biodiversity information to monitor progress and enable individuals and organisations to make decisions based on sound evidence. <p>The LBP has been delivered through a broad partnership since its first publication in 2000.</p>	<p>The SA should contribute to supporting the aims of this LBP, the LBP provides a platform for consulting with a number of interested parties through an established partnership.</p>
North East Lincolnshire Council		
North East Lincolnshire Pre-submission Draft Local Plan (2016).	<p>This plan provides the framework for managing development and addressing key planning issues in North East Lincolnshire.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
North East Lincolnshire: Draft Policy 2 Development boundaries.	<p>This policy sets defined development boundaries where development will be permitted subject to its suitability and sustainability.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
North East Lincolnshire: Draft Policy 3 Infrastructure.	<p>This policy advises that the Council will support developments to create, expand or alter service facilities, including schools, health facilities and key infrastructure to meet the needs of existing and new communities.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
North East Lincolnshire: Draft Policy 4 Employment allocations.	<p>This policy allocates land for employment.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
North East Lincolnshire: Draft Policy 5 Existing employment sites.	<p>This policy protects existing employment sites from development.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
North East Lincolnshire: Draft Policy 6 Habitat Mitigation South Humber Bank.	<p>This policy supports a strategic approach to provision against which all developers within the Mitigation Zone will be required to make appropriate contributions in lieu of meeting site specific requirements.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
North East Lincolnshire: Draft Policy 9 Rural economy.	<p>This policy advises that development may be allowed in the countryside where it strengthens rural communities by meeting local social and economic needs.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to rural economy.</p>

North East Lincolnshire: Draft Policy 10 Tourism and visitor attractions.	This policy advises that development will be supported where it protects tourist and visitor attractions.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 11 Housing allocations.	This policy allocates land for housing.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 12 Development of strategic housing sites.	This policy seeks to ensure that development of all strategic sites is planned and implemented in a coordinated way linked to the timely delivery of key infrastructure.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 19 Provision for gypsies and travellers.	This policy lists points for assessing sites for members of the traveling community. One of the points is that there are no significant constraints to development in terms of flood risk, poor drainage or, land contamination.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 32 Flood risk.	This policy ensures that development proposals minimise flood risk impacts and mitigate against the likely effects of climate change.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 33 Water management.	This policy ensures that development must not prejudice the delivery of the actions and targets of the Humber River Basin Management Plan.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the protection and preservation of water resources.
North East Lincolnshire: Draft Policy 36 Safeguarding transport infrastructure.	This policy supports measures which deliver, maintain and improve, key transport infrastructure.	The SA should contribute to supporting the aims of this policy.
North East Lincolnshire: Draft Policy 38 Conserving and enhancing the historic environment.	This policy requires development proposals to be informed by, and respond accordingly, to: the need to safeguard and where possible enhance, the character, setting and integrity of identified heritage assets, including Listed Buildings, Scheduled Ancient Monuments and Conservation Areas, and the assessment of the value of non-designated heritage assets.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of historical/cultural assets.
North East Lincolnshire: Draft Policy 39 Developing a green	This policy requires proposals to maintain and improve the network of green infrastructure. It also requires identification of opportunities to improve the overall connectivity of green spaces and accessibility for users.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure.

infrastructure network.		
North East Lincolnshire: Draft Policy 40 Biodiversity and Geodiversity.	This policy ensures that development proposals have regard to biodiversity and geodiversity.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of geo/biodiversity.
North East Lincolnshire: Draft Policy 41 Landscape.	This policy requires that landscape character should be given due consideration in the nature, location, design and implementation of development proposals.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
North East Lincolnshire: Draft Policy 47 Safeguarding waste facilities and related infrastructure.	This policy shows waste facilities to be safeguarded.	The SA should contribute to supporting the aims of this policy and the SA Framework have regard to adaptation of any waste management to ensure sustainability.
East Lindsey District Council		
East Lindsey Local Plan 1995: Environment.	<p>Protection and enhancement of the countryside and environment policies aim to:</p> <ul style="list-style-type: none"> - Make sure that no development causes lasting damage to the environment; - Protect and conserve areas of natural history, landscape or archaeological importance; - Encourage uses in the District which are self-sustaining and do not unnecessarily deplete energy or natural resources; - Control development in areas of significant flood risk, poor drainage or other hazards; - Encourage environmental improvements in towns and villages. 	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
East Lindsey Local Plan 1995: Development in the Countryside.	<p>Development in the Countryside</p> <ul style="list-style-type: none"> -ensure that no development causes lasting damage to the countryside; -try to obtain environmental benefits from new development in the countryside; -protect the countryside for its own sake; -protect the best quality agricultural land; -locate development in a way which will reduce the need to travel. 	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
East Lindsey Local Plan 1995: Employment.	<p>Employment</p> <ul style="list-style-type: none"> -encourage businesses to locate or expand within the District; 	The SA should support the plan and should reflect on it when developing the SA Framework criteria.

	-achieve a high level of design of building and quality of landscaping which improves rather than spoils the character of the area.	
East Lindsey Strategic Flood Risk Assessment (2017).	The SFRA identifies flood risk categories and makes recommendations for policy implications for each category. The document is used as a tool by a planning authority to assess all types of flood risk for spatial planning, producing development briefs, setting constraints, informing sustainability appraisals, identifying locations of Emergency Planning measures and requirements for flood risk assessment, and making planning decisions.	The SA should contribute to supporting the aims of this strategy.
East Lindsey Emerging Local Plan (Submission 2016).	The Local Plan aims to: -Lay down an overall spatial vision for the District up to 2031. -Include objectives to help achieve the vision. -Present a strategy and strategic policies to meet all the objectives. -Broadly direct growth and development across the District. -Set challenging but realistic targets to assist in making sure that planned change actually happens.	The SA should contribute to supporting the aims of this plan.
Strategic Policy 2 (SP2) - Sustainable Development.	This policy advises that when considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development. Development should improve the economic, social and environmental conditions in the area.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating sustainability.
Strategic Policy 3 (SP3) – Housing Growth and the Location of Inland Growth.	This policy commits approximately 1308 homes which covers the area of the Coastal Flood Hazard maps. Housing on the coast will be constrained to these existing commitments with the exceptions set out in Strategic Policy SP18 (SP18) Coastal East Lindsey	The SA should contribute to supporting the aims of this policy.
Strategic Policy 10 (SP10) – Design.	This policy advises that the council will support well-designed sustainable development, which maintains and enhances the character of the District’s towns, villages and countryside.	The SA should contribute to supporting the aims of this policy.
Strategic Policy 11 (SP11) – Historic Environment.	This policy supports development that Protect and enhance heritage assets and their setting.	The SA should contribute to supporting the aims of this policy.
Strategic Policy 12 (SP12) – Gypsies, Travellers and Showpeople.	This policy states that sites should not be located in an area of flood risk.	The SA should contribute to supporting the aims of this policy.

Strategic Policy 13 (SP13) – Inland Employment.	This policy supports proposals which bring forward employment land in or adjoining the large villages across the District.	The SA should support the policy and should reflect on it when developing the SA Framework criteria.
Strategic Policy 15 (SP15) – Widening the Inland Tourism and Leisure Economy.	This policy advises that new build development for serviced holiday accommodation (hotels and bed and breakfast premises) are not located in an area of flood risk.	The SA should support the policy and should reflect on it when developing the SA Framework criteria.
Strategic Policy 17 (SP17) – Coastal East Lindsey.	This policy states that ‘the Council will support improvements to the existing flood defences, the creation of new flood defences and infrastructure associated with emergency planning.’	The SA should contribute to supporting the aims of this policy.
Strategic Policy 18 (SP18) - Coastal Housing.	This policy advises that The Council will support sites which already have planning permission for housing if they come forward with improved layouts, designs or flood mitigation providing the numbers of homes do not increase. It states that flood mitigation should be provided as per the advice of the Environment Agency.	The SA should contribute to supporting the aims of this policy.
Strategic Policy 19 (SP19) - Holiday Accommodation.	This policy ensures that conversions of hotels into flats or houses in multiple occupation will need to demonstrate that the flood risk is appropriately low and that they are in a flood zone that allows this class of development.	The SA should contribute to supporting the aims of this policy.
Strategic Policy 23 (SP23) – Landscape.	This policy aims to protect and enhance the District’s Landscapes. It supports development where it allows for greater public access to the countryside and naturalistic coast, supports visitors to the District, helps provide additional employment opportunities.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
Strategic Policy 24 (SP24) - Biodiversity and Geodiversity.	This policy aims to protect and enhance the biodiversity and geodiversity value of land and buildings, and minimise fragmentation and maximise opportunities for connection between natural habitats.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of geo/biodiversity.
Strategic Policy 25 (SP25) – Green Infrastructure.	This policy aims to safeguard and deliver a network of accessible green infrastructure.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure.
Strategic Policy 28 (SP28) – Infrastructure and S106 Obligations.	This policy supports Infrastructure schemes provided they are essential in the national interest; contribute to sustainable development, and respect the distinctive character of the district.	The SA should contribute to supporting the aims of this policy.

Doncaster Metropolitan Borough Council		
<p>Doncaster Borough Strategy Refresh.</p>	<p>This document sets out the long-term strategy for Doncaster and how the public, private and voluntary sectors will work together to improve the quality of life of Doncaster's communities. It is the main overarching strategy under which all other council based plans and policies sit.</p> <p>Long-term vision:</p> <p><i>"Doncaster aims to be one of the most successful boroughs in England by being a gateway to opportunity locally, nationally and worldwide. A strong economy will support progressive, healthy, safe and vibrant communities. All residents will feel valued and should be able to achieve their full potential in employment, education, care and life chances. Pride will have increased further".</i></p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Doncaster's Economic Growth Plan (2013-18).</p>	<p>This strategy sets out the priorities and opportunities that Doncaster will pursue to deliver economic growth and jobs and reduce the productivity gap with the rest of the Yorkshire and Humber region up to 2018. Its long term vision is that 'Doncaster is a successful borough, built on a strong local economy that supports progressive, healthy, safe and vibrant communities'.</p>	<p>The SA should support the plan and should reflect on it when developing the SA Framework criteria.</p>
<p>Doncaster Environment Strategy (Doncaster MBC, 2013).</p>	<p>This document sets out a number of environmental aims including:</p> <p>Effective flood mitigation:</p> <ul style="list-style-type: none"> - Promote flood mitigation and further develop local residents' knowledge of flood risks in order to increase personal flood resilience (e.g. review multi-agency flood plans and create new recording/monitoring systems). - Ensuring a quality environment. 	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Doncaster Green Infrastructure Strategy (Doncaster MBC, 2014).</p>	<p>This strategy sets out the overall approach for delivering an integrated network of high quality green spaces, habitats and landscapes across the borough to 2028. One of its objectives is to improve resilience to the impacts of climate change.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure.</p>

<p>Doncaster Health and Wellbeing Strategy (NHS and Doncaster MBC, 2012).</p>	<p>This documents aim is to create healthy communities. It's vision is: <i>'Doncaster people enjoy a good life, feel happy and healthy, and agree Doncaster is a great place to live'.</i></p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Local Flood Risk Management Strategy (Doncaster MBC, 2014).</p>	<p>Document aims to:</p> <ul style="list-style-type: none"> -improve co-operation between partners and encourage joint working to produce solutions to identified risks and problems; -improve understanding of local flood risk; -mitigate local flood risk through measures to alleviate flooding where practicable or funding will allow; -ensure planning and development control will take account of all forms of flood risk, and minimise development which could increase flood risk, as will inappropriate development in flood risk areas; -increase the community awareness of flood risk including promoting self-resilience; - ensure a well-co-ordinated and effectively managed approach to maintenance and management of existing flood risks and drainage assets; and -ensure that all of the objectives above are sustainable, compliant with the Water Framework Directive adapt to climate change and consider the wider environment as a whole. 	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>The Development and Flood Risk SPD (2010).</p>	<p>The document responds to flood risk at three levels:</p> <ol style="list-style-type: none"> 1. Putting in place measures to respond to future flood events (e.g. Emergency Planning). 2. Putting in place specific initiatives to reduce the likelihood and/or impact of future flood events (e.g. capital works to improve flood defences). 3. Developing a strategic framework to address flood risk in the long term. 	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Doncaster Council Core Strategy 2011-2028 (Adopted 2012).</p>	<p>This plan provides the framework for managing development and addressing key planning issues in Doncaster.</p> <p>Vision: 'Doncaster aims to be one of the most successful boroughs in England by being a gateway to opportunity locally, nationally and worldwide. A strong local economy will support progressive,</p>	<p>The SA should contribute to supporting the aims of this plan.</p>

	<p>safe and vibrant communities. All residents will feel valued and should be able to achieve their full potential in employment, education, care and life chances. Pride in Doncaster will have increased further.'</p>	
<p>Policy CS1: Quality of Life.</p>	<p>As a means to securing and improving economic prosperity, enhancing the quality of place, and the quality of life in Doncaster, proposals will be supported which contribute to the Core Strategy objectives. The policy makes particular reference to:</p> <ul style="list-style-type: none"> - Strengthening communities and enhance their well-being by providing a benefit to the area in which they are located, and ensuring healthy, safe places where existing amenities are protected. 	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy CS3: Countryside.</p>	<p>The policy advises that Doncaster's countryside will be protected and enhanced, having regard to a number of principles. It states that suitable development in the countryside includes flood storage areas.</p>	<p>The SA should have regard to protecting and enhancing the countryside character.</p>
<p>Policy CS4: Flooding and Drainage.</p>	<p>This policy states that 'a pro-active approach will be adopted which manages flood risk, to support borough-wide regeneration'.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy CS13: Gypsies and Travellers.</p>	<p>The policy ensures that sites are not located in areas at risk of flooding.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy CS15: Valuing Our Historic Environment.</p>	<p>The policy supports proposals which protect or enhance the heritage significance and setting of locally identified heritage assets such as buildings of local architectural or historic interest, locally important archaeological sites and parks and gardens of local interest.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of historical/cultural assets.</p>
<p>Policy CS16: Valuing our Natural Environment.</p>	<p>Doncaster's natural environment will be protected and enhanced, in accordance with a number of principles set out in this policy.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of natural landscape.</p>
<p>Policy CS17: Providing Green Infrastructure.</p>	<p>This policy supports proposals which reduce, and help people and wildlife adapt to, the impacts of climate change; for example by promoting more naturalised forms of flood storage along the regionally important rivers Don' and</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure.</p>

	Dearne and locally important watercourses; or incorporating tree planting within developments.	
Policy CS18: Air, Water and Agricultural Land.	This policy supports proposals which contribute to the protection and enhancement of Doncaster's water resources.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to preservation of water resources and agricultural land.
North Yorkshire County Council		
Delivering on Climate Change (North Yorkshire County Council's Climate Change Strategy, 2009).	<p>Objectives:</p> <ul style="list-style-type: none"> -County Council plays a leading role in supporting a reduction in the contribution which North Yorkshire makes to climate change. -County Council works with people, communities and other organisations in North Yorkshire to develop an effective response to the current and predicted future changes in climate. -County Council seeks to ensure maximum value for money and efficiency savings from actions taken in response to climate change. 	The SA should contribute to supporting the aims of this policy.
North Yorkshire and York Local Nature Partnership Strategy – (2013).	<p>The LNP Strategy has a series of objectives based around 4 themes:</p> <ul style="list-style-type: none"> - Habitats and Species: we will conserve, restore and create natural assets and create natural sites and strengthen natural corridors for species movement; - Economy: we will develop connections between nature and the local economy; - People and communities: we will increase access to nature to improve public health and increase engagement with local communities on nature projects; - Climate change: we will strengthen climate change mitigation and adaptation through natural solutions. 	The SA should contribute to supporting the aims of this strategy.
Strategy for the North Yorkshire Countryside 2008 – 2013 (Draft) (North Yorkshire County Council, undated).	<p>The strategy has two aims:</p> <ul style="list-style-type: none"> - Seeks to present a simple clear vision behind which all agencies can unite to deliver more co-ordinated action across North Yorkshire; - Explains how the County Council will deliver this vision for the period of the strategy. 	SA Framework should align with this policy and should include objectives to protect and enhance the natural and built environment.
Council Plan 2017 – 2021.	<p>The Plan sets out a 'Joint Vision' to be delivered by partners:</p> <p>'We want North Yorkshire to be a thriving county which adapts to a changing world and remains a special place for everyone to live, work and visit.'</p>	The SA should contribute to supporting the aims of this plan.
Minerals and Waste Joint Plan	One of the documents objectives is to providing opportunities to assist in adapting to	The SA should contribute to supporting the aims of this policy

<p>(Publication Draft November 2016).</p>	<p>the effects of climate change, such as reducing flood risk. The document acknowledges that both minerals and waste development have the potential to impact on water resources and quality and can contribute to, or be at risk from, flooding.</p> <p>Policies M20, M22 and M23 all state that proposals for surface and underground development for the mining of deep coal will be supported where the effects of subsidence upon land stability and important surface structures, infrastructure (including flood defences) and the natural and historic environment, will be monitored and controlled to prevent unacceptable impacts.</p>	<p>and the SA Framework should include a criterion relating to the monitoring and mitigation of change upon mineral sites and consideration of waste plants.</p>
<p>Strategic Economic Plan (SEP) for the York, North Yorkshire and East Riding LEP (2016).</p>	<p>Forms the basis for ensuring York, North Yorkshire and East Riding Local economy is growing strongly, creating jobs and delivering major economic opportunities for the future. It details how this will be achieved but centrally it comes down to 5 priorities- Profitable and Successful Businesses; A Global Leader in Agri-Food and Bio-renewables; Inspired People; Successful and Distinctive Places; and a Well-Connected Economy.</p>	<p>The SA should contribute to supporting the aims of this plan.</p>
<p>Selby District Council</p>		
<p>Selby Level 1 and Level 2 Strategic Flood Risk Assessment (2015).</p>	<p>Strategic Flood Risk Assessments assess the different levels of flood risk in the area and provide maps of this information. It recognises the increasing threat of global warming and explain how climate change could increase flood risk due to more intense rainfall, and sea level rise.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Selby Landscape Character Assessment (SDC, 1999).</p>	<p>LCAs aim to identify landscape character types and areas and develop strategies for their management.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.</p>
<p>Selby District Core Strategy Local Plan (Adopted 2013).</p>	<p>This plan provides the framework for managing development and addressing key planning issues in Selby.</p> <p>The vision:</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the</p>

	<p>By 2027 Selby District will be a distinctive rural District with an outstanding environment, a diverse economy and attractive, vibrant towns and villages. Residents will have a high quality of life and there will be a wide range of housing and job opportunities to help create socially balanced and sustainable communities, which are less dependent on surrounding towns and cities.</p>	<p>preservation of landscape character.</p>
<p>SP1 Presumption in Favour of Sustainable Development.</p>	<p>The policy ensures that when considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to sustainability.</p>
<p>Policy SP2 Spatial Development Strategy.</p>	<p>This policy sets the principles for where development will be located in Selby. It advises that where appropriate, a sequential approach to the assessment of sites will form part of a NPPF Sequential Test in order to direct development to areas with the lowest flood risk, taking account of the most up to date flood risk data available from the Environment Agency, the vulnerability of the type of development proposed and its contribution to achieving vital and sustainable communities.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
<p>Policy SP3 Green Belt.</p>	<p>This policy protects the Green Belt from development except for exceptional circumstances.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion preservation of open spaces.</p>
<p>Policy SP7 Olympia Park Strategic Development Site.</p>	<p>This policy lays out principles for the area bounded by the A19 Barlby Road, the River Ouse and the A63 Selby Bypass. It states that A sequential approach should be taken to residual flood risk and development vulnerability, in accordance with the requirements set out in the Council's Level 2 SFRA (February 2010). Site specific FRAs will be required to address relative flood levels vulnerabilities across the site.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy SP15 Sustainable Development and Climate Change.</p>	<p>This policy ensures that development in areas of flood risk is avoided wherever possible through the application of the sequential test and exception test; and ensure that where development must be located within areas of flood risk</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to resilience against climate change to ensure sustainability.</p>

	<p>that it can be made safe without increasing flood risk elsewhere.</p> <p>The policy also supports sustainable flood management measures such as water storage areas and schemes promoted through local surface water management plans to provide protection from flooding; and biodiversity and amenity improvements.</p>	
Policy SP18 Protecting and Enhancing the Environment.	<p>This policy aims to safeguard and, where possible, enhance the historic and natural environment including the landscape character and setting of areas of acknowledged importance.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character and historical/cultural assets.</p>
Policy SP19 Design Quality.	<p>This policy states that proposals for all new development will be expected to contribute to enhancing community cohesion by achieving high quality design and have regard to the local character, identity and context of its surroundings including historic townscapes, settlement patterns and the open countryside.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
Social Inclusion Strategy 2003 – 2006 (Selby District Council, 2003 – Non-Statutory document).	<p>The Strategy sets out the District Councils approach to reducing the effects of Social Exclusion and developing more inclusive communities. Objectives include,</p> <ul style="list-style-type: none"> -To improve aspects of the social, economic and environmental wellbeing of the District, which may affect people's health. 	<p>The SA should contribute to supporting the aims of this strategy.</p>
Selby District Renaissance Charter (Urban and Economic Development Group (URBED), 2005 – Non-statutory document).	<p>The Urban Renaissance programme will take a long-term view on revitalising the towns of the District, looking ahead over a 25-30 year period.</p> <p>The Charter sets out a 25 year vision for the Selby District. The vision is based on 6 themes:</p> <ul style="list-style-type: none"> • Growing smart - the creative use of housing development to reinforce the towns; • Revitalising town centres; • Uncovering the District's hidden heritage; • Diversifying the economy; • Embracing new futures for the energy industry; • Managing water so that it becomes an asset rather than a threat 	<p>The SA should contribute to supporting the aims of this policy.</p>
The Selby Biodiversity	<p>The Selby Biodiversity Action Plan seeks to achieve the following:</p>	<p>The SA should contribute to supporting the aims of this policy</p>

Action Plan (North Yorkshire County Council, Selby District Council and the Selby BAP Partnership, 2004).	<ul style="list-style-type: none"> - Ensure national targets for species and habitats (in the UK BAP) are translated into effective action at the local level. - Identify targets for species and habitats of local value. - Develop effective, long-term local partnerships. - Raise awareness of the need for biodiversity conservation. - Consider opportunities for conservation of the whole biodiversity resource. - Set up a monitoring programme for local priorities. - Set up a reporting programme. 	<p>and the SA Framework should include a criterion relating to the retention of biodiversity.</p>
Selby District Council Strategic Flood Risk Assessment (2015).	<p>This document aims to ensure that future planning and development is progressed with due consideration paid to flood risk issues and to promote the use of suitable mitigation measures such as sustainable drainage.</p>	<p>The SA should contribute to supporting the aims of this assessment.</p>
Lincolnshire County Council		
The Lincolnshire Minerals and Waste Local Plan (2016).	<p>The Minerals and Waste Local Plan aims to:</p> <ul style="list-style-type: none"> - Establish what waste facilities are needed to manage Lincolnshire's waste in the future and where these should be located; - Establish what waste facilities are needed to manage Lincolnshire's waste in the future and where these should be located; - Identify where minerals could be worked in Lincolnshire in order to meet society's needs, and - Show how both of those activities can be accommodated without compromising the unique environment of Lincolnshire. 	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the monitoring and mitigation of change upon mineral sites.</p>
The Lincolnshire Flood Risk and Drainage Management Strategy (2014).	<p>Establishes the framework for coordinated planning and infrastructure improvement for the extensive flood defences across the county.</p>	<p>The SA should contribute to supporting the aims of this strategy.</p>
Providing for Lincolnshire's Future – A Sustainability Framework (2005).	<p>Highlights the County Councils six ambitions:</p> <ol style="list-style-type: none"> 1. Create economic prosperity; 2. Enrich the quality of life; 3. Provide the opportunity for people to achieve their full potential; 4. Improve community engagement; 5. Improve the transport infrastructure throughout the county; 6. Provide community focused, cost effective services. 	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to sustainability.</p>
Nottinghamshire County Council		
Climate Change Framework for Action in	<p>Aims for a low carbon economy by 2050 and a carbon neutral economy by 2100. Promotes renewable energy sources. Targets are</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should</p>

Nottinghamshire, 2005 (Nottinghamshire Agenda 21 Forum).	progressive based on percentage reductions against a 1997 baseline and will require an average 2% reduction each year.	include a criterion relating resilience against climate change.
Nottinghamshire Landscape Character Assessments 2009/2010, coordinated by Nottinghamshire County Council.	Important influences on character include landform, ecological characteristics, landform, settlement patterns, woodland cover, field density pattern and visible archaeology. A series of objectives and specific landscape actions have been prepared for each landscape character area. For the Trent Washlands in particular, restoration of mineral workings should ensure a mosaic of local habitat types to maintain variety in the landscape.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.
Nottinghamshire Council Historic Landscape Characterisation.	Defines different landscape types. Does not provide any statutory protection but highlights that features such as medieval field patterns at Laxton are irreplaceable and may be only remaining examples in UK or Europe.	The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of historical/cultural assets.
Nottinghamshire's Sustainable Community Strategy 2010-2020.	Looks at the main social, economic and environmental challenges facing Nottinghamshire and sets out the Nottinghamshire Partnership's vision for the future and the delivery of infrastructure and services. This is spread across six priority areas focusing on the environment, crime, education, health and wellbeing, economic prosperity and stronger communities.	The SA should contribute to supporting the aims of this strategy.
West Lindsey District Council		
Central Lincolnshire Local Plan (2017) (Central Lincolnshire Joint Strategic Planning Committee).	The Adopted Local Plan for Central Lincolnshire contains planning policies and allocations for the growth and regeneration of Central Lincolnshire over the next 20 years.	The SA should contribute to supporting the aims of this plan.
Policy LP1: A Presumption in Favour of Sustainable Development.	At the heart of this policy is a desire to deliver sustainable growth; growth that is not for its own sake, but growth that brings benefits for all sectors of the community - for existing residents as much as for new ones.	The SA should contribute to supporting the aims of this policy.
Policy LP2: The Spatial Strategy and Settlement Hierarchy.	The spatial strategy will focus on delivering sustainable growth for Central Lincolnshire that meets the needs for homes and jobs, regenerates places and communities, and supports necessary	The SA should contribute to supporting the aims of this policy.

	<p>improvements to facilities, services and infrastructure. A key theme of the policy is that development should create strong, sustainable, cohesive and inclusive communities, making the most effective use of previously developed land.</p>	
<p>Policy LP4: Growth in Villages.</p>	<p>This policy highlights the following villages as being at risk from flooding and decreases the number of dwellings allocated for this reason:</p> <ul style="list-style-type: none"> -Burton Waters -Chapel Hill -East Ferry -East Stockwith -Fenton -Laughterton -Morton -Newton on Trent -Tattershall Bridge -Torksey -Torksey Lock 	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy LP9: Health and Wellbeing.</p>	<p>The policy advises that the Central Lincolnshire authorities will expect development proposals to promote, support and enhance physical and mental health and wellbeing, and thus contribute to reducing health inequalities.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>
<p>Policy LP17: Landscape, Townscape and Views.</p>	<p>This policy aims to protect and enhance the intrinsic value of the areas landscape and townscape, including the setting of settlements, proposals should have particular regard to maintaining and responding positively to any natural and man-made features within the landscape and townscape which positively contribute to the character of the area, for example water features.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of landscape character.</p>
<p>Policy LP20: Green Infrastructure Network.</p>	<p>This policy aims to maintain and improve the green infrastructure network in Central Lincolnshire by enhancing, creating and managing multifunctional green space within and around settlements that are well connected to each other and the wider countryside.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to support of green infrastructure.</p>
<p>Policy LP21: Biodiversity and Geodiversity.</p>	<p>This policy has three aims:</p> <ol style="list-style-type: none"> 1. Protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non- 	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the retention of geo/biodiversity.</p>

	<p>statutory), including sites that meet the criteria for selection as a Local Site;</p> <ol style="list-style-type: none"> 2. Minimise impacts on biodiversity and geodiversity; and 3. Seek to deliver a net gain in biodiversity and geodiversity. 	
<p>Policy LP23: Local Green Space and other Important Open Space.</p>	<p>The aim of this policy is to ensure that an area identified as a Local Green Space on the Policies Map will be protected from development, which rules out development on these sites other than in very special circumstances.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to open spaces.</p>
<p>Policy LP25: The Historic Environment.</p>	<p>This policy ensures that development proposals should protect, conserve and seek opportunities to enhance the historic environment of Central Lincolnshire.</p>	<p>The SA should contribute to supporting the aims of this policy and the SA Framework should include a criterion relating to the preservation of historical/cultural assets.</p>
<p>Policy LP55: Development in the Countryside.</p>	<p>This policy sets principles for development in the countryside. These principles act to control modifications made to buildings in the country side, and new builds, to ensure architectural and/or historical merit of existing buildings are preserved and to ensure large footprint changes are checked beforehand so that character of the area is maintained. The policy also sets out the rules associated and involved with protecting the best and most versatile agricultural land.</p>	<p>The SA should have regard to development in the countryside.</p>
<p>Policy LP56: Gypsy and Traveller and Travelling Showpeople Accommodation.</p>	<p>The policy ensures that proposals for new sites have regard to flood risk, contamination, landscape character, protection of the natural and built environment, heritage assets and agricultural land quality.</p>	<p>The SA should contribute to supporting the aims of this policy.</p>

Appendix 2 – Figures

2018 Version

Appendix 3 – Detailed Baseline Information (2018)

2018 Version

1. Social and economic factors

1.1 Employment by Sector

1.1.1 Yorkshire and Humber

In 2017 ONS published data for the Yorkshire and Humber region show the change (%) from 2015 to predicted mid 2017 values, of workforce jobs by industry. They were positive for the following industries: Information and Communication (9.4%), Water supply, sewerage, waste & remediation activities (5.2%), Transport & storage (4.2%) manufacturing (1.3%) and Accommodation & food service activities (0.9%). Changes were negative for the following industries: Agriculture, forestry & fishing (-32.4%), Electricity, gas, steam & air conditioning supply (-17.1%), Mining & quarrying (-15.9%), Wholesale & retail trade; repair of motor vehicles and motor cycles (-6.1%) and Construction (-0.8%). Overall jobs, from 2015 to 2017 were down -1.4%. Note these are changes in job numbers and do not reflect the raw size and therefore importance of any one industry (ONS, 2017a).

1.1.2 East Midlands

In 2017 ONS published data for the East Midlands region show the change (%) from 2015 to predicted mid 2017 values, of workforce jobs by industry. The change, calculated by ONS, is positive across all sectors reported on. These changes were as following: Agriculture, forestry & fishing (21.4%), Information & communication (13.2%), Electricity, gas, steam & air conditioning supply (11.3%), Mining & quarrying (10.4%), Water supply, sewerage, waste & remediation activities (8.1%), Transport & storage (5.6%), Accommodation & food service activities (5%), Manufacturing (1.9%), Wholesale & retail trade; repair of motor vehicles and motor cycles (0.8%) and Construction (0.3%). Overall jobs increased from 2015 to 2017 by 2.6% (ONS, 2017b).

2. Environmental factors

2.1 Nature conservation designations

2.1.1 Natura 2000 sites introduction

Within 2km of the study boundary there are a number of designated sites and sites that could potentially be designated as a Special Area of Conservation (SAC) under the EC Habitats Directive (92/43/EEC), a Special Protection Area (SPA) under the EC Wild Birds Directive for the protection of rare, vulnerable and regularly occurring migratory species of bird (79/409/EEC), and a 'Wetland of International Importance' under the Ramsar Convention. The SPA and SAC together forms the Humber Estuary European Marine Site (EMS), also known as a Natura 2000 site (Appendix 2 - see Figure 10).

Member states are required to take appropriate steps to avoid the deterioration of natural habitats and the habitats of species for which Natura 2000 sites have been designated (EC, 2000). These measures may be proactive (e.g. planning for the future management of Natura 2000 sites) or preventative (e.g. assessing the impacts of proposed developments on Natura 2000 sites).

The conservation status of Humber SPA and SAC features (provided by Natural England, July 2014) are given in Appendix 3, Table 1 and summaries of the designations are provided below.

2.1.2 Special Protection Areas (SPAs)

An area of 37,630 hectares of the Humber Estuary are designated as SPA. There are three SPAs within the study boundary - the Humber Estuary, Lower Derwent Valley, Thorne and Hatfield Moors. One potential SPA (pSPA) - the Greater Wash pSPA is within 2km of the study boundary.

The Humber Estuary SPA and the Lower Derwent Valley SPAs are designated for their significant waterbird assemblages and the Thorne and Hatfield Moors SPA is designated for the protection of a breeding population of Nightjar. Species include wigeon and Bewick's swan. A complete list of qualifying species is available on the JNCC website¹.

The Greater Wash area, stretching from Bridlington Bay in the north to approximately Great Yarmouth in the south, is being recommended by Natural England and the Joint Nature Conservation Committee (JNCC) as a potential SPA². The site will protect internationally important populations of overwintering red-throated diver, common scoter and little gull. It will also include the ideal coastal feeding waters used by breeding populations of common tern, sandwich tern and little tern.

2.1.3 Special Areas of Conservation (SACs)

There are four SACs within the study boundary and one additional SAC within 2km of the study boundary.

The Humber Estuary SAC is designated due to presence of a diverse range of Annex I habitats including Atlantic salt meadows and a range of sand dune types in the outer estuary area, as well as subtidal sandbanks, extensive intertidal mudflats, glasswort beds and coastal lagoons. Upstream, there are reedbeds and brackish saltmarsh communities where water becomes less saline. Upstream of the Humber Bridge there are also extensive mud and sand bars which form semi-permanent islands. SAC-designated fish species are the river lamprey *Lampetra*

¹ Source: <http://jncc.defra.gov.uk/pdf/SPA/UK9005171.pdf>, <http://jncc.defra.gov.uk/pdf/SPA/UK9006111.pdf>, <http://jncc.defra.gov.uk/pdf/SPA/UK9006092.pdf>, accessed 06/07/2018.

² Source: https://consult.defra.gov.uk/natural-england-marine/greater-wash-potential-special-protection-area-com/supporting_documents/V9%20FINAL%20Greater%20Wash%20Departmental%20Brief%2017%20October%202016%20ready%20for%20consultation.pdf, accessed 06/07/2018.

fluviatilis and the sea lamprey *Petromyzon marinus*. The grey seal *Halichoerus grypus* is an additional qualifying feature for site designation in the area.

The Lower Derwent Valley SAC is primarily designated because it contains the largest area of high-quality examples of lowland hay meadows in the UK (*Alopecurus pratensis* and *Sanguisorba officinalis*). The SAC is also notable for an abundance of the narrow-leaved water-dropwort, a rare species of flora. Alluvial forests and otter *Lutra lutra* are additional qualifying features for the designation.

Thorne Moor SAC is designated primarily for degraded raised bogs which are still capable of natural regeneration. The SAC is England's largest expanse of raised bog. Recent management of the area has increased the proportion of active raised bog within the Moors which are species-rich with bog-mosses, cottongrasses, heather, cross-leaved heath, round-leaved sundew, cranberry and bog-rosemary.

The Saltfleetby-Theddlethorpe Dunes & Gibraltar SAC is primarily protected for the following Annex I habitats: Shifting dunes along the shoreline (white dunes), fixed coastal dunes with herbaceous vegetation (grey dunes), dunes with *Hippopha rhamnoides*, humid dune slacks and embryonic shifting dunes.

The Hatfield Moor SAC is within 2km of the study area boundary primarily designated for its degraded raised bogs which are still capable of natural regeneration. This SAC is the second-largest area of extant lowland raised bog peat in England, and is a remnant of a previously extensive bog and fen peatlands within the Humber head Levels. The bog is particularly notable for its invertebrate fauna and moss and shrub flora.

Appendix 3 Table 1 Conservation status of Humber SPA and SAC features (provided by Natural England July 2014)

Nature 2000 Feature	Conservation status
Estuary	SAC feature in unfavourable recovering condition.
Mud and sand flats	SAC feature in unfavourable recovering condition.
Saline lagoons	SAC feature in favourable condition.
Saltmarsh – Atlantic salt meadow and pioneer saltmarsh	Annex 1 (Habitats Directive) feature assessment not recorded at site level.
Sub-tidal sandbanks	SAC feature in favourable condition.
Breeding birds	No current SPA condition assessment.
Wintering and passage birds	No current SPA condition assessment.
Grey seals	SAC feature in favourable condition.
River and sea lamprey	Annex 1 (Habitats Directive) feature assessment not recorded at site level.

Source: Humber Management Scheme Action Plan 2016

2.1.4 Ramsar Sites

Ramsar Sites are wetlands designated under the Ramsar Convention as wetlands of international importance (Ramsar, Wetlands of International Importance (Ramsar Sites), 2014). There are two Ramsar sites within the study boundary: the Humber Estuary and the Lower Derwent Valley. The Humber Estuary supports internationally important populations of breeding, wintering and passage birds, including the ringed plover and sanderling, and is also home to Britain's most south-easterly breeding population of grey seal. The estuary itself has a maximum tidal range of 7.4 metres, which exposes vast mud and sand flats at low tide. Vegetation in the wetland includes extensive reedbeds and areas of mature and developing saltmarsh. There is also grazing marsh, low sand dunes with marshy slack and brackish pools.

Lower Derwent Valley Ramsar, which is also an AONB (upstream of study area boundary), is a river floodplain situated between two villages. It is of national importance for breeding and wintering ducks and swans and is also important for breeding waders. Grassland determined by the extent of winter flooding is the dominant vegetation at the site. Part of the site is also an important example of traditionally managed species-rich alluvial flood meadow habitat in the UK. The site is also utilized by humans for fishing, hunting and grazing³.

2.1.5 Sites of Special Scientific Interest (SSSIs)

There are 24 SSSIs within the study area boundary, including the Humber Estuary itself. Most are in either a Favourable or Unfavourable Recovering condition, and most are designated for biological reasons (i.e. flora and fauna), though two SSSIs in East Yorkshire are designated for geological reasons. The list of SSSI sites located in each local authority within the study area and their status (condition) and feature type (biological, geological) is presented on Appendix 3 Table 2. There are an additional 12 SSSIs situated within 2km of the study boundary. For location of these SSSIs, see map in Appendix 2.

Appendix 3 Table 2 List of all SSSIs and their status identified by local authorities in the study area

Local Authority	SSSI Name	Condition*	Reason
Several	Humber Estuary	Mostly UR	Biological ⁴
Doncaster	Owston Hay Meadows	F	Biological
	Shirley Pool	F & UR	Biological
	Went Ings Meadows	F & UR	Biological
Doncaster, East Yorks, North Lincs	Thorne, Crowle and Goole Moors	UR & UD	Biological
East Lindsey	Saltfleetby-Theddlethorpe Dunes	F	Biological
	Tetney Blow Wells	UR	Biological
East Yorkshire	Barn Hill Meadows	F & UR	Biological
	Kelsey Hill Gravel Pits	F	Geological
	Leven Canal	UR & UNC	Biological
	Pulfin Bog	F	Biological
	River Derwent	UR	Biological
	River Hull Headwaters	UR	Biological
	Roos Bog	F	Geological
	South Cliffe Common	F & UR	Biological
	The Lagoons	UR	Biological
Tophill Low	UR	Biological	
North Lincolnshire	Crowle Borrow Pits	UR	Biological

³ Source: <https://rsis.ramsar.org/ris/663> and <https://rsis.ramsar.org/ris/301>, accessed 06/07/2018.

⁴ Some of the Humber Estuary SSSI units have been classed as unfavourable recovering due to the impact coastal squeeze is having on intertidal habitats.

	Eastoft Meadow	F	Biological
	Messingham Heath	UR	Biological
	North Killingholme Haven Pits	UR	Biological
Selby District	Eskamhorn Meadows	F	Biological
West Lindsey	Laughton Common	UNC	Biological
	Tuetoos Hills	UR	Biological

Source: Natural England

* F = Favourable, UR = Unfavourable Recovering, UD = Unfavourable Declining, UNC = Unfavourable No Change. The condition of the SSSI land in England is assessed by Natural England, using categories across England, Scotland, Wales, and Northern Ireland through the Joint Nature Conservation Committee.⁵

2.1.6 National Nature Reserves (NNRs)

There are five National Nature Reserves within the study area boundary, including one NNR within 2km of the boundary.

Three NNRs are managed by the Lincolnshire Wildlife Trust: the Donna Nook NNR (340ha), Far Ings NNR (65ha) and Saltfleetby-Theddlethorpe Dunes NNR (within 2km of the study area boundary). Donna Nook, which covers a 10km extent of coastline between Grainthorpe Haven and Saltfleet, is important for 47 species of bird which breed on-site. Habitats in this NNR includes sand dunes, slacks and inter-tidal ranges as well as mudflats and saltings which are formed from material deposited from the River Humber⁶. The Far Ings NNR is designated for its extensive reedbeds, and meadow and scrub and open water. The NNR is one of the few UK's strongholds for breeding bittern, and is a major east-west flyaway for migrating birds including waders and wildfowl. In summer, it is also important for hirundine roosts in the reedbeds.⁷

Other NNRs within the study area are the Spurn NNR (managed by Yorkshire Wildlife Trust) and the Humberheads Peatland NNR (managed by Doncaster Metropolitan Borough Council). The Spurn NNR is important for birdlife year-round, including sand martins, swallows and wheatears during spring migration and waders in the winter which feed on the rich mudflats of the estuary. Grey seals and whales can sometimes be seen offshore⁸.

The Humberhead Peatlands NNR also has important breeding populations of birds including nightjar and crane, as well as invertebrate assemblages. Habitats include grasslands, degraded raised mire with potential for restoration, a mosaic of successional habitats on sand and gravels on Hatfield Moor, open water, and Fen and Wet Woodland Communities on Warped Soils.⁹

2.2 Locally designated sites

In addition to the internationally and nationally designated sites, the sections below describe the local biodiversity designations within the study area. These are shown on Appendix 2, Figure 11.

2.2.1 Local Nature Reserves (LNRs)

There are 15 Local Nature Reserves within the study boundary; they are - Buntings Wood at Doncaster Metropolitan Borough Council; Humber Bridge, Eastington Ponds, Howden Marsh, Sugar Mill Ponds, Mayfield and Broom Park at East Riding of Yorkshire Council; Rockford Fields, Noddlehill at Hull City Council; Owllet at

⁵ Source: <https://designatedsites.naturalengland.org.uk/SSSIGlossary.aspx>, accessed 06/07/2018.

⁶ Source: <http://www.lincstrust.org.uk/donna-nook>, accessed 06/07/2018.

⁷ Source: <http://www.lincstrust.org.uk/far-ings>, accessed 06/07/2018.

⁸ Source: <http://www.ywt.org.uk/spurn-national-nature-reserve>, accessed 06/07/2018.

⁹ Source: <https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=1006766&SiteName=humberhead&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=>, accessed 06/07/2018.

Lincolnshire County Council; Weelsby Wood Park, Cleethorpes Country Park, Cleethorpes at North East Lincolnshire; Far Ings, Waters Edge at North Lincolnshire; and Barlow Common at Selby District Council. There are an additional 10 LNRs within 2km of the boundary.

2.2.2 RSPB Reserves

2.2.2.1 Blacktoft Sands, East Riding of Yorkshire

Blacktoft Sands RSPB reserve has the largest area of tidal reedbed in England. The reserve is used by 270 species of bird throughout the year, including waders, warblers and raptors and thousands of ducks in winter. In spring, marsh harriers return to the reserve and avocets begin nesting.

2.2.2.2 Beckingham Marshes, Bassetlaw District

Beckingham Marshes RSPB reserve is a conservation project in partnership with the Environment Agency along the River Trent floodplain. The wetland reserve supports breeding wading birds such as lapwing and redshanks, as well as species of amphibian, dragonflies, damselflies, aquatic plants and water voles.

In winter, the flooded fields are of importance for wildfowl including wigeon, teal, gadwall and shoveler. Other species of note include curlew, lapwing, snipe, tree sparrow, yellow wagtail, skylark and others.

2018 Version

3. Water Framework Directive (WFD) information on water bodies

3.1 Surface waters

Appendix 3 Table 3 Water body WFD parameters for the Humber Upper (based on RBMP cycle 2 data)

Water body ID	GB530402609203
Water body name	Humber Upper
NGR	SE7856623918
Catchment area (ha)	1233.169 Area
Catchment area (km ²)	12.332 Area
Hydromorphological designation	Transitional water body – heavily modified
Current overall status	Moderate
Status objective (overall)	Moderate by 2015
Reasons for not achieving good status:	Unfavourable balance of costs and benefits Causes of adverse impact unknown Disproportionate burdens
Protected area designation	Conservation of Wild Birds Directive; Habitats Directive; Nitrates Directive; Urban Waste Water Treatment
Hydromorphological supporting elements <ul style="list-style-type: none"> ▪ Hydrological regime 	Supports good. Supports good by 2015
Current ecological status (and status objective)	Moderate. Moderate by 2015
Biological quality elements (and status objective) <ul style="list-style-type: none"> ▪ Fish ▪ Macroalgae 	Moderate. Good by 2027 Good. Good by 2015 High. Good by 2015
Physico-chemical quality elements (and status objective)	Moderate. Moderate by 2015
Chemical quality elements (and status objective)	Good. Good by 2015

HUMBER UPPER

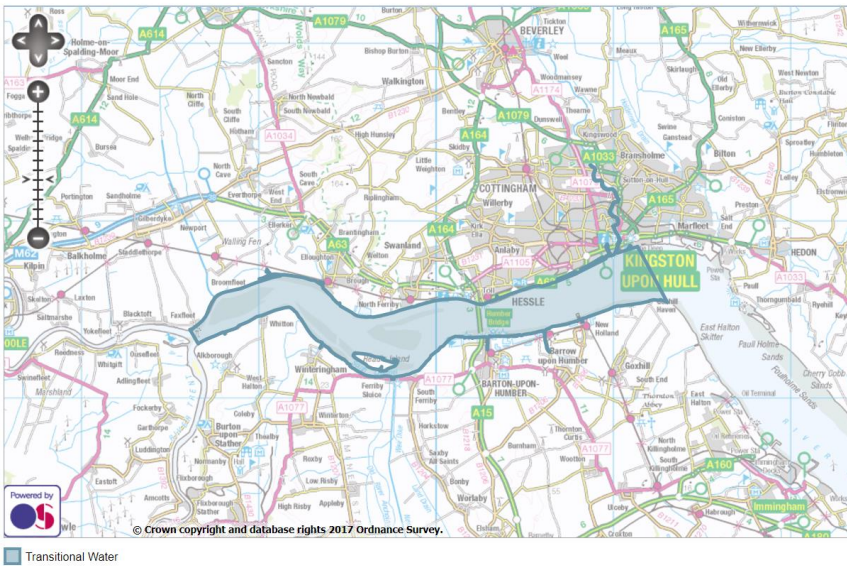


Appendix 3 Figure 1 Humber Upper water body (source Catchment explorer)

Appendix 3 Table 4 Water body WFD parameters for the Humber Middle (based on RBMP cycle 2 data)

Water body ID	GB530402609202
Water body name	Humber Middle
NGR	TA1011527108
Surface area (km ²)	67.14 km ²
Hydromorphological designation	Transitional Water – heavily modified
Current overall status	Moderate
Status objective (overall)	Moderate by 2015
Reasons for not achieving good status:	Unfavourable balance of costs and benefits Causes of adverse impact unknown Disproportionate burdens
Protected area designation	Conservation of Wild Birds Directive; Habitats Directive; Nitrates Directive
Hydromorphological supporting elements	Not assessed
Hydrological regime	
<ul style="list-style-type: none"> Current ecological status (and status objective) 	Moderate. Moderate by 2015
Biological quality elements (and status objective) <ul style="list-style-type: none"> Fish 	Moderate. Good by 2027 Good. Good by 2015
Macroalgae <ul style="list-style-type: none"> Physico-chemical quality elements (and status objective) 	Good. Good by 2015 Moderate
Chemical quality elements (and status objective)	Fail
Water body name	Humber Middle

HUMBER MIDDLE



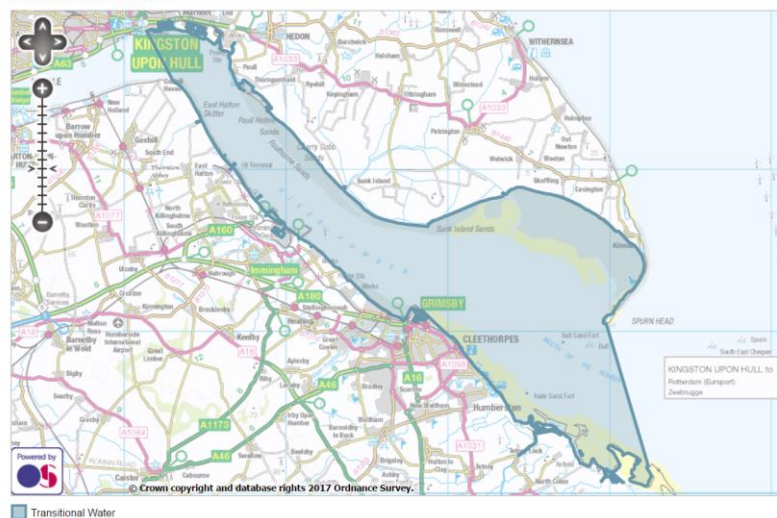
Appendix 3 Figure 2 Humber Middle water body (source Catchment Explorer)

Appendix 3 Table 5 Water body WFD parameters for the Humber Lower (based on RBMP cycle 2 data)

Water body ID	GB530402609201
Water body name	Humber Lower
NGR	TA3205914842
Catchment area (ha)	24786.211 Area
Catchment area (km ²)	247.862 Area
Hydromorphological designation	Transitional water body – heavily modified
Current overall status	Moderate
Status objective (overall)	Moderate by 2015
Reasons for not achieving good status:	Unfavourable balance of costs and benefits Causes of adverse impact unknown Disproportionate burdens
Protected area designation	Bathing Water Directive; Conservation of Wild Birds Directive; Habitats Directive; Nitrates Directive; Urban Waste Water Treatment
<ul style="list-style-type: none"> Hydromorphological supporting elements 	Not assessed
Current ecological status (and status objective)	Moderate. Moderate by 2015
Biological quality elements (and status objective)	Moderate. Good by 2027
<ul style="list-style-type: none"> Invertebrates Fish Macroalgae 	Moderate. Good by 2027 Good. Good by 2015 High. Good by 2015
Physico-chemical quality elements (and status objective)	Moderate. Moderate by 2015

Water body ID	GB530402609201
Chemical quality elements (and status objective)	Good. Good by 2015

HUMBER LOWER



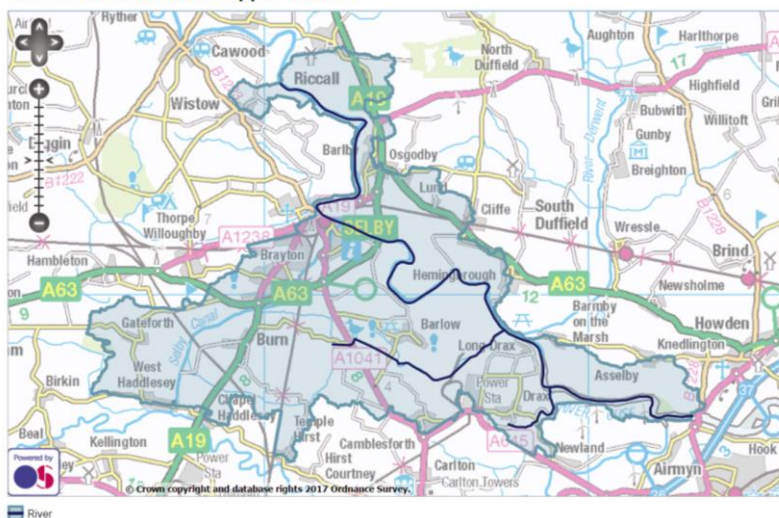
Appendix 3 Figure 3 Humber Lower water body (source Catchment Explorer)

Appendix 3 Table 6 Water body WFD parameters for the Ouse to Upper Humber (based on RBMP cycle 2 data)

Water body ID	GB104027064270
Water body name	Ouse from River Wharfe to Upper Humber
NGR	SE6326931783
Catchment area (ha)	8777.989 ha
Catchment area (km ²)	34.241
Hydromorphological designation	River water body – heavily modified
Current overall status	Moderate
Status objective (overall)	Good by 2027
Reasons for not achieving good status:	Causes of adverse impact unknown Disproportionate burdens
Protected area designation	Habitats and Species directive; Nitrates Directive;
Hydromorphological supporting elements	Supports good
Hydrological regime	
Current ecological status (and status objective)	Moderate. Good by 2027
Biological quality elements (and status objective)	Not assessed
<ul style="list-style-type: none"> ▪ Invertebrates ▪ Fish Macroalgae	
Physico-chemical quality elements (and status objective)	Moderate. Good by 2027

Water body ID	GB104027064270
Chemical quality elements (and status objective)	Fail. Good by 2027

Ouse from R Wharfe to Upper Humber

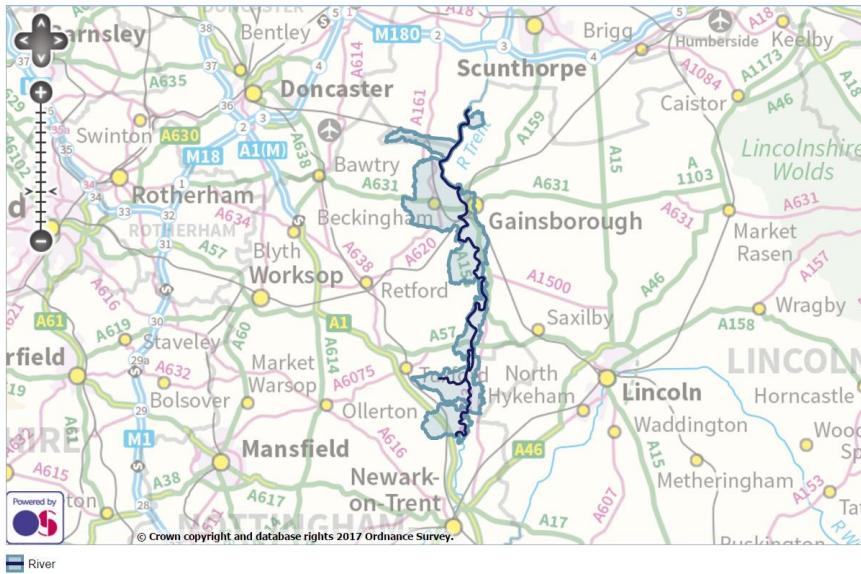


Appendix 3 Figure 4 Ouse to Upper Humber water body (source Catchment Explorer)

Appendix 3 Table 7 Water body WFD parameters for the Carlton-on-Trent to Laughton Drain (based on RBMP cycle 2 data)

Water body ID	GB104028058480
Water body name	Trent from Carlton on Trent to Laughton Drain
NGR	SK8210772355
Catchment area (km ²)	126.027
Hydromorphological designation	River - artificial
Current overall status	Moderate
Status objective (overall)	Good by 2027
Reasons for not achieving good status:	Disproportionate burdens
Protected area designation	Drinking Water Protected Area Directive; Nitrates Directive; Urban Waste Water Treatment Directive
Hydromorphological supporting elements	Supports good
Hydrological regime	
Current ecological status (and status objective)	Moderate. Good by 2027
Biological quality elements (and status objective)	Bad. Good by 2027
Physico-chemical quality elements (and status objective)	Moderate. Good by 2027
Chemical quality elements (and status objective)	Good. Good by 2015

Trent from Carlton-on-Trent to Laughton Drain

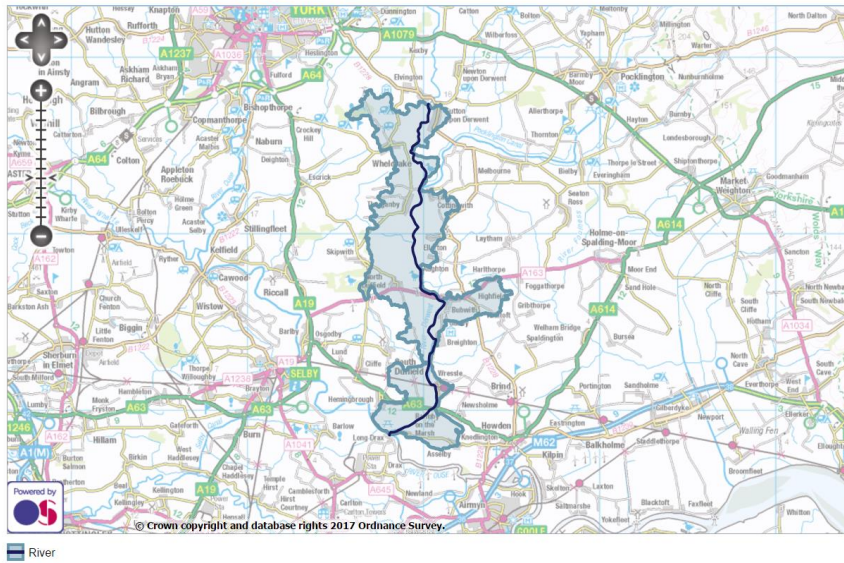


Appendix 3 Figure 5 Trent from Carlton-on-Trent to Laughton Drain (source Catchment Explorer)

Appendix 3 Table 8 Water body WFD parameters for the Derwent

Water body ID	GB104027068311
Water body name	Derwent from Elvington Beck to River Ouse
NGR	SE6984137258
Catchment area (km ²)	24.292
Hydromorphological designation	River. Heavily modified
Current overall status	Moderate.
Status objective (overall)	Good by 2027
Reasons for not achieving good status:	Disproportionate burdens
Protected area designation	Conservation of Wild Birds Directive; Drinking Water Protected Area; Habitats and Species Directive; Nitrates Directive.
Hydromorphological supporting elements Hydrological regime	Not assessed.
Current ecological status (and status objective)	Moderate. Good by 2027
Biological quality elements (and status objective)	High. Good by 2015
Physico-chemical quality elements (and status objective)	High. Good by 2015
Chemical quality elements (and status objective)	Good. Good by 2015

Derwent from Elvington Beck to River Ouse



Appendix 3 Figure 6 Derwent (source Catchment Explorer)

3.2 Groundwater bodies

There are several groundwater bodies in the study area, as follows:

- Hull and East Riding chalk
- Grimsby Ancholme Louth chalk unit
- Trent lower Erewash – secondary combined
- Idle Torne – secondary mudrocks
- East Riding mercia mudstone
- Wharfe and Ouse lower Sherwood sandstone
- Aire and Don sherwood sandstone
- Grimsby Ancholme Frodingham ironstone unit
- Grimsby Ancholme Louth limestone unit.

The element status and conditions for each groundwater body are included in Table 9 below. The status for each is either Good or Poor. 'Poor' quantitative status means that the aquifer is unsustainable and suffers from low water levels – this is a problem for public water supply or groundwater dependent terrestrial ecosystems (GWDTes). 'Qualitative' means there could be issues with water quality, such as inundation with pollutants, which could pose a problem for public water supply or for groundwater-fed surface waters and dependent ecosystems such as wetlands. Any proposed development should consider the status of the waterbodies.

Appendix 3 Table 9 Groundwater body WFD parameters

Waterbody ID	Water body	Status	Classification Level	Classification Item
GB40401G40 1500	Grimsby Ancholme Louth Chalk Unit	Good	Element	Chemical GWDTes test
		Poor	Element	Quantitative Dependent Surface Water Body Status

		Good	Element	Quantitative GWDTes test
		Good	Element	Quantitative Saline Intrusion
		Poor	Ecological, chemical or quantitative status	Quantitative
		Good	Element	Chemical Saline Intrusion
		Poor	Element	Quantitative Water Balance
		Upward trend	Element	Trend Assessment
		Poor	Overall Waterbody	Overall Water Body
		Poor	Component	Quantitative Status element
		Good	Element	Chemical Dependent Surface Water Body Status
		Poor	Element	General Chemical Test
		Poor	Ecological, chemical or quantitative status	Chemical (GW)
		Poor	Component	Chemical Status element
		Poor	Element	Chemical Drinking Water Protected Area
GB40401G700700	Hull & East Riding Chalk	Good	Element	Chemical GWDTes test
		Poor	Ecological, chemical or quantitative status	Chemical (GW)
		Good	Element	Quantitative Water Balance
		Poor	Element	General Chemical Test
		Upward trend	Element	Trend Assessment
		Good	Element	Quantitative GWDTes test
		Good	Element	Chemical Dependent Surface Water Body Status
		Poor	Ecological, chemical or quantitative status	Quantitative
		Poor	Element	Quantitative Dependent Surface Water Body Status
		Poor	Overall Waterbody	Overall Water Body
		Poor	Component	Quantitative Status element
		Poor	Element	Chemical Drinking Water Protected Area
		Poor	Element	Quantitative Saline Intrusion

		Poor	Component	Chemical Status element
		Poor	Element	Chemical Saline Intrusion
GB40402G990200	East Riding Mercia Mudstone	Good	Element	Chemical GWDTes test
		Good	Element	Chemical Dependent Surface Water Body Status
		Poor	Component	Quantitative Status element
		Poor	Overall Waterbody	Overall Water Body
		No trend	Element	Trend Assessment
		Good	Element	General Chemical Test
		Good	Element	Chemical Saline Intrusion
		Poor	Ecological, chemical or quantitative status	Quantitative
		Good	Component	Chemical Status element
		Good	Element	Quantitative Saline Intrusion
		Good	Element	Chemical Drinking Water Protected Area
		Good	Element	Quantitative GWDTes test
		Good	Ecological, chemical or quantitative status	Chemical (GW)
		Good	Element	Quantitative Water Balance
		Poor	Element	Quantitative Dependent Surface Water Body Status
GB40402G700500	Wharfe & Lower Ouse Millstone Grit and Carb Limestone	Good	Element	Quantitative Dependent Surface Water Body Status
		Good	Element	Quantitative Water Balance
		Good	Ecological, chemical or quantitative status	Quantitative
		Poor	Element	Chemical Dependent Surface Water Body Status
		Poor	Component	Chemical Status element
		Good	Element	Chemical GWDTes test
		Good	Component	Quantitative Status element
		Good	Element	Chemical Saline Intrusion
		Good	Element	General Chemical Test
Poor	Ecological, chemical or quantitative status	Chemical (GW)		

		Good	Element	Quantitative GWDTes test
		Good	Element	Quantitative Saline Intrusion
		Good	Element	Chemical Drinking Water Protected Area
		No trend	Element	Trend Assessment
		Poor	Overall Waterbody	Overall Water Body
GB40402G990300	Lower Trent & Erewash - Secondary Combined	Good	Element	Chemical Saline Intrusion
		Good	Element	Quantitative Saline Intrusion
		Good	Element	Chemical Drinking Water Protected Area
		Poor	Ecological, chemical or quantitative status	Chemical (GW)
		No trend	Element	Trend Assessment
		Good	Ecological, chemical or quantitative status	Quantitative
		Good	Element	Quantitative GWDTes test
		Poor	Overall Waterbody	Overall Water Body
		Good	Element	General Chemical Test
		Good	Component	Quantitative Status element
		Good	Element	Quantitative Water Balance
		Poor	Element	Chemical Dependent Surface Water Body Status
		Poor	Component	Chemical Status element
		Good	Element	Chemical GWDTes test
		Good	Element	Quantitative Dependent Surface Water Body Status
GB40402G445800	Grimsby Ancholme Frodingham Ironstone Unit	Good	Element	Quantitative Water Balance
		Good	Ecological, chemical or quantitative status	Quantitative
		Good	Component	Chemical Status element
		Good	Element	Quantitative Saline Intrusion
		Good	Element	Quantitative GWDTes test
		No trend	Element	Trend Assessment
		Good	Element	Quantitative Dependent Surface Water Body Status

		Good	Ecological, chemical or quantitative status	Chemical (GW)
		Good	Element	Chemical Drinking Water Protected Area
		Good	Element	Chemical GWDTEs test
		Good	Element	Chemical Dependent Surface Water Body Status
		Good	Overall Waterbody	Overall Water Body
		Good	Element	Chemical Saline Intrusion
		Good	Component	Quantitative Status element
		Good	Element	General Chemical Test
GB40401G444600	Grimsby Ancholme Louth Limestone Unit	Good	Element	Quantitative GWDTEs test
		Good	Element	Chemical Saline Intrusion
		Good	Overall Waterbody	Overall Water Body
		Good	Element	Quantitative Dependent Surface Water Body Status
		Good	Element	Chemical Dependent Surface Water Body Status
		Good	Element	General Chemical Test
		Good	Element	Chemical Drinking Water Protected Area
		Good	Element	Chemical GWDTEs test
		No trend	Element	Trend Assessment
		Good	Ecological, chemical or quantitative status	Quantitative
		Good	Component	Chemical Status element
		Good	Element	Quantitative Water Balance
		Good	Ecological, chemical or quantitative status	Chemical (GW)
		Good	Component	Quantitative Status element
Good	Element	Quantitative Saline Intrusion		
GB40402G992300	Don & Rother Millstone grit & Coal Measures	Good	Component	Quantitative Status element
		Poor	Ecological, chemical or quantitative status	Chemical (GW)
		Good	Element	Quantitative Water Balance

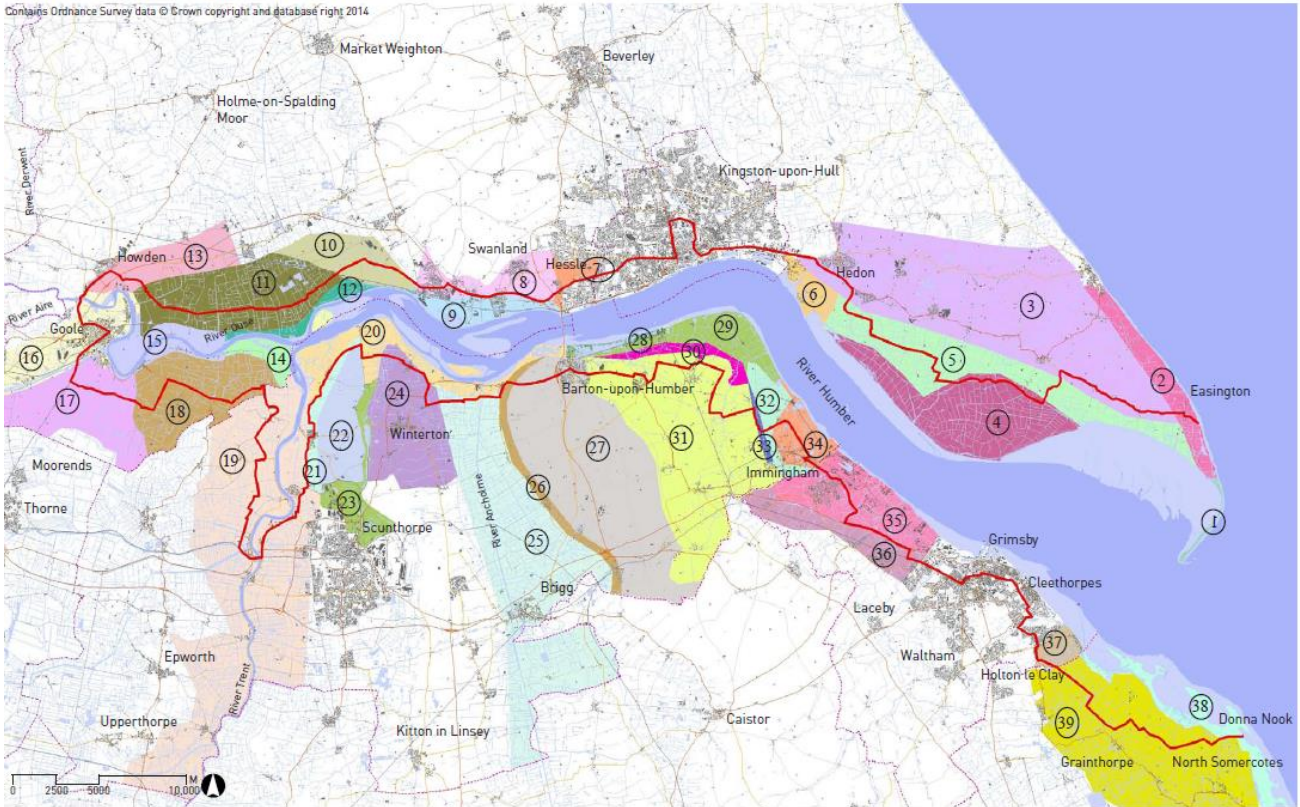
		Good	Ecological, chemical or quantitative status	Quantitative
		Good	Element	Quantitative GWDTes test
		Good	Element	Quantitative Saline Intrusion
		Good	Element	Quantitative Dependent Surface Water Body Status
		Good	Element	Chemical Saline Intrusion
		Poor	Element	Chemical Dependent Surface Water Body Status
		Poor	Component	Chemical Status element
		Poor	Overall Waterbody	Overall Water Body
		No trend	Element	Trend Assessment
		Good	Element	Chemical Drinking Water Protected Area
		Good	Element	Chemical GWDTes test
		Good	Element	General Chemical Test
GB40401G702400	Wharfe & Lower Ouse Sherwood Sandstone	Good	Element	Quantitative GWDTes test
		Poor	Component	Quantitative Status element
		No trend	Element	Trend Assessment
		Poor	Overall Waterbody	Overall Water Body
		Good	Element	Chemical Drinking Water Protected Area
		Poor	Element	Chemical Saline Intrusion
		Poor	Ecological, chemical or quantitative status	Quantitative
		Good	Element	General Chemical Test
		Poor	Element	Quantitative Saline Intrusion
		Poor	Ecological, chemical or quantitative status	Chemical (GW)
		Poor	Component	Chemical Status element
		Good	Element	Quantitative Dependent Surface Water Body Status
		Good	Element	Chemical GWDTes test
		Good	Element	Quantitative Water Balance
		Good	Element	Chemical Dependent Surface Water Body Status

GB40401G701000	Aire & Don Sherwood Sandstone.	Poor	Ecological, chemical or quantitative status	Quantitative
		Upward trend	Element	Trend Assessment
		Poor	Element	General Chemical Test
		Poor	Element	Quantitative Water Balance
		Good	Element	Quantitative Saline Intrusion
		Poor	Component	Chemical Status element
		Good	Element	Quantitative GWDTes test
		Good	Element	Chemical Dependent Surface Water Body Status
		Poor	Component	Quantitative Status element
		Poor	Element	Chemical Drinking Water Protected Area
		Good	Element	Chemical GWDTes test
		Poor	Overall Waterbody	Overall Water Body
		Good	Element	Quantitative Dependent Surface Water Body Status
		Good	Element	Chemical Saline Intrusion
		Poor	Ecological, chemical or quantitative status	Chemical (GW)



4. Local landscape character

Map and table indicating local landscape character areas (reproduced from (Cambridge Studios)).



Key- Assessment (LCA) applicable on a Local Landscape Character Areas

Local Authority	Local Landscape Character Area	Number on Map
East Riding of Yorkshire (East Riding of Yorkshire Landscape Character Assessment, November 2005)	Low-lying drained farmland – Spurn Point	1
	Coastal Farmland – Withernsea to Spurn Coast	2
	Open Farmland – Burstwick to Withernsea Farmland	3
	Low-lying drained farmland – Sunk Island	4
	Low-lying drained farmland – South Patrington, Ottringham and Keyingham Farmland	5
	Low-lying drained farmland – Paull Farmland	6
	Farmed Urban Fringe – North Hessle Farmland	7
	Jurassic Hills Farmland – Elloughton cum Brough to Hessle Urban Edge Farmland	8
	Farmed Urban Fringe – North Ferriby Farmland	9
	Drained Open Farmland – Walling Fen and Ellerker Sands Farmland	10
	Drained Open Farmland – Blacktoft and Laxton Farmland	11

	Humber Banks – Brough to Yokefleet Riverbank	12
	M62 Corridor Farmland – Howden to Gilberdyke	13
	Humber Banks – Blacktoft Sands	14
	River Corridors – River Ouse Corridor: Howden Dyke to Trent Reach	15
	M62 Corridor Farmland – M62 Corridor Hook to Pollington	16
	Drained Open Farmland – Goole Fields	17
	Drained Open Farmland – Twin Rivers Farmland	18
North Lincolnshire Council (North Lincolnshire Landscape Character Assessment and Guidelines, 1999)	Trent Levels – Flat Drained Farmland	19
	Humber Estuary – Flat Drained Farmland	20
	Lincolnshire Edge – Steep Wooded Scarp	21
	Lincolnshire Edge - Elevated Wooded Farmland	22
	Lincolnshire Edge- Despoiled Landscape	23
	Lincolnshire Edge- Elevated Open Farmland	24
	Vale of Ancholme- Flat Valley Bottom Farmland	25
	Lincolnshire Wolds - Wooded Farmed Scarp Slope	26
	Lincolnshire Wolds - Open Rolling High Farmland	27
	Humber Estuary – Waterfilled Clay Pits	28
	Humber Estuary – Flat Open Farmland	29
	Lincolnshire Drift – Flat Open Farmland	30
	Lincolnshire Drift –Open Undulating Farmland	31
	Humber Estuary – Open Undulating Farmland	32
	Humber Estuary – Wooded Farmland	33
Humber Estuary – Industrial Landscape	34	
North East Lincolnshire Council (North-East Lincolnshire Landscape Character Assessment, February 2010)	Humber Estuary – Industrial landscape	35
	Lincolnshire Coast and Marshes – Open Farmland	36
	Humber Estuary – Flat Open Farmland	37
East Lindsey District Council	Naturalistic Coast - Donna Nook to Gibraltar Point	38
	Coastal Outmarsh - Tetney Lock to Skegness	39

Appendix 4 – Consultation Responses

Name/ Organisation	Report section	Page number	Comment	Update to the SA Scoping Report
IDBs	1.1	1	Is this a “new” strategy or a comprehensive review of the 2008 one? Wording “New, revised Strategy”, indicates there has been a previous revision following issue of 2008 report. Suggest “revised Strategy” and dropping the word “new” from text.	The Environment Agency confirmed that the document will be referenced as the ‘new strategy’. No change.
	1.2	1	“Background to Strategy” – built upon Planning for the Rising Tides – Climate Change resulting in sea level rise and sustainability/economics of continuing current levels of protection. Climate Change and relative sea level rise is almost absent from this section. Whilst the Strategy is to set out how flood risk can be managed, the reader is pointed toward tidal surge events and flooding from other sources with no real mention of eventual impacts of climate change on rising tides twice a day. I believe awareness should be more apparent.	Noted. Added reference to flooding from sea level rise linked to climate change.
	1.5.2	3	EA is committed to working with its key stakeholders.	Noted
	2.3.1	7	Consultation please include IDBs as Risk Management Authorities under the Flood & Water Management Act 2010 but also Relevant Authorities under the Habitats Regs. Important because any identified flood cells will impact on an IDB’s ability to deliver water level management within its District.	Noted. Comment relates to EA communications team.
	2.4.1	10	“However, the option may have a negative effect in future, if the climate scenario is considered”. The climate scenario must be considered, it was part of the original driver of the Strategy together with economic feasibility of continuing to provide current levels of protection.	Noted. Amended the sentence to clarify that climate change linked sea level rise will pose flood risk in the future for this example.
	3.3.1	15	Isle of Axholme Strategy now being implemented? Document refers to draft	Noted; removed word ‘draft’.

	5.2.4	35	Passive outfalls will be impacted...needs small detail as to what that impact would be e.g. compromising ability to drain land for agriculture and potential impact on third party infrastructure	Noted. Text added.
	5.3.2	36	Physical processes first paragraph. Needs capital letter to start sentence "Present rate of SLR"	Noted. Text amended
	6.1	43	Reference error and page number missing	Noted. Reference error corrected.
	6.6	47	Reference to text in italics referring to EA statutory duties – can't see any italics	Noted. Amended to show italics.
Highways England	6.2/table 5.1	44	Should material assets be widened to include specific high value commercial assets, or will these be adequately covered by the more general SA topic of 'economic growth and economic development'. Examples might be large shopping centres, business parks	Noted. No change. High value commercial assets will be covered under the 'economic growth and economic development' topic.
	6.6/table 6.2	50	Would you want to scale road impact, such as by Annual Average Daily Flow? The option testing would want to reflect that transport networks tend to need all substantial elements of a route to be operational for the route to be operational. Example – M180/A180/ A160 link to docks could all be required for port traffic from Immingham to connect to the M18	Noted. No change. SA will cover impact to strategic transport links. SA will not attempt to scale road impact directly, instead rely on findings from evidence studies. For example, it will refer to the critical infrastructure study which will be conducted as part of the Strategy. Comments shared for consideration for the appraisal work outside the SA.
	6.6/table 6.2	50	How are you going to manage the generally high level of most scoring options against those that can be fully monetised such as material asset loss or specific commercial asset loss? These seem somewhat different as they can in principle be fully worked out down to £ per day of loss caused by flooding. For assets where their loss could be monetised, have you a standardised approach to doing this? Daily loss to the economy? Estimated insurance costs?	Noted. No change. SA will use available evidence studies to support the appraisal. Comments shared for consideration for the appraisal work outside the SA. Ecosystem Services

		Are you proposing to apply a monetized approach to non-monetised assets such as biodiversity using tools from the economist's toolbox such as Stated Preference valuations?	Valuation (ESV) will be completed for the preferred option(s), which will support the SA.
6.6/table 6.2	50	<p>Do you want to be more specific about the degrees of loss that will occur during a flooding event? Is there a defined flooding event that will be used to standardize the scoring? For example in human terms:</p> <ol style="list-style-type: none"> 1. Temporary displacement from home 2. Total loss of home 3. Home not habitable for an extended period 4. Home habitable but without power in summer 5. Home habitable but without power in winter 6. Home habitable but without ability to travel to work 7. Home habitable but without fresh water 8. Home habitable but without access to food stores <p>.. would appear to have different amounts of distress and ability to be coped with for a period. Would the impact be scaled according to the number of people affected? I could not see any people related scaling in the table, which seemed curious. Flooding of a small hamlet vs flooding of Hull would appear to be the same in the scoring as far as I can tell, and that does not seem intuitive.</p>	<p>Noted. The SA, for this item, will rely on economics valuation that will be conducted by the Strategy team, using Defra Guidance.</p> <p>Comments shared for consideration for the appraisal work outside the SA.</p>
General		I found myself wondering how you would test and validate the conclusions of the scoring. Have you, for example, a set of sample business cases from past projects you have confidence in that you will run through the scoring and see that the results are coherent with how they appraised in the past?	Noted. SA team has experience conducting appraisal for various Local Authority Local Plans/ Core Strategies etc. Various departments within the EA will also provide information which will aid our scoring method. The appraisal method will be the same but will take into account the context and appropriate evidence studies to inform the appraisal.

	general		Do you have a proposed scoring scale? For example -2 Heavily adverse, -1 slight adverse, 0 neutral, 1 slight positive, 2 heavily positive	No change.
West Lindsey District Council	General		<p>I welcome the opportunity to review the SA Scoping report and would like to continue to receive updates on this study as it progresses.</p> <p>The study is seen as a very important component in shaping future growth in parts of West Lindsey, predominantly in Gainsborough where significant new growth is planned adjacent to the River Trent. This includes the delivery of hundreds of new homes on brownfield land as part of the designated 'Housing Zone' – one of only 20 such designations nationally outside Central London where there are a number of Government-backed initiatives available to accelerate the delivery of new homes. It would be advisable to make reference to this as part of the policy review for this SA, although I have expanded on this below.</p> <p>For this reason the Humber Strategy has already been raised in a number of discussions with the EA over the past 18 months (as a result of discussions over the above sites) and it will form a key part of how flood risk is considered for both residential and employment sites that are planned in the study area, particularly those in the vicinity of the tidal section of the River Trent in Gainsborough. This study is therefore expected to be used to directly inform future land uses in this area and, in turn, appropriate methods of mitigation or flood alleviation and environmental enhancement.</p> <p>The report appears to be very comprehensive, and it is clear that the background data considered has been thoroughly researched. Overall the assessment criteria look suitable and I have no further comments in this regard.</p> <p>The plan and policy review appears suitable too and, whilst relatively high-level, includes most of the key considerations</p>	Amended to include LP50, LP40 & LP41 in Appendix 1

			<p>applicable to the WLDC area. The only addition that is advised is with regards to Appendix 1 p.45-47, where it does not appear to show that Policies LP40 and LP41 of the Central Lincolnshire Local Plan have been considered; these cover Gainsborough Riverside developments and the Regeneration of Gainsborough respectively.</p> <p>The first of these, LP40 seeks to extend and enhance the existing public realm and public space offer along the full length of the riverside area within Gainsborough, including the enhancement of existing riverside walks and cycle ways. Any future works/options for the River Trent considered in the development of the Humber Strategy should have regard to these policies and explore the opportunities for possible joint working to achieve these policy aspirations, which are a significant part of the ambitious plans to regenerate important riverside sites. We would welcome further discussion on these opportunities in due course.</p> <p>Aside from this I have no further comments at this time but look forward to receiving updates on the progress of this important work.</p>	
Bassetlaw District Council	General		We raise no issue with the content of the proposed Sustainability Appraisal Framework. Our comments largely relate to the accuracy of baseline information contained in the Scoping Report.	Noted.
	3.3.2	16	<p>The Scoping Report should acknowledge the fact that Bassetlaw District Council is an 'over-LEP' authority, whereby it is part of the area covered by the D2N2 LEP, as well as the Sheffield City Region.</p> <p>This LEP also has ambitious economic growth aspirations.</p>	Noted. Text added to section 3.3.2.
	3.3.3	16	The wording of this paragraph gives the impression of confusing saved (pre-Planning and Compulsory Purchase Act 2004) Local Plan policies and current adopted DPD policies.	Noted. Amended text to remove confusion.
	3.3.3	17	Bassetlaw District Council's adopted development plan is the Bassetlaw Core Strategy & Development Management Policies	Noted. Amended text to reflect comments.

			DPD (December 2011). The Council is working on an entirely new, comprehensive Local Plan which will replace the Core Strategy, not simply a review.	
	Q1	18	Neighbourhood Plans are being developed for the parishes of Walkeringham and Misterton, adjoining the northern sections of the Trent within Bassetlaw.	Noted. Added to bullet points & Q1 box.
	4.4.2	26	Selby is not within the Sheffield City Region.	Noted. Text amended.
	Appendix 1	22	The Bassetlaw Landscape Character Assessment (2009) is a background document that informs planning policy (Core Strategy Policy DM9). Although the assessment refers to 'Policy Zones' it is not regarded as a policy document in its own right.	Additional wording added to reflect comment.
North Lincolnshire Council	General comments	General	<p>The Assessment Criteria is thorough, covering a large range of topic areas as is to be expected on such a document covering a very large area. It is noted that the Scoping report is 158 pages and these comments do not address every single page because of time limitations and the coverage of a large number of topic areas.</p> <p>It is clear from the telecom of 9th January 2018 with Jenny and some of the partners that comments should concentrate on Assessment Criteria, Plan and Review (Policy) and Topics to be scoped (in and out). It is also clear from this meeting that the nature of a SA is that topics can be scoped in and out throughout its process of running concurrent to the actual formulation of the Comprehensive Review (CR). This is also the case for SA/SEA for Local Plan making. So it is assumed that if a topic area arises that has not been initially covered by the original scoping it can still be addressed appropriately at any given time during the CR?</p> <p>The consideration of how economic growth and financial support to fund flood projects within the HFRMS has always been a bone of contention in terms of addressing how growth and funding can best be applied in terms of individual local authority areas. NLC therefore supports this new approach (as different from the HFRMS 2008) and it is expected that as it states in the paper "clear routes through which LAs, LEPs and other stakeholders with</p>	<p>Noted. This consultation was an opportunity for the stakeholders to raise or suggest changes to the Scoping Report, including topics to scope in or to scope out. There will be opportunities in the future to scope in/ out where this is justified with evidence, for example change in assessment methods or new data.</p> <p>Comments on economic growth and funding 'framework' were shared for consideration for the appraisal work outside the SA.</p>

		<p>economic/growth expertise will provide the growth data/information/analysis/and engagement outputs needed" and NLC supports a paper to be produced on a 'framework' for partner activity on this topic (proposed to be covered in Stage 4 of the process).</p>	
<p>Paragraph 1.2</p>	<p>1</p>	<p>"The Review will update the existing strategy in light of additional information following the 2013 tidal surge, improved understanding about the estuary and its behaviour, and key changes in the way flood risk management is administered and funded."</p> <p>NLC request that although the topic of Managed Realignment is referred to in the Scoping Report there is an absence of a reference to a 'Managed Adaptive Approach (MAA)' and this should be addressed in the Scoping Report. MAA is covered in the February 2016 Planning Flood Guidance and is followed up in DEFRA's own guidance that followed its production. NLC has been in considerable discussion with the EA (Morgan Wray and David Woolley Nottingham office) in terms of potentially applying a MAA to the River Trent. One of the main reasons for extending the boundary of the HFRMS to Gainsborough along the Trent has been because of flood investigation instigated by NLC (in partnership with the EA) in terms of the proposed Lincolnshire Lakes development (6000 dwellings plus infrastructure improvement and community facilities/amenities) west of Scunthorpe along the Trent Valley, but applying a MAA will be a much bigger subject in terms of all the land (including Trentside Villages and agricultural land (mostly of best quality) along the Trent between Gainsborough and the confluence of the Trent with the Humber.</p> <p>In NLC's experience so far with these discussions it is likely that a MAA will have to relate to separate epochs up to the existing planned time for development and flooding of 2115. Also from our discussions it is clear that Catchment Flood Management Plans</p>	<p>Noted. Guidance reviewed. Added reference to the Strategy being flexible due to the changing environment, climate and funding policies and that the decisions for investment in FCERM will be based on trigger points.</p>

		<p>produced by the EA have been at a much higher strategic level and not useful in terms of applying finance in relation to future management and have not been helpful in actually addressing the delivery of the necessary management projects on the ground. It is hoped that in addressing the funding of projects in the CR that more certainty can be given to what projects need to be carried out and how will they be funded – issues that are not covered in Catchment Flood Management Plans.</p>	
	<p>Paragraph 1.2</p>	<p>It is also noted that paragraph 1.2 states that the CR “will also cover a larger study area than the existing strategy: adding the extremity of tidally-dominant flooding further upstream in the Rivers Ouse, Aire, Don and Trent (see Section 1.3).” Paragraph 1.3 explains the latest position on the extended HFRMS boundary and suggests that discussions are “ongoing” as follows: “At the time of writing, discussions relating to the Strategy’s study area boundary were ongoing, but were indicating that these may be concluded shortly and the confirmed study area boundary will be used to update this Scoping Report with new baseline information after this consultation.” Paragraph 2.1 under Methodology seems also to doubt that the new boundary amendment is not yet fixed. It states: “For the purposes of the Scoping Report, it will initially adopt the new Strategy study area (see Section 1.3) comprising the area of tidally-dominant flooding around the Humber Estuary, including the lower reaches of the Rivers Ouse, Aire, Don and Trent.” And concludes: “Therefore, a review of the SA study area will be undertaken as the parallel studies develop and findings emerge, and modified for later stages of the SA accordingly if impacts are anticipated outside the Strategy study area.”</p> <p>The way these paragraphs read is confusing and is of concern to NLC particularly in reference to the boundary extension along the Trent. Discussions/meetings between the EA and partners in the</p>	<p>Noted. Revised Strategy boundary is being agreed. Sections 1.2 and 1.3 will be updated based on this revision.</p> <p>The SA study area, however, is different to the Strategy boundary as the effects of Strategy intervention on environmental features might go beyond this area. Section 2.1 is worded to reflect this aspect - no change to section 2.1 is proposed.</p>

		<p>past 18 months/2 years have taken place and it is NLC's understanding that the reasons for boundary extension culminating in actual agreement on where the boundary should be extended to along the Trent needs no more discussion. It is hoped that, as explained above in this comment, that the boundary extension along the Trent from Keadby Bridge to Gainsborough has been agreed and accepted by the HFRMS partners! NLC wish confirmation on this point? It is appreciated that the HFRMS CR SA Scoping Document has to get widespread support from its official process, including data to support the extended boundary and, the change of boundary is a significant amendment, but it is understood that many of the partners, including the new LAs, have already assessed the amended boundary and are agreeable to it. A great deal of flood modelling has been carried out by NLC's consultants Mott MacDonald in relation to the Lincolnshire Lakes and the consequences of the assessment of the flood compartment within the Lincolnshire Lakes has proved a consequential link upstream to tidal Trent at Gainsborough (see comment above in relation to a reference to a MAA being required along this part of the Trent). NLC will assist in providing such data should it be requested. It maybe that the words in paragraphs 1.3 and 2.1 have been left in from pre-agreement and not been updated, but for whatever reason NLC request that paragraph 1.3 be updated to reflect the current position of the HFRMS partners in terms of the boundary amendment.</p>	
1.4		<p>Paragraph 1.4 does not make reference to the River Ancholme that enters the Humber at South Ferriby, but it is noted that Figure 1 showing the new HFRMS CR boundary includes a substantial area of the floodplain of the River Ancholme as far inland as where the river rises near Market Rasen. This paragraph makes reference to other main rivers that flow into the Humber, but NLC consider that the River Ancholme is of high significance to the NLC area and the HFRMS. The tidal flood compartments have consequences to land and development at least as far inland as the M180 and the</p>	<p>Reference to the rivers is made in section 1.3 (and not 1.4 as indicated) and has been amended to include reference to the River Ancholme.</p>

		<p>market town of Brigg. The improvement to the A1077 and the tidal defences at South Ferriby between Winteringham Ings and the South Ferriby cliffs is a current project (not started) that is ongoing in terms of investigation by the EA (Mark Adams), NLC and relevant Parish Councils. Flood assessment, so far, has revealed that the flood defences of the Humber and Ancholme benefit land, infrastructure, settlements and development as far inland as stated above. It is clear that the tidal flood compartments of the River Ancholme shown in the HFRMS 2008 are not extensive enough as current evidence shows a greater tidal influence inland. NLC therefore request that reference be made to the River Ancholme in the list of main rivers flowing into the Humber.</p>	
General/local plan		<p>NLC will provide necessary data as appropriate to the CR as requested but wish to highlight the point of ongoing plans and strategies. Other LAs may be in the same situation as to future planning of growth and development. NLC currently have a planned strategy for growth as reflected in existing Development Plans and associated evidence base that has to be continually updated. Many of these documents can be accessed by referencing the NLC web site. However, a point raised in the telecon was that NLC are currently progressing a New North Lincolnshire Local Plan and the Issues and options stage is likely to be reached by Spring 2018, but the preferred option stage is not programmed until after the Local Elections in May 2019. The programme for the HFRMS CR is to get SoS approval by mid-2019. It will be important to make sure that whatever data is known from the New NLLP (and can be released) and is relevant to the CR process is assessed as appropriate to future growth and development in the NLC area.</p>	<p>Noted. NLC are encouraged to update the EA and provide them with the Local Plan GIS layers, when they are at an appropriate stage to share - and indicate whether they should be treated as 'draft' version.</p>
		<p>It is further emphasised that there are many strategies and plans within LAs that relate to the growth and development agendas that have to be scoped and assessed in any Local Plan process and Local Plan evidence documents tend to be a good source of data, subject to how up to date they will be. As an example of this point</p>	<p>Noted. Comments shared for consideration for the appraisal work outside the SA.</p>

		<p>the telecom discussion mentioned the current Humber Landscape investment Study, Local and National Landscape Character Assessments and Green Infrastructure Strategies. In addition, LAs have economic strategies that don't stand still and LAs have to address the housing issue high up on the Government agenda.</p> <p>It should also be noted that new guidance has been issued in relation to all Local Plans will have to be reviewed every 5 years. All these points will be important in terms of how they may synergise with the HFRMS CR. The flood projects within the HFRMS CR will have to be regularly reviewed in line with any Local Plan Reviews (in line with future political/public choices for growth and development). The Economic Overview paper clearly alludes to these points in the Key Assumptions section, particularly in addition to growth and development being aligned to national policy but that "assumptions will need to be made regarding how future currently undefined growth will be addressed within the Strategy, how often the Strategy will be reviewed and how the outputs of the Review will be incorporated within other strategies within the Humber."</p>	
	<p>Section 2</p>	<p>Whilst it is understood from the methodology listed in section 2 that there will be "long listed options" presented from the big strategic options (after assessment of WFD, River Basin Management etc) and "short listed options" (Local Plan SAs/SEAs, Local Economic Strategies etc) presented after applying the assessment of the long listed options, the "expert judgement" to be applied and converted into a scoring mechanism will be significant to each LA in terms of listing project preferences, including ruling out projects. This issue was raised in the recent SA Scoping telecon and was discussed at a recent Humber Officers Group meeting and NLC understand that there will be SA appraisal workshops arranged in February/March 2018 to progress this issue. The existing criteria for projects should be reviewed plus new ideas leading to a robust system for appraising the scoring so that</p>	<p>Noted.</p>

			all views can be adequately considered. NLC consider this as a crucial issue to be resolved.	
	General conclusion		<p>It is clear that the Strategic Flood Risk Assessment for North and North East Lincolnshire 2011 (joint document - currently going through an update process not involving new flood modelling) will require a comprehensive review after the HFRMS CR has been approved. The new flood modelling in respect of the HFRMS will be substantial and significant to a SFRA Review and NLC request that when that data is available it can be accessed and used for a SFRA comprehensive review as relevant.</p> <p>In conclusion, it is clear that there is still much work to be done and agreement between partners to be achieved. The new economic approach and additional partners in relation to the HFRMS CR boundary changes makes the existing timetable for the completion of the Review very challenging and NLC will assist where relevant and possible to help achieve the current timetable. NLC is currently trying to arrange a date for a EA/NLC liaison meeting (offered by the EA for each LA in the study area) to provide a bespoke update, and to understand local priorities and issues that need to be considered within the HFRMS.</p>	<p>Noted. No change.</p> <p>Comments shared for consideration for the appraisal work outside the SA.</p>
Natural England *page no from page counter at top of page to account for appendices etc*	Acronyms and abbreviations	9 and throughout the document.	<p>Have you checked that the references to sections of the Habitats Regulations have been amended in line with 2017 updates to the Habitats Regulations?</p> <p>New name: The Conservation of Habitats and Species Regulations 2017.</p>	Noted. Amended.
	1.4.2	18	Ref to Flamborough Head to Gibraltar Point SMP (Wilson 2010), should this be (ScottWilson 2010)?	Noted. Amended.
	3.4	34	<p>Consultation question</p> <p>Q1: Are there any other policies, plans or programmes (PPPs) that contain environmental protection objectives, economic and social objectives or identify issues that are not covered by this PPP review</p>	Reviewed the suggested documents, added to Appendix 1 and added to summary in section 3.2.

		<p>(see full list of reviewed policies in Appendix 1)? Are there any local plans, such as Neighbourhood Plans, that could fall within the study area?</p> <p>NE response: Marine and Coastal Access Act 2009</p> <p>A Green Future: Government’s 25 Year Plan to Improve the Environment.</p> <p>These all need adding into the relevant appendices.</p>	
4.2 Access and recreation	38	<p>England Coastal Path, existing wording:</p> <p>Within the study area, the proposed route runs along part of the estuary edge, starting from Spurn on the north bank to the Humber bridge and on the south bank to Cleethorpes and to the whole of South Humber bank from east to Humber Bridge.</p> <p>Suggested wording:</p> <p><i>Within the study area, the proposed England Coast Path runs mainly along the edge of the estuary, with some inland diversions to avoid operational ports. The stretches encompassing the Humber Estuary start at Easington on the north bank, running westwards to Hessle, across the Humber Bridge and then eastwards along the south bank to Mablethorpe. The path will roll back in response to coastal erosion events or to reflect future changes to the coast due to managed realignment. The England Coast Path is designed to provide access on foot only. The route of the path and any restrictions applied to access will address impacts to the Humber Estuary designated site, alongside any mitigation measures that may be implemented.</i></p>	Noted. Amended.
4.2	38	<p>Humber Landscape and Investment Study (SheilsFlynn 2016?)</p> <p>Change name of consultancy and document and add date (a number places within the document).</p>	No date was available on the report. EA to advice on the date. Publisher is recorded as Cambridge Studios. Reference has been updated to include Sheils Flynn in brackets for ease of identification.

4.2	39	<p>Current text: Development intervention should take a holistic view of access and recreation along with impact on biodiversity as this will be crucial to maintain nature designations in the study area.</p> <p>NE suggest rewording, I'm not sure what is the main point, is it about incorporating access and recreation into new developments or managing the impact of access and recreation on biodiversity?</p>	<p>Noted. Replaced word 'development' with 'Strategy'. The aim is to consider impacts of access, for example dog walking, on biodiversity and that Strategy options be aware of these consequences.</p>
4.2	39	<p>Current text: Local communities may access inter-tidal or coastal areas to undertake traditional activities such as foraging, these may not always be formal access and are often facilitated by the presence of existing flood defences.</p> <p>Access may also be restricted or managed by the presence of flood defences as well as being facilitated, suggest amending the wording.</p>	<p>Noted. No change. The text highlights potential 'informal' use of existing defences by the local population and this may not always be managed or restricted. The point to note is consideration of whether the Strategy option alter these 'informal' practices.</p>
4.2	39	<p>Current text: Access for local communities, formal and informal may interfere with planned intervention, including flood risk management which must be considered in the Strategy and the SA.</p> <p>NE comment: would this be better worded as: Flood risk management measures may impact on formal or informal access to the estuary and this should be considered within the strategy development.</p>	<p>Noted. Text amended.</p>
4.3.3	40	<p>Current text: The England Coast Path, delivered by Natural England to fulfil the Marine and Coastal Access Act, is likely to increase interest in nature tourism. If not managed carefully, ongoing tourism activities combined with potential nature tourism related activities could cause damage to important estuarine habitats and species.</p>	<p>Noted. Amended.</p>

		<p>The Humber Nature Partnership's Humber Recreation Management Plan (Humber Nature Partnership, 2016) draws recreation management zones around the Humber Estuary and emphasises the need to balance tourism economic potential with the impact on the many designated features in the study area.</p> <p>Suggested text:</p> <p>The England Coast Path, delivered by Natural England, will form a National Trail around the coast of England, with the aim of bringing economic and health benefits to both visitors and coastal communities. As nature tourism to the Humber increases, careful management will be utilised- both as a part of the formal coastal access proposals and through partnership working with local stakeholders and local access authorities in order to ensure that important estuarine habitats and species are protected.</p> <p>The Humber Nature Partnership's Humber Recreation Management Plan (Humber Nature Partnership, 2016) proposes recreation management zones around the Humber Estuary and emphasises the need to balance tourism economic potential with the impact on the many designated features in the study area.</p>	
4.5.4	43	<p>Bioeconomy is an evolving concept and the Yorkshire and the Humber region already contributes to 10 % of the country's bioeconomy (BioVale, n.d.).</p> <p>Comment: can you explain what 'bioeconomy' is please?</p>	Noted. Explanation included in the glossary section.
4.6.2	46	<p>Current text:</p> <p>The study area includes areas safeguarded areas for future mineral extraction. East Riding of Yorkshire's geology (salt) is a limited but suitable location to build gas storage caverns to enable underground storage of gas.</p> <p>Text needs amending, currently appears to indicate that the whole of East Riding's geology is salt.</p>	Noted. Text amended.

			E.g.East Riding’s salt deposits, once they are mined represent suitable locations for the underground storage of gas.	
5.1.1	47	Current text: These sites often overlap and are dependent on each other in order to maintain their designations. Suggest: Some areas have overlapping designations, including all of the Humber Estuary intertidal and subtidal areas.		Noted. Text amended.
5.1.2	48	Mention wildlife trust nature reserves (and mark on the map in the appendix). Yorkshire, Lincolnshire, Nottinghamshire etc.		Additional text added and local nature conservation sites have been included on the Appendix map (where available from open source and data supplied by Partner Local Planning Authorities).
5.1	48	Important biodiversity also exists outside designated sites such as protected species, farmland bird populations (areas around the Humber are important for the latter).		Additional text added.
5.3.1	52	5.3 Geomorphology NE advise that geology and soils should be included within this section. Current text: The Humber is surrounded by extensive intertidal areas covering approximately 45,500ha of... Suggest: The Humber includes extensive intertidal areas....		Elements are included in the context of agricultural land use management, and geomorphological processes. Soil is discussed in the context of 'soil erosion' from agricultural grade land and in the context of contamination, in sections 4.5.2 and 5.7, respectively and they are considered appropriate for a high-level SA. Detailed information, at a local level, will be required to predict the impact of flood risk management intervention on geology or soils. For this reason, Geology and Soils are scoped- out and no change is proposed.

5.3.2	53	<p>Current text:</p> <p>The high concentrations of suspended sediment are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast.</p> <p>Suggest:</p> <p>The high concentrations of suspended sediment are derived from a variety of sources, but fine sediment eroded from the boulder clay cliffs on the Holderness coast are the most significant.</p>	Noted and amended.
5.3.2	53	<p>Suggest mentioning the movement of the main channels within the estuary in this section.</p>	Noted. Amended text in section 5.3.2.
5.4.1	54	<p>Current wording:</p> <p>The landscape in the study area is characterised by 11 National Character Area (NCA)13 profiles:</p> <p>Suggest:</p> <p>The landscape in the study area is characterised by 11 National Character Areas (NCA)13:</p>	Noted; text amended.
5.4.2	54	<p>Current wording:</p> <p>No other landscape designations are found on the site, but the Lincolnshire Wolds' Area of Outstanding Natural Beauty (AONB), a statutory designation, is immediately south of the study area on account of its high scenic beauty.</p> <p>Suggest:</p> <p>No other landscape designations are found within the study area, but the Lincolnshire Wolds, to the south of the study area, is designated as an Area of Outstanding Natural Beauty (AONB) on account of its high scenic beauty.</p>	Amended.
5.7	58	<p>Q2: Are there any other issues or information related to the topics covered in sections 4 and 5 relevant to the study area? Are there any missing topics to consider?</p>	Noted.

		NE response: all comments set out above.	
Table 5.1	60	<p>Suggest that geology and soils would sit better in the geomorphology section rather than rural land use. Geology strongly linked to geomorphology, so this will be relevant to the strategy (scoped in).</p> <p>Soils can also be affected if significant areas are identified for flood storage (for instance).</p>	<p>Noted. No change.</p> <p>Soils are considered in the context of agricultural land use management and geomorphological process (for example, sedimentation) in the respective sections as well as in the SA Framework.</p>
Table 5.1	60	<p>Landscape change to 'Landscape and visual impacts'</p> <p>Visual impacts: barrier options could have significant impacts on local views, consider scoping in visual impacts.</p>	<p>Noted. Amended 'scoped in' text to include 'local character' that could be significantly affected by flood risk management decisions. This will cover visual impact from options such as the barriers or new, very high defence walls. For those options that propose incremental change, they will be considered less likely to be significant and would be assessed at a detailed level by projects' EIA, therefore scoped out.</p>
		<p>Consultation question</p> <p>Q3. Do the SA objectives provide a reasonable framework through which the likely significant social, economic and environmental effects of the strategy are assessed? Are there any other indicators which are relevant to the strategy?</p> <p>NE response is set out in our comments on table 6.2 below.</p>	<p>Noted.</p>
Table 6.2	From page 63	<p>General comment:</p> <p>Will the option affect...?</p> <p>Needs to be clear whether talking about positive or negative effect otherwise it will be difficult to score.</p> <p>Change to 'Will the option adversely affect...?'</p> <p>Also 'will the option increase or reduce the likelihood..?'</p> <p>Change to 'Will the option increase the likelihood..?'</p>	<p>Noted. No change as the appraisal is intended to take a neutral position and be open to assess both positive and negative effects, and the scoring system enables it to be scored as positive or negative.</p>

Table 6.2	67	<p>Biodiversity:</p> <p>Current wording:</p> <p>Will the option manage tidal flood risk to prevent deterioration to and/or enhance international and nationally important habitats and species?</p> <p>Suggested wording:</p> <p>Will the option manage tidal flood risk in a way which facilitates enhancement (or prevents deterioration) of international and nationally important habitats and species?</p> <p>Indicators: use the conservation objectives for N2K sites or Favourable Condition Tables in development) for SSSIs. The interest features won't change as a result of delivery of the strategy.</p> <p>Also use these indicators for the criteria related to climate change resilience.</p>		Noted. Amended wording.
Table 6.2	67	<p>Biodiversity:</p> <p>Current wording:</p> <p>Will the option manage tidal flood risk and/or enhance regional or locally important habitats and species (such as BAP)?</p> <p>Suggested wording:</p> <p>Will the option manage tidal flood risk in a way which enhances regional or locally important habitats and species (such as BAP)?</p>		Noted. Amended wording.
Table 6.2	68	Geomorphology		Amended objective using this wording.

		<p>Current wording:</p> <p>To manage or improve estuarine geomorphological processes.</p> <p>Clarify the objective, suggested wording:</p> <p>To facilitate natural estuarine geomorphological processes.</p> <p>Indicators: monitor erosion, deposition and channel movements.</p>	<p>Revised the indicator to reflect suggested change.</p>
Table 6.2	69	<p>Landscape character:</p> <p>Current objective:</p> <p>To retain key features of the landscape character.</p> <p>Suggested criteria:</p> <p>To maintain and enhance the landscape character.</p> <p>Current criteria:</p> <p>Will the option manage tidal flood risks to the landscape character of the area and/or contribute to maintain or enhance the landscape character?</p> <p>Suggested criteria:</p> <p>Will the option maintain or enhance the landscape character?</p> <p>Indicators: landscape character descriptions won't indicate changes to landscape.</p> <p>Delivery of NCA opportunities could be used as an indicator.</p>	<p>Noted. Text amended in Table 6.2.</p> <p>Noted. Amended the indicators.</p>
Table 6.2	70	<p>Climate change:</p> <p>Current criteria:</p> <p>Will the option allow sufficient time adaptation/ relocation of utilities/ critical infrastructure, for example water treatment plants or wastewater treatment plants?</p>	<p>Noted. Amended text as per suggestion.</p>

		<p>Is this about allowing time or about providing clear information so that infrastructure businesses can make their own decisions? This will include timescales, but also water depths etc. Also applies to other criteria related to communities and businesses.</p> <p>Suggested wording:</p> <p>Will the option provide sufficient information (including timescales) to allow infrastructure to be relocated or adapted to climate change?</p>	
		<p>Consultation questions</p> <p>Q4 Are there any other potential conflicts between the proposed SA objectives and the Strategy objectives that have not been identified in the compatibility assessment?</p> <p>How could potential conflicts be addressed?</p> <p>NE response:</p> <p>Strategy objective 3: difficult to assessment compatibility with SA objectives, is the priority aligning with economic growth programmes or delivering the most sustainable approach to flood risk?</p>	Noted. No change.
7.2	74	<p>Summary Questions for Consultees</p> <p>Not sure that all these questions are present within the document, are they supposed to be?</p>	The questions duplicate those that appear at the end of each section - for ease of reference to the reader.
Fig 9	135	<p>Existing and proposed mineral sites:</p> <p>East Riding data missing.</p>	Data received from East Riding Yorkshire, and updated maps accordingly.
Fig11	137	<p>Figure shows 'non-designated sites'. Suggest 'other nature conservation sites.' Most NNR's are also designated sites so not accurate to say that they area 'non-designated'.</p> <p>What about local wildlife sites in East Riding?</p>	<p>Noted.</p> <p>Requested 'local' wildlife sites as well as those identified by charities such as Wildlife Trust from all relevant local authorities.</p>

			Are wildlife trust nature reserves marked on? Doesn't seem to be much in YWT area.	
	Fig 14	140	Figure shows National Character Areas not Landscape Character Areas. AONB stands for Area of Outstanding Natural Beauty (key needs correcting)	Noted. Map amended.
North East Lincolnshire Council	6.2	44	Biodiversity – Recognition needs to be made of the habitat mitigation sites being delivered across the South Humber Bank. These sites provide appropriate mitigation for roosting SPA birds to enable to development of employment sites. In North East Lincolnshire these sites cover a combined area of circa 128ha. A number of these sites are located in fields which are positioned adjacent to the existing flood defences. The wording of NPPF para 118 should be noted which emphasizes sites identified, or required, as compensatory measures for adverse effects on European sites, ...should be given the same protection as European Sites Detail of the sites and further background info can be found under local plan policy 6 Habitat Mitigation – South Humber Bank	Noted. Request for data from planning authorities made in February 2018 and all data set responses that were received has been used to update this section and Appendix 2 Map 11.
	Appendix 1.1 Local Plans	1.28	Based upon the published mods to the local plan Policy 1 will be deleted Policy 6 Habitat Mitigation South Humber Bank should be included	Noted.
Humber LEP			I suppose the main comment is that the importance of the 'Energy Estuary' idea for the future of the Humber economy is somewhat underrepresented. Elements like the offshore wind sector anchor that economic opportunity to this geography and as such the ability to maximise this economic opportunity is dependent on the ability to provide sites which will have reduced flooding risk. This is a key element which will come out of our nascent Humber Industrial Strategy.	Noted. Text added in section 4.3.1

			Another point is really around making sure expansion of existing indigenous companies is facilitated and considered within the Sustainability Appraisal Framework.	Noted. Amended text in the SA Framework.
	4.3	23	I would be minded to reword the first section "The key economic sectors in the Humber can be classified as Manufacturing, shipping and logistics, energy production and agriculture and fisheries. "	Noted. Amended text.
	4.3.2	24	I would note that although GVA continues to lag behind national levels, the most up to date information covering 2016 is beginning to suggest that this gap is closing between the Humber and the rest of England.	Noted. Text amended.
	4.5.4.	27	"...contributes to 10% of the country;s bioeconomy (Bio Vale n.d.) including large scale industrial processes such as the production of biofuel at Vivergo Fuels at Saltend. "	Noted. Text amended.
	4.5.4.	28	1 st bullet – yes but it is very much down to government commitment to biofuels – not a given at this point in time!	Noted. Amended text to reflect the comment.
	4.6.1	29	Transport – Goole also provides a key interface between rail, road, the Humber Estuary and the inland water way network west to Leeds. The Goole Intermodel Project which has received LEP endorsement will help to facilitate a greater use of inland waterway.	Noted. Text added
	4.6.1	29	Hospitals, Power Stations, utilities – Humber is the landing area for a large amount of offshore wind.	Noted. Text added to state that offshore wind energy (power stations) to suggest this may form part of critical infrastructure.
	6.6	49	Criteria – Will the option have an impact on inward investment and large scale indigenous business growth in the study area?	Noted. Text added. Comments shared for consideration for the appraisal work outside the SA.
North Yorkshire County Council	General	n/a	In general, the approach to the SA outlined in the scoping report appears sensible and logical and in accordance with best practice. However, it would also be useful to consider the content of the recently updated RTPi SEA guidance. http://www.rtpi.org.uk/knowledge/practice/sea/	Noted.

	Section 2.4	9 - 10	<p>The proposed aspects and descriptors in table 2 are appropriate. However, it would be advisable to consider an expansion of the significance rating to provide 3 rating scales i.e. minor moderate and major significance rather than the two proposed in table 3. This would provide greater scope for differentiating between the merits of possible options at later SA stages. However, it is possible to make such changes at a later stage in the SA process should it be determined to be necessary.</p>	<p>Noted. No change as the five-scale rating has been tested and used in many Local Plan SAs and FRMS SA/SEAs. Team to consider using a Red, Amber, Green (RAG) coding.</p>
	Section 2.4.2	10	<p>The proposed approach in section is acceptable but subject to the effectiveness of its implementation at the preferred option stage.</p>	<p>Noted.</p>
	Section 2.6	11	<p>It is advisable to consult with the Marine Management Organisation (MMO) on the Strategy Review and supporting document given the functions for marine plan production and marine licensing (below Mean High Water Springs (MHWS)).</p>	<p>Noted. Comments shared for consideration for the appraisal work outside the SA.</p>
	Section 2.8.1 and section 3	12 and 13	<p>The Conservation (Natural Habitats &c.) (Amendment) (England) Regulations 2000 should be replaced by the Conservation of Habitats and Species Regulations 2017.</p>	<p>Amended.</p>
	Section 3 and Appendix 1		<p>Please see below the proposed updates / amendments required to plans or projects already identified, and additional plans / projects not already identified in the scoping document:</p> <ul style="list-style-type: none"> - The latest version of the YNYER LEP's SEP is the 2016 Update. It is also worth noting that the LEP has commenced work on developing an Energy Strategy – this is still at an early stage, but it could be relevant to the Humber Strategy study area. This may also be relevant to Section 4.4.2 - Local Authority Plans should include the North Yorkshire, City of York Council and North York Moors National Park Minerals and Waste Joint Plan. It is noted that this Plan is captured in Appendix 1. The Joint Plan was submitted to the Planning Inspectorate for examination in Nov 2017, with the examination scheduled to be conducted Feb / Mar 2018 	<p>Amended YNYER LEP SEP date.</p>

		<ul style="list-style-type: none"> - NYCC is the Lead Local Flood Authority for the County. Relevant documents that have prepared appear to have been omitted, including the North Yorkshire Local Flood Risk Strategy and NYCC SUDS Design Guidance. This may also be relevant to Section 1.4.2 - NYCC Council Plan needs updating to the 2017-2021 - There are a number of other NYCC documents that could be included including Key Strategies, Plan and Policies. The Plan for Economic Growth 2017, Joint Health and Wellbeing Strategy 2015 – 2022, Local Transport Plan LTP 4, Municipal Waste Management Strategy 2006 - 2026 are likely to be of particular relevance. NYCC has also developed a Strategic Transport Prospectus (this could be relevant to Section 4.6.1) - Consider including recently published Government Strategies including the Industrial Strategy, Clean Growth Strategy, and the Defra 25 year Environment Plan - Consider including Marine Strategy Framework Directive - Consider including the OSPAR Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic) particularly with regards to management and possible disposal of marine and estuarine sediments - Consider recent and future leasing rounds including BEIS Offshore Strategic Environmental Assessment 3 for offshore energy and 14th Onshore Oil and Gas Licensing Round which links to strategic economic growth and investment 	
Section 4.4.2	26	The SA states that the Selby is situated within the Sheffield Region Local Enterprise Partnership (LEP) area. We are however of the opinion that Selby District is within the Leeds City Region LEP and North Yorks & East Riding LEP areas.	Noted. Amended text.
Section 5		There should be an inclusion and consideration of Sites of Importance for Nature Conservation (SINCs). The Holderness inshore Marine Conservation Zones should also be considered at	Amended SINCs and included MCZs on the maps.

		least in the first instance and ensure that tranche 3 of MCZs designations are appraised during the review process.	
Section 5		It is advisable consider compensatory habitat within the plan area which has been identified through previous regulatory decisions (e.g. the Secretary of State’s decision to grant deployment consent for Able Marine Park). It is noted that this would need to be considered in more detail as part of the HRA process.	Noted. See response to Natural England on updating the text and requesting this data from planning authorities.
Table 6.2	51 and 52	SA Objective 6 – this should also include the requirement to increase connectivity between sites. SA objective 8 – it is not clear what is meant management or improvement of geomorphological processes e.g. what does an improvement of geomorphology look like? This is not clearly set out within the scoping document.	Noted. This will be covered by the wording ‘ecological corridor’. Noted. See response to Natural England on revising this objective
Table 6.2		The effectiveness of the monitoring needs to be considered further and potentially revised through the plan / SA process. It is important that the effectiveness of the indicators used to monitor the strategy so far are considered when determining future indicators and monitoring approaches. The new DEFRA 25 Year Environment Plan and the Natural Capital approach should be considered. This comments on the indicators include: <ul style="list-style-type: none"> - SA objective 1 - how is risk to life measured? The standards of protection and the number of proprietries (perhaps including businesses) within the functional floodplain may be a better measure. - SA objective 2 – alteration of the lengths of footpaths might be unrelated to the implementation of the plan but due to other external factors. It also doesn’t consider the value including (importance/ quality / usage) of paths, recreational amenities etc. - SA objective 3 – New Business Formation Rates is potentially difficult to attribute directly to the strategy. Is it intended that 	Noted. Comments shared for consideration for the appraisal work outside the SA.

			<p>this will focus on new businesses in areas newly protected as a result of measures from direct implementation of the strategy?</p> <ul style="list-style-type: none"> - SA objective 3 and 4 – no. days of agricultural land flooded might need to be reconsidered in light of emerging proposals for replacing the Common Agricultural Policy after Brexit, whereby landowners including farmers are paid for providing public services including Natural Flood Management and reconnecting watercourses to floodplains. 	
	6.7.3	56	<p>It is agreed that there is no conflict between the objective and SA objectives. However, there are some areas where there is a connection which wasn't been identified including:</p> <ul style="list-style-type: none"> - Strategy Objective 1. & SA Objective 5 – the flood risk management and supported operations and maintenance of assets are linked but compatible. This is the same with SA Objective 8 - Strategy Objective 5. & SA Objective 6 - conservation and enhancement of biodiversity and the adherence to principles of sustainable development is also linked to economic growth (but compatible) - Strategy Objective 8. & SA Objective 1- reviewing the strategy following significant flooding events is linked to managing risks of flooding / human health. Similarly SA Objective 11 is linked and compatible with climate change. 	Noted. Text added to section 6.7.3.
East Riding of Yorkshire Council	Whole document	Whole document	As this report will be the first of many published documents, and given that branding has been produced and shown at the OG, we suggest badging up the report from the HSCR group. At present this is a generic Environment Agency report.	The branding will be approved in time for formatting the post-consultation version.
	Whole document	Whole document	The document as a whole requires proof-reading for spelling, grammar and formatting. In particular, page numbers restart after Figure 1.	Noted.

	<p>Whole document</p>	<p>Whole document</p>	<p>The NPPF, paragraph 6, states that ‘The purpose of the planning system is to contribute to the achievement of sustainable development’. Paragraph 7 states that ‘There are 3 dimensions to sustainable development: economic, social and environmental.’ Therefore all of the policies in the East Riding Local Plan relate to environmental protection, the economy and/or social objectives, not just those listed. All policies in the East Riding Local Plan that are applicable to the study area should be listed, including allocations. The key policies from the Strategy document that have been omitted include:</p> <ul style="list-style-type: none"> • Policy S1: Presumption in favour of sustainable development • Policy S2: Addressing Climate Change • Policy S3: Focusing Development • Policy S4: Supporting Development in Villages and the Countryside • Policy S5: Delivering Housing Development • Policy S6: Delivering Employment Land (policy is already included but the reasons for inclusion should be expanded. It sets out how the future needs of the economy will be met though the allocation of employment land across the East Riding.) • Policy EC1: Supporting the Growth and Diversification of the East Riding Economy • Policy EC2: Developing and Diversifying the Visitor Economy • Policy EC4: Enhancing Sustainable Transport • Policy C1: Providing Infrastructure and Facilities • Policy C2: Supporting Community Services and Facilities • Policy C3: Providing Public Open Space for Recreation and Leisure • Policy A1: Beverley and Central Sub-area • Policy A4: Goole & Humberhead Levels Sub Area • Policy A5: Holderness & Coastal Sub Area <p>As mentioned above these are the key missing policies but all Local Plan Policies are relevant to some degree. There seems to be</p>	<p>Noted. New text added in Appendix 1. Note that themes covered under Policy S1 and S2 are integral to the SA and the Strategy’s vision and objectives and are repetitive themes across all partner authorities, they have not been reviewed. Similarly, policies on sustainable transport, provision of infrastructure facilities, supporting community services, provision of public spaces are unlikely to directly impact or be impacted by the Strategy. Therefore, they have not been reviewed but the themes are relevant to the SA and have been included in the SA Framework.</p>
--	-----------------------	-----------------------	---	---

		<p>no consistency between what documents and policies are referred to for each Local Authority. For some local authorities Local Plan policies covering a wide range of topics/ objectives are included. For others, such as East Riding of Yorkshire Council, the list of policies is very narrow. Some consistency should be provided to ensure similar policies from all local authorities are considered.</p> <p>In addition, in the East Riding section none of the Local Plan evidence base has been referred to; the Strategic Flood Risk Assessment, Landscape Character Assessment, Infrastructure Study etc are not considered. These documents are referred to for other areas. It is reasonable that these could be relevant to the preparation of the Humber Strategy. The Local Plan evidence base is available at http://www2.eastriding.gov.uk/environment/planning-and-building-control/east-riding-local-plan/evidence-base/.</p> <p>The Council has also produced a number of flood risk strategies that are available at http://www2.eastriding.gov.uk/council/plans-and-policies/other-plans-and-policies-information/flood-risk/flood-risk-strategy/.</p>	
Glossary	VII	Make clear what the HESMP is and that it has been superseded by the Flamborough Head to Gibraltar Point Shoreline Management Plan (which should also be included in the glossary) and the HFRMS.	Amended.
Glossary	X	These are out of alphabetical order.	Amended.
1.2 Background to the Strategy	1	<p>No mention of the Humber Local Authorities bid to central government and the Defra response which was one of the main drivers for the HSCR. We suggest amending the text used in the Memorandum of Understanding (Section 2) for inclusion in this.</p> <p>The <i>Flood Defences Cost Money, No Flood Defences Cost More: An economic case for the Humber and United Kingdom</i> report should also be referenced in Section 3.</p>	Noted. New text added in Section 3.

			http://www2.eastriding.gov.uk/council/plans-and-policies/other-plans-and-policies-information/flood-risk/flood-risk-strategy/	
3.3.1 Flood & Coastal Erosion Risk Management Plans	14		The Humber Estuary SMP and Flamborough Head to Gibraltar Point SMP should be included separately, with a fuller explanation of the impact of the Flamborough Head to Gibraltar Point SMP on the HFRMS.	Noted. Section 3.3.1 edited.
Other Flood Risk Management Plans	15		The River Hull Integrated Catchment Strategy should be reviewed alongside these other documents.	Amended.
3.4 Key Messages	17		5 th bullet point: Masterplans can be prepared outside Area Action Plans. The East Riding Local Plan identifies a number of allocations where masterplans will be prepared as supplementary planning documents. Supplementary planning documents should also be considered when preparing the Strategy/ SA. The Council's SPDs are available at www.eastriding.gov.uk/spd .	Noted. As there are many SPDs and Neighbourhood plans developed by the Partner Local Authorities, it was considered appropriate to defer reference to these plans till site specific intervention is considered in the Strategy (potentially at the short-listing stage). However, allocations proposed in the Local Plan have been taken into account and represented in Appendix 2-6. No change to text proposed.
Consultation Question 1	18		No mention of ERYC's Local Flood Risk Management Strategy, 2015- 2027. Only Doncaster's included in the Appendix, so other LLFA's will also need to be included. Given that all RMAs must have regard to these statutory documents and their objectives and measures, they must be included. Find at link to ERYC's below: http://www2.eastriding.gov.uk/council/plans-and-policies/other-plans-and-policies-information/flood-risk/local-flood-risk-management-strategy/ Also consider Local Authority produced surface water and integrated studies. In ERYC's case the <i>Hull and Haltemprice (within the East Riding of Yorkshire) Flood Risk Management Plan (FRMP) 2015-2021</i> is a statutory requirement under the Flood Risk	Noted. Added to Q1 box.

			Regulations 2009. Whilst is majors on surface water ERYC's plan considers wider integrated sources including tidal risk.	
	Consultation Question 1	18	The Humber Management Scheme and Action Plan should be reviewed for environmental protection objectives.	Noted. Added to Q1 box.
	Consultation Question 1	18	The document does not refer to the East Riding of Yorkshire Rural Strategy (2016-2020). This is an East Riding of Yorkshire Council led and adopted Strategy. The Rural Strategy is cross cutting and is jointly developed and delivered with the East Riding of Yorkshire Rural Partnership. The Rural Strategy and Rural partnership present an avenue for this high level Flood Risk Management Strategy to engage with a wide range of rural interests at a catchment/local level.	Noted. Text added to Appendix 1.
	Consultation Question 1	18	Relevant adopted neighbourhood plans in the East Riding include Cottingham Neighbourhood Plan. There are also a number of Neighbourhood Plans in the East Riding that are under development. Neighbourhood Areas, the first stage in preparing a Neighbourhood Plan, have been set up in Barmby Moor, Allerthorpe, Hayton and Burnby, Howden, Market Weighton, North Cave, Pocklington, Skidby, Sutton Uppon Derwent, Wawne and Woodmansey. The town and parish councils are at various stages of preparing their plans. Some of these may be relevant to the Strategy/SA.	Inclusion of Neighbourhood Plans will be considered when modelling/ intervention details are made available, potentially at short list stage.
	4.4 Economic Growth and Inward Investment	25	The importance of the East/West multi-modal corridor, identified in the East Riding Local Plan, should be acknowledged for the economy and transport.	Noted. Comments shared for consideration for the appraisal work outside the SA.
	4.4.2 Strategic Economic Partnerships	25	Goole is also a location for regeneration. Please see links to Goole Renaissance partnership, http://www2.eastriding.gov.uk/council/working-with-our-partners/regeneration-and-renaissance-partnerships/goole/ .	Noted. Added text.

<p>4.6.2 Mineral Sites</p>	<p>29</p>	<p>The name of the Joint Minerals Plan For Kingston Upon Hull & East Riding of Yorkshire (2004) should be amended to reflect the correct name, as set out in this sentence.</p> <p>The Plan was prepared by Hull City Council and East Riding of Yorkshire Council. This should also be corrected.</p> <p>The new Joint Mineral Plan is expected to be adopted in late 2018 not 2017. The Council's Local Development Scheme, which sets out the proposed timetable, is available at http://www2.eastriding.gov.uk/environment/planning-and-building-control/east-riding-local-plan/local-development-scheme/</p>	<p>Amended.</p>
<p>5.1.1 Statutory designated features</p>	<p>31</p>	<p>The river profile is one of the features of the River Derwent SSSI & SAC. The Lower Derwent Valley is designated as an SAC for its floodplain meadows and as an SPA for its assemblage of breeding and wintering birds.</p>	<p>Additional text added.</p>
<p>5.2.1 Non-statutory designated features</p>	<p>32</p>	<p>The RSPB reserves are all part of the statutory designated features of the Humber SPA/SAC/SSSIs.</p> <p>The managed realignment sites were created under the Habitats Regs to compensate for impacts upon the statutory designations (SAC/SPA). Although they are not currently designated as statutory sites they receive the same level of protection under the Habitats Regs.</p> <p>There is no reference to priority habitats (of principal importance for the conservation of biodiversity)</p> <p>Although community involvement may be high on some non-statutory sites, some non-statutory sites are in private ownership with no community involvement.</p>	<p>Noted.</p> <p>GIS data was requested from partner councils on the habitat creation and managed realignment sites. Datasets received from the respondents (both prior to and after the SA Scoping report consultation) have been used to update Appendix 2 Map 11.</p>
<p>5.4.1 Landscape Character</p>	<p>37</p>	<p>East Riding of Yorkshire Council is in the process of preparing a new Landscape Character Assessment (LCA). It is likely that the new LCA will be published and available to support the development of the new Humber Strategy.</p>	<p>New text added.</p>

5.6 Climate Change	41	There is no mention of the work carried out by the Committee on Climate Change. They have carried out a number of 'Climate Change Risk Assessments' (CCRA) over the years and provided a number of reports to the Government; flooding is identified as a key risk. The CCRA should be included as a relevant document.	Noted. New text added.
5.7 Waste and contaminated land	42	The East Riding of Yorkshire Contaminated Land Inspection Strategy 2013-2018 could be reviewed alongside other documents	Noted. New text added.
4.5 Rural land use and rural economy	42	The future trend of land use and farming policy post Brexit is not fully explored. There could be major opportunities to more closely link future farm support to ecosystem services. The "menu" of stewardship options for farmers needs to be locally tailored to local needs at a landscape/catchment scale. There needs to be a mechanism to enable local stakeholders to influence how these options are developed.	Noted. The Environment Agency's position regarding this Strategy and Brexit is stated in Section 3.1.
6.2 / Table 5.1 Summary of issues scoped in and out...	43-45	The text relating to why some issues have been scoped out needs to be made consistent, where the reason for scoping out the issues are the same.	Noted. Text amended.
6.2 / Table 5.1 Summary of issues scoped in and out...	44	In the biodiversity section protected, rare and notable species are scoped out, but high level commentary on species is included in Priority habitats which are scoped in. This is potentially confusing and it would be clearer for the Priority habitats not to include species.	Noted. Priority habitats will be included but not species in the SA Framework (hence now scoped out). Species description in section 5.1 will remain unchanged as this information helps set the scene and will help the reader appreciate the issues in the study area.
6.6 The SA Framework	47-54	In general, the framework is thorough on environmental factors but limited on economic factors.	Noted.
6.6 The SA Framework	47	Topic 1: It is suggested that future housing developments is defined. Does it mean land allocated for housing use in a Local Plan plus land with extant planning permission?	Noted.

				It is the land allocated for housing as identified in the Local Plan (SA will use GIS layer supplied by the Local Authority).
6.6 The SA Framework	47	Topic 2: The Strategy/SA should consider the impact on the built character of the area, as well as the landscape character and impact on historic environment. Built character could be considered under place and communities.		Noted. No change. Built character will be covered as part of landscape character (which encompasses natural and man-made landscape).
6.6 The SA Framework	47-48	Topic 2: Additional indicators need to be developed to reflect the diversity of criteria within this topic.		Noted. These will be developed as SA and the Strategy progresses. Any suggestions to include indicators are welcome.
6.6 The SA Framework	49	Topic 3: It is suggested that proposed employment land is defined. Is it land allocated in a Local Plan plus land with extant planning permission?		Noted. It is the land allocated for employment as identified in the Local Plan (SA will use GIS layer supplied by the Local Authority).
6.6 The SA Framework	49	Topic 4: This section should include land uses other than agriculture (e.g. Nature tourism, water storage, etc.).		Noted. Urban land-use (and potential effects of options relating to water/ flood storage) will be covered in topics 1, 2 and 3. Topic 4 will cover rural land-use and the biodiversity topics will cover effects on natural features (including wetlands). Nature tourism is an activity, and the land-use that is linked to this activity will be covered by the land-use discussed above, hence no change is proposed.
6.6 / Table 6.2 SA Framework / 6. Biodiversity	51	The second criteria <i>Will the option manage tidal flood risk and/or enhance regional or locally important habitats and species (such as BAP) has potential indicators / monitoring information BAP objectives and targets, Habitats supporting protected species populations, wildlife corridors</i> BAP has not been referenced earlier in the Baseline section 5. The UK BAP and its targets are no longer supported by Government although habitats and species of <i>principal importance for the conservation of biodiversity</i> are listed in section 41 of the NERC		BAP was mentioned under section 5.1.2. However, reference to BAP has been deleted and replaced with reference to specific section of the NERC Act.

		<p>Act. <i>Habitats supporting protected species</i> is open to confusion, how is this defined? Is it the habitats or the species which are being monitored?</p> <p>Protected species have been scoped out in Section 6.2.</p> <p>Wildlife corridors should not be used as Potential Indicators / monitoring information as these have not been spatially defined or evaluated and are not referenced in relevant earlier section e.g. 5.1.2 Non-statutory designated features.</p>	<p>Noted. Reference to 'species' has been removed from the criterion against the biodiversity objective (Topic 6).</p> <p>Noted. Removed reference to wildlife corridors.</p>
Appendix 1	7	The Flamborough Head to Gibraltar Point Shoreline Management Plan should be included as a relevant sub-regional document.	Noted. A brief summary is presented in section 3.3.1 and added in Appendix 1.
Appendix 1 – Draft River Hull Integrated Catchment Strategy	12	<p>Remove 'Draft' from River Hull Integrated Catchment Strategy.</p> <p>Suggest addition to first sentence, "Agreed locally, this study provides..."</p>	Noted. Text amended.
Appendix 1 – Hull City Council Local Planning Documents	17-18	Hull and Humber Ports City Region Development Programme II is not only relevant to Hull.	Noted.
Appendix 1 – East Riding of Yorkshire Council Local Planning Documents	18-20	<p>Please identify the policies from the East Riding Local Plan correctly e.g.</p> <p>East Riding of Yorkshire Council, <i>East Riding Local Plan Strategy Document</i>, Policy S4: Supporting development in Villages and the Countryside (<i>new proposed text</i>)</p>	Noted. Text amended in Appendix 1.
Appendix 1 – East Riding of Yorkshire Council Local	18	A number of the policies in the Allocations Document identify how the risk of flooding should be mitigated on development sites.	Noted.

	Planning Documents - East Riding Local Plan Allocations Document		The Humber Strategy should ensure that it does not increase flood risk or impede the delivery of development on allocated in the Local Plan.	
	Appendix 1 - East Riding of Yorkshire Council Local Planning Documents	19	<p>Draft Joint Minerals Development Plan Document - East Riding of Yorkshire and Kingston upon Hull- Summer 2010 Consultation version is listed under East Riding of Yorkshire Council documents. The Joint Minerals Local Plan should be listed as a joint plan.</p> <p>The most recent consultation took place in summer 2016 not 2010. The consultation document was called East Riding of Yorkshire and Kingston Upon Hull Joint Minerals Local Plan Second Preferred Approach (2016).</p> <p>Please note the publication version will be made available in Spring 2018. Adoption is expected later this year.</p>	Noted. Text amended in Appendix 1.
	Appendix 2 – Figure 6	6	Given the scale of figure 6 it is difficult to tell whether all Local Plan allocations in the East Riding have been included. However, the larger allocations have been included.	Noted. A zoomed in version will be provided to Jeremy Pickles for review (February 2018).
	Appendix 3 – Local Landscape Character	23	East Riding of Yorkshire Council is in the process of preparing a new Landscape Character Assessment (LCA). It is likely that the new LCA will be published and available to support the development of the new Humber Strategy.	Noted.
RSPB	2.4.1	10	<p>Re Table 3 – Criteria to determine significance of identified effects of strategy options against SA objectives: Where the significance is assessed as <i>'minor negative'</i> the table concludes that <i>'This effect would not be considered significant'</i>.</p> <p>This wording used here is of potential concern, as something considered to be of <i>'minor negative'</i> at the strategic level assessment of SEA/SA but which <i>'partly undermines achievement of the SA objective by contributing to a social, economic or</i></p>	<p>Noted.</p> <p>The options will be appraised against each objective and will be viewed in the context of the specific objective that is being considered. Where a cumulative, synergistic or secondary effect is likely to occur (as indicated in the concern raised) this item will be picked up as part of the in-combination effect appraisal. Although the SA is a</p>

		<p><i>environmental problem'</i> may be highly significant in relation to a specific objective or component of the strategy; for example in relation to HRA.</p> <p>This concern could be avoided/addressed by additional wording to clarify this point, for example: <i>"This issue is not considered to be significant in terms of SA/SEA, but may be significant and may need further consideration and assessment at a different stage in the wider strategy assessment process"</i>.</p>	<p>stand-alone document, the information, analysis and allocation of an assessment score is heavily dependent on other evidence studies that will be undertaken as part of the Strategy - for example HRA or economics studies. No change is proposed. The assessment score will be accompanied by an explanatory text for the reader.</p>
2.8.1	12	<p>Please note that the Habitat Regulations have recently been updated and the correct regulations to refer to are now the 'Conservation of Habitats and Species Regulations 2017'. These include changes to various regulation numbers.</p> <p>We note that it is stated that <i>'Information from the HRA will support the SA appraisal of options against biodiversity objectives relating to the Natura 200 sites'</i>. We welcome this, as there will be an overlap of issues common to both the SA/SEA and the Strategy HRA. However, it is not clear from the scoping report or timelines within when the HRA is planned? The alternatives test component of the HRA is of particular relevance to the SA/SEA, and the HRA will need to be undertaken in parallel to the SA/SEA in order for it to be available to support and inform these broader assessments.</p>	<p>Noted.</p> <p>Noted.</p> <p>Reference must be made to the programme for HRA timing; when this is finalised further stage SA reports may include the information sought.</p>
3.4	18	<p>Q1 The Humber Nature Partnership are in the process of producing a Recreational Disturbance Strategy, as SPA birds in some parts of the estuary are known to be particularly vulnerable to and/or are already being affected by disturbance. This is relevant to the Strategy in terms of the potential for additional disturbance during the construction of flood defence and flood alleviation schemes, as well as having some relevance to the design, construction and management of compensation habitat schemes.</p>	<p>Noted.</p> <p>Comments shared for consideration for the appraisal work outside the SA.</p>
5.7	42	<p>Q2 Sections 4 and 5 of the scoping report appear to contain a good overview of relevant topics and issues for the study area in terms of the environmental baseline.</p>	<p>Noted.</p>
6.6	54	<p>Q3 Yes at a strategic/high level which is appropriate for SA/SEA scoping.</p>	<p>Noted.</p>

North Lincolnshire Council	3.2	13 (pdf 29)	The latest Habitats Regulations are dated 2017: https://www.legislation.gov.uk/ukxi/2017/1012/contents/made	Noted. New text added in Appendix 1 and section 3.2.
	3.4	18 (pdf 34)	Q1: Are there any other policies, plans or programmes (PPPs) that contain environmental protection objectives, economic and social objectives or identify issues that are not covered by this PPP review (see full list of reviewed policies in Appendix 1)? Are there any local plans, such as Neighbourhood Plans, that could fall within the study area? A: Lincolnshire Biodiversity Action Plan 3rd Edition October 2011 (Revised October 2015) http://www.glnp.org.uk/admin/resources/lincs-bap-2011-2020-review-2015final.pdf	Noted. New text added in Appendix 1.
	4.2	22 (pdf 38)	It is worth noting here that access and recreation may conflict with the Humber Estuary Conservation Objectives (though this does get a mention in 4.3.3).	Noted. No change.
	6 Biodiversity	51 (pdf 67)	The biodiversity objectives, criteria and indicators seem OK.	Noted
	Q3	54 (pdf 70)	Q3. Do the SA objectives provide a reasonable framework through which the likely significant social, economic and environmental effects of the strategy are assessed? Are there any other indicators which are relevant to the strategy? A: The biodiversity objectives, criteria and indicators seem OK.	Noted
	7.2	58 (pdf 74)	Are there any other problems, opportunities or issues that are relevant to the Strategy that have not been covered? A: Potential impacts on coastal grazing marsh, high tide roosts, and the Barton-New Holland Claypits are implied in the SA	Noted. This information and any other spatially-specific information will be considered at short list options stage.

			Framework, but not covered as explicitly as matters relating to coastal squeeze.	
	Fig. 6	Pdf 132	The area east of Scunthorpe indicated as "Mixed Use / Future Development" includes large areas of Ancient Woodland. This is an irreplaceable habitat which should not be developed unless the needs and benefits of development on that location are over-riding. What is the source of this proposal?	Noted. Source - Local Plan GiS layers supplied by participating local authorities. The Mixed Use area that is being discussed is out of the Strategy study area, although impact of the Strategy on the Ancient woodland will be considered in the SA. Comments shared for consideration for the appraisal work outside the SA.
	Fig. 11	Pdf 137	In North Lincolnshire, some Local Wildlife Sites and Local Nature Reserves are not shown. However, these are largely outside the study area.	Noted. Additional GIS layers request, aimed specifically at local sites of biodiversity value was requested on 07.02.2018.
Historic England	Section 5.5.1		<p>In general terms we consider that the Historical Overview (Section 5.5.1) is very good in setting the scene about 'place', but it does not go far enough. It is a shame that the Overview is broken down into individual heritage assets, such that all we have is the historic environment represented or defined as a list of names and places. We do not think that this captures the character of the area. A better approach might be the formulation of area based project plans which consider the historic environment holistically and thereafter identify priority areas.</p> <p>Additionally we think that the approach to the understanding of the historic environment would benefit from the creation of 'a narrative' establishing the story of the area. It may have been the case that the area indicated in the flood strategy can be characterised as a zone that has always experienced fluidity, change and reclamation and inundation. If this is the case what does that tell us about the place, the communities, harm and the opportunities for 'place-making' as well as the opportunities for 'mass observation/recording exercises' with the general public.</p>	Noted.

	Table 5.1		Specifically we think that Table 5.1 should include known 'non-designated heritage assets';	Noted. New text added.
	Table 6.1		Table 6.2 is somewhat confusing	Table will be reviewed.
	Appendix 1		Appendix 1 should include the 1990 Planning (Listed Building and Conservation Areas) Act and the 1979 Ancient Monuments and Archaeological Areas Act.	Noted. New text added in Appendix 1.
Lincolnshire Wildlife Trust	Q1	Page 37	<p>References to the Habitats Regulations should be updated to the most recent version of the legislation: The Conservation of Habitats and Species Regulations 2017.</p> <p>We would suggest that reference should also be made to the Lawton Report, Making Space for Nature. Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J., & Wynne, G.R. (2010) Making Space for Nature: a review of England’s wildlife sites and ecological network. Report to Defra.</p> <p>There should also be reference to Biodiversity 2020: A strategy for England’s wildlife and ecosystem services, Defra, 2011.</p> <p>A new iteration of The Lincolnshire Wolds AONB Management Plan for 2018-2023 is currently being consulted on. We would suggest that references should be amended to the new version once adopted.</p> <p>The Environment Agency and Natural England are partners in the Lincolnshire Biodiversity Action Plan 3rd Edition. We would suggest that this is a relevant document in Lincolnshire, North Lincolnshire and North East Lincolnshire and therefore should be included. Other county or organisational BAPs may also be relevant.</p>	Noted. New text added in Appendix 1.
	Figure 11	App. 2	The mapping seems to suggest that not all non-statutory nature conservation sites seem to have been included. It is difficult to tell at this scale but it appears that Sites of Nature Conservation	Noted.

		<p>Importance (SNClIs) do not seem to be represented. These were the predecessors of Local Wildlife Sites and have not yet been resurveyed using the more rigorous criteria. Until such time as they are re-evaluated, they should receive equal status as LWSs. It also appears that some of the Lincolnshire Wildlife Trust sites such as Barrow Haven Reedbed and Fairfield Pit are not represented. This may be because they are designated under the Humber Estuary SSSI or because 'nature reserves' have not been included as a separate 'designation'.</p>	<p>An additional GIS layers request, aimed specifically at local sites of biodiversity value, was requested on 07.02.2018.</p>
Appendix 3-2		<p>Environmental Factors, we would query why the list of nature conservation designations includes RSPB nature reserves but not Wildlife Trust sites, this should perhaps be amended to include a fully representative list of nature reserve sites in the study area. We would also recommend that this appendix includes reference to non-statutory designations for a more complete picture of nature conservation designations in the area.</p>	<p>Noted. Additional GIS layers request, aimed specifically at local sites of biodiversity value or local wildlife sites has been requested on 07.02.2018. Appendix 2-11 has been revised based on data returned by some of the Local Authorities.</p>
Section 7.2		<p>Are there any other problems, opportunities or issues that are relevant to the Strategy that have not been covered?</p> <p>We are not aware of any.</p>	<p>Noted</p>
Q3		<p>Do the SA objectives provide a reasonable framework through which the likely significant economic, social and environmental effects of the Strategy can be assessed?</p> <p>Yes, the objectives appear to provide a reasonable framework for assessment.</p>	<p>Noted</p>
Section 7.2		<p>Are there any other indicators which are relevant to the Strategy that could be used for assessment or monitoring purposes?</p> <p>We are not aware of any at this time.</p>	<p>Noted</p>
Q4		<p>Are there any other potential conflicts between the proposed SA objectives and the Strategy that have not been identified in the compatibility assessment?</p>	<p>Noted</p>

		We do not foresee any potential conflicts at this time.	
	Section 7.2	<p>Do you believe that the significant impacts of the Strategy can be identified using this approach?</p> <p>We agree that this approach should allow significant impacts to be identified.</p>	Noted
	Section 7.2	<p>Are there other/ additional methodologies that could be used to identify the significant impacts of the Strategy?</p> <p>We are not aware of any.</p>	Noted

2018 Version