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# **Draft Kirklees Local Flood Risk Management Strategy**

## **Strategic Environmental Assessment Report**

Non-Technical Summary  
Prepared by LUC  
June 2012

**Project Title:** SEA of Kirklees Local Flood Risk Management Strategy

**Client:** Kirklees Council

Version	Date	Version Details	Prepared by	Checked by	Approved by Principal
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## Introduction

- 1.1 Kirklees Council is preparing a Local Flood Risk Management Strategy (LFRMS), as required by the Flood and Water Management Act 2010, which gave local authorities a new role to manage local flood risk in their area. In line with statutory requirements, Kirklees Council is undertaking Strategic Environmental Assessment (SEA) in relation to the emerging LFRMS, and has commissioned independent consultants (LUC) to do this on its behalf.
- 1.2 This Non-Technical Summary relates to the full SEA Report ('the Environmental Report') for the Draft LFRMS for public consultation (June 2012), and should be read alongside those two documents.

## The Local Flood Risk Management Strategy

- 1.3 The LFRMS must be consistent with the National Flood and Coastal Erosion Risk Management Strategy, which was produced by the Environment Agency in 2011. It will set out a vision for the management of flood risk in Kirklees and, although the Flood and Water Management Act specifies some of the key elements that must be included in the LFRMS, it should be locally specific, reflecting key local issues and enabling communities to be more involved in decision-making about flood risk management.
- 1.4 Local flood risk is defined in the Flood and Water Management Act as flood risk from:
  - surface runoff;
  - groundwater; and
  - ordinary watercourses (those that do not form part of a 'main river'<sup>1</sup>).
- 1.5 The Flood and Water Management Act requires LFRMSs to specify:
  - The risk management authorities within the authority's area (in Kirklees these are the Environment Agency, the Lead Local Flood Authority (Kirklees Council), the Water Company (Yorkshire Water Services) and the Highway Authority (Kirklees Council).
  - The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area.
  - The assessment of local flood risk for the purpose of the strategy.
  - The objectives for managing local flood risk (including any objectives included in the authority's flood risk management plan prepared in accordance with the Flood Risk Regulations 2009).
  - The measures proposed to achieve those objectives.
  - How and when the measures are expected to be implemented.
  - The costs and benefits of those measures, and how they are to be paid for.
  - How and when the strategy is to be reviewed.
  - How the strategy contributes to the achievement of wider environmental objectives.
- 1.6 Kirklees Council must consult risk management authorities (as listed above) that may be affected by the strategy as well as the general public about its LFRMS.
- 1.7 The Draft Kirklees LFRMS for public consultation (June 2012) sets out 12 overarching objectives for the management of local flood risk (see **Table 4**), and a number of measures are described that will be implemented to achieve each objective.

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<sup>1</sup> Main rivers are defined as watercourses marked as such on a main river map. Generally main rivers are larger streams or rivers, but can be smaller watercourses.

- 1.8 A glossary of technical terms relating to flood risk management can be found in Chapter 1 of the Draft LFRMS for public consultation (June 2012).

## What is Strategic Environmental Assessment?

- 1.9 Strategic Environmental Assessment (SEA) is a statutory assessment process, required under the Environmental Assessment of Plans and Programmes Regulations (the SEA Regulations). The SEA Regulations transpose the European SEA Directive into UK law. The SEA Directive and Regulations require a strategic environmental assessment to be carried out for UK plans and programmes which are likely to have significant effects (either positive or negative) on the environment.
- 1.10 The SEA process should be undertaken iteratively (that is, in relation to each version of the plan as the plan is progressed), and involves predicting the likely significant environmental effects of implementing the plan. The aim is that environmental considerations can be taken into account and integrated into the production of the plan in order to improve its overall environmental and sustainability performance.
- 1.11 Guidance on the production of LFRMSs<sup>2</sup> refers to the need for LFRMSs to be subject to SEA, stating that *“the Local Flood Risk Management Strategy is likely to require statutory SEA, but this requirement is something the Lead Local Flood Authority<sup>3</sup> must consider”*. Kirklees Council considers that its emerging LFRMS does require SEA and has commissioned LUC to do this on its behalf. The LFRMS is also being subject to Habitats Regulations Assessment by LUC on behalf of the Council, and this process is being reported on separately with the findings being taken into consideration in the SEA where relevant.

### Compliance with the SEA Regulations

- 1.12 The full SEA Report and this Non-Technical Summary have been prepared in accordance with the SEA Regulations. There are a number of specific pieces of information that must be included in the SEA or ‘Environmental Report’ as well as in the Non-Technical Summary. **Table 1.1** in the full SEA Report indicates where each of the requirements of the SEA Directive has been met, and a summary of the required information is provided in this Non-Technical Summary.

## Stages in the SEA Process

- 1.13 There are five main stages of the Strategic Environmental Assessment Process, and a summary of how these stages have been undertaken for the Kirklees LFRMS is provided below:
- **SEA Stage A:** Setting the context and objectives, establishing the baseline and deciding on the Scope
  - **SEA Stage B:** Develop options, taking account of assessed effects
  - **SEA Stage C:** Preparing the SEA Report
  - **SEA Stage D:** Consulting on the LFRMS and the SEA Report
  - **SEA Stage E:** Monitoring the significant environmental effects of implementing the LFRMS

### SEA Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope

- 1.14 An SEA Scoping report<sup>4</sup> was prepared and consulted upon with the three statutory environmental bodies (Natural England, the Environment Agency and English Heritage) between March and April 2012. The Scoping stage of the SEA involved the following main tasks:

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<sup>2</sup> Local Government Association (2011) Framework to Assist the Development of the Local Strategy for Flood Risk Management.

<sup>3</sup> In this case Kirklees Council.

<sup>4</sup> Kirklees Local Flood Risk Management Strategy: SEA Scoping Report. Prepared by LUC (March 2012).

- Identification and review of other relevant policies, plans and programmes, strategies and initiatives which may influence the LFRMS.
  - Characterisation of the LFRMS area (i.e. describing its environmental, economic and character).
  - Development of a framework of SEA objectives against which the LFRMS measures and any reasonable alternatives would be appraised.
  - Identification of the key environmental and sustainability issues of relevance to the LFRMS.
- 1.15 A list of the comments received from the statutory consultees, along with a description of how each one has been addressed, is provided in **Appendix 1** of the full SEA Report. As a result of some of the comments received, some parts of the Scoping Report were revised and updated. The amended baseline information and review of plans, policies and programmes are summarised in **Chapter 3** of the full SEA Report and are presented in full in **Appendices 2 and 3** respectively of that report. They are also described further ahead in this Non-Technical Summary. The updated key environmental and sustainability issues are presented in **Chapter 3** of the full SEA Report.

### SEA Stage B: Developing and refining alternatives and assessing effects

- 1.16 Kirklees Council conducted an 'information gathering' exercise in May 2012 for the LFRMS. This involved publishing a questionnaire on the Council's website with the aim of collecting information about local peoples' experiences of flooding and what they considered to be priorities for action. The findings of the questionnaire were used by the Council to help inform the selection of measures to be included in the LFRMS.
- 1.17 Kirklees Council provided an early internal draft of the LFRMS to the SEA team at LUC for appraisal in June 2012, which included a full set of draft objectives for the LFRMS and a comprehensive set of measures through which the objectives could be achieved. An initial SEA note (which comprised an early draft of **Chapter 4** and **Appendix 4** of the full SEA report) was produced by LUC and the findings and recommendations of that note were taken into account by Kirklees Council as the Draft LFRMS for public consultation (June 2012) was produced. The SEA has now been updated to reflect the June 2012 Draft LFRMS.
- 1.18 No 'reasonable alternatives' to the measures included in the early draft LFRMS were identified during the SEA. If any alternatives are identified during consultation on the LFRMS, they will be subject to assessment against each of the SEA objectives in a further iteration of the SEA. The SEA Report and this Non-Technical Summary will also be updated to reflect the final version of the LFRMS following the consultation.
- 1.19 Only a very small number of changes were made to the LFRMS measures between the early internal draft and the Draft LFRMS for public consultation (June 2012). These changes related to recommendations coming out of the initial Habitats Regulations Assessment note that was produced at the same time as the SEA note, in order to provide for additional protection for the European sites (Special Areas of Conservation, Special Protection Areas and Ramsar sites) in and around the District.

### SEA Stage C: Preparing the SEA Report

- 1.20 The full SEA Report and this accompanying Non-Technical Summary are the output of Stage C.

### SEA Stage D: Consulting on the LFRMS and the SEA Report

- 1.21 A consultation on the Draft LFRMS is taking place between July and August 2012, with the document being made available to the statutory environmental bodies as well as a range of other consultees and the general public. The full SEA Report and this Non-Technical Summary are being published alongside the Draft LFRMS during the consultation period.
- 1.22 Comments received will be taken into account as the LFRMS is finalised. Any comments relating specifically to the SEA will be taken into account and addressed where relevant as the SEA Report and this Non-Technical Summary are updated to reflect the final version of the LFRMS.

## SEA Stage E: Monitoring the significant effects of implementing the LFRMS

- 1.23 Proposals for monitoring the significant environmental effects of implementing the LFRMS are set out in **Chapter 6** of the full SEA Report and are summarised further ahead in this Non-Technical Summary. Monitoring proposals will be reviewed as necessary to reflect the final version of the LFRMS.

## Method used and SEA Framework

- 1.24 Development of an SEA framework is not a requirement of the SEA Directive; however, it provides a recognised way in which the likely sustainability effects of a plan can be clearly described, analysed and compared. An SEA framework comprises a series of SEA objectives that are used to assess the environmental effects of the proposals within a plan or programme (in this case the LFRMS objectives and measures).
- 1.25 An SEA framework for the Kirklees LFRMS was prepared and consulted on as part of the Scoping process, drawing on the review of relevant plans and programmes, baseline information and key environmental and sustainability issues described in **Section 3** of the full SEA Report.
- 1.26 The SEA framework includes nine SEA objectives in total, as set out in **Table 1** below.

**Table 1 SEA Framework for the Kirklees LFRMS**

SEA Objectives
1. Minimise the risk of flooding to the District's community and economic assets
2. Minimise the number of residential properties at risk from flooding
3. Minimise the risk of disruption from flooding to the transport network of the District
4. Secure the efficient and prudent use of land and protect soil quality
5. Protect and enhance the character of Kirklees
6. Preserve and enhance the historic environment
7. Maximise opportunities to protect and enhance biodiversity
8. Reduce the risk of soil and water pollution
9. Prevent inappropriate new development in high flood risk areas and ensure development does not contribute to increased flooding for existing property and people elsewhere

## Use of the SEA Framework

- 1.27 Within the assessment tables of the potential environmental effects of the LFRMS, symbols have been used against each SEA objective to show whether an effect is likely to be significant, positive or negative, or uncertain, as follows:

**Table 2 Key to SEA scores**

Symbol	Effect
++	Significant positive effect
+	Minor positive effect
0	Negligible effect
-	Minor negative effect
--	Significant negative effect
?	Uncertain effect

- 1.28 The likely effects of the LFRMS need to be determined and their significance assessed, which requires a series of judgments to be made by the SEA team. The assessment team has attempted to differentiate between the most significant effects and other more minor effects through the use of the symbols shown above. The dividing line in making a decision about the significance of an effect is often quite small. Where either ++ or -- has been used to distinguish significant effects from more minor effects (+ or -), this is because the effect of the LFRMS measure on the SEA objective in question is considered to be of such magnitude that it will have a noticeable and measurable effect taking into account other factors that may influence the achievement of that SEA objective. In the context of the LFRMS, where LFRMS measures relate directly to the achievement of an SEA objective, the likely effect on that objective is considered to be significant.
- 1.29 The SEA Regulations require consideration of whether the potential effects predicted are likely to be secondary, cumulative, synergistic, short, medium or long-term, permanent or temporary. Where relevant, reference has been made to effects being either direct or indirect, the latter is taken to cover 'secondary' effects. Cumulative effects refer to the potential to increase overall effects due to adding one effect onto another. The cumulative effects of the combined measures for each of the LFRMS objectives have been considered within the SEA matrices in **Appendix 4** of the full SEA Report. An attempt has been made to look at the cumulative effects of all of the LFRMS objectives taken together on the SEA objectives in **Chapter 5** of the full SEA Report. Synergistic effects relate to the interaction of components that when combined produce a total effect that is greater than the sum of the individual components, and again, the combined effects of the LFRMS objectives are discussed in **Chapter 5** of the full SEA Report.
- 1.30 In terms of timescales for when effects are likely to occur, the LFRMS states that it has been developed to deliver a short to medium term (3-5 years) improvement plan to establish a sound evidence and knowledge base, which will help to develop a longer-term investment programme for flood risk management measures across the district. It is anticipated that the LFRMS will become more focussed on the delivery of an affordable and funded capital programme of flood risk management works in the longer term (considered to be 5-10 years). Therefore, in most instances, it is assumed that the environmental effects identified will occur in the longer term, and are likely to be permanent (as far as can reasonably be predicted). However, there are some effects that while not taking place until the longer term, may only be temporary, as they would only occur during the initial works to achieve the flood risk management measure (e.g. noise, dust, sediment release associated with machinery during de-culverting activities).

## Difficulties Encountered and Data Limitations

- 1.31 During the SEA it was at times difficult to reach a judgement regarding the likely effect of a particular measure in the LFRMS on one or more of the SEA objectives, because of a lack of

information regarding exactly how and where particular actions would be carried out. As such, there is uncertainty attached to a number of the potential effects (as described in **Chapter 5** of the full SEA Report and further ahead in this Non-Technical Summary).

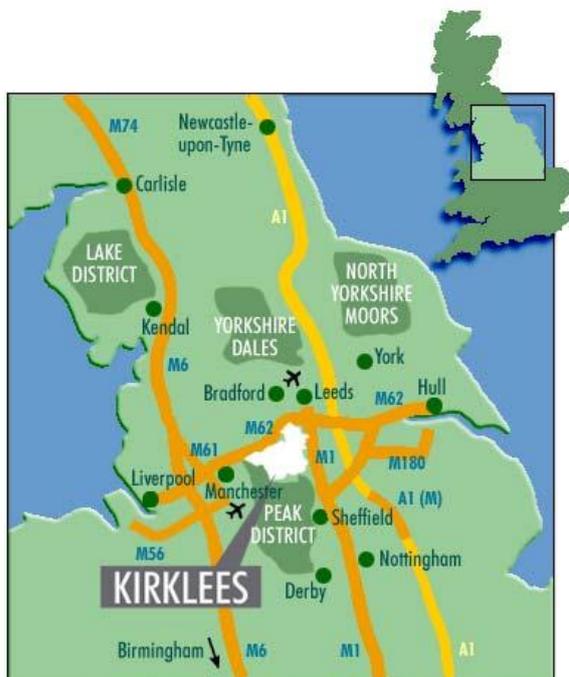
## Baseline Information

- 1.32 Baseline information provides the context for assessing the potential environmental effects and sustainability of measures in the emerging LFRMS and it provides the basis for identifying trends, predicting the likely effects of the LFRMS and monitoring its outcomes.
- 1.33 Annex 1(f) of the SEA Directive requires data to be gathered on biodiversity, population, human health, flora, fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the inter-relationship between the above factors.
- 1.34 The baseline information collated in relation to Kirklees was originally presented in the SEA Scoping Report (March 2012). In light of consultation comments received in relation to the Scoping Report, the baseline information has been amended and added to in places. The full updated version is presented in **Appendix 3** of the full SEA Report and key points are summarised below.

### The Study Area

- 1.35 Kirklees District covers an area of 40,860 hectares and is set on the western edge of the Yorkshire and Humber Region. The authority is diverse, comprising urban conurbations (which contain the majority of the population) in the north and west, most notably Huddersfield, and large areas of green belt in the south. Parts of the authority are within the Peak District National Park. **Figure 1** below shows the location of Kirklees within the UK.

**Figure 1: Location of Kirklees**



### Summary of Environmental Characteristics

- 1.36 There are extensive areas of moorlands within Kirklees which provide a range of habitats and contain a number of species that have ecological significance of European importance and form

part of the South Pennine Moors Special Area of Conservation (SAC) and Special Protection Area (SPA).

- 1.37 There is a relatively high risk of flooding within Kirklees, with 13,360 residential properties in the authority considered to be at risk from surface water flooding. The authority ranks 55th out of the 149 Lead Local Flood Authorities in England in terms of general flood risk, and climate change is likely to lead to an increased risk from flooding in the future. In terms of water quality, the majority of waterbodies in Kirklees have been classed as being of 'moderate' status. The River Holme from Mag Brook to the River Colne and Fenay Beck from the source to the River Colne are the worst failing waterbodies in Kirklees.
- 1.38 The landscape of the District is distinctive and ranges in the west from the high wind swept moors of the South Pennines, through the central plateau that dips down towards the east and which is incised by river valleys to produce characteristic steep gritstone edges, whilst to the north the land is described by a large number of individual settlements separated by tracts of agricultural pasture lands.
- 1.39 Most agricultural activity within the District relates to cattle and sheep rearing, with some milk production and intensive poultry rearing. There is no significant arable production. As a result, the agricultural landscape is one of intensive grassland within fields that contain few natural field boundaries. It is a deteriorating landscape, particularly around the edges of most of the settlements. The historic association with coal mining has affected the eastern part of Kirklees' landscape in particular.

## Review of Plans, Policies and Programmes

- 1.40 As described earlier, stage A of the SEA process involves identifying other plans, policies and programmes which may influence the content of the LFRMS. This review was initially carried out as part of the scoping stage of the SEA (as reported on in March 2012) and was updated during the preparation of the full SEA report, following the consultation comments received.
- 1.41 The full review of international, national and regional level plans, policies and programmes that are considered to be particularly relevant to the LFRMS can be found in **Appendix 2** of that report, and the key points are summarised below.

### Summary of Review of Plans, Policies and Programmes

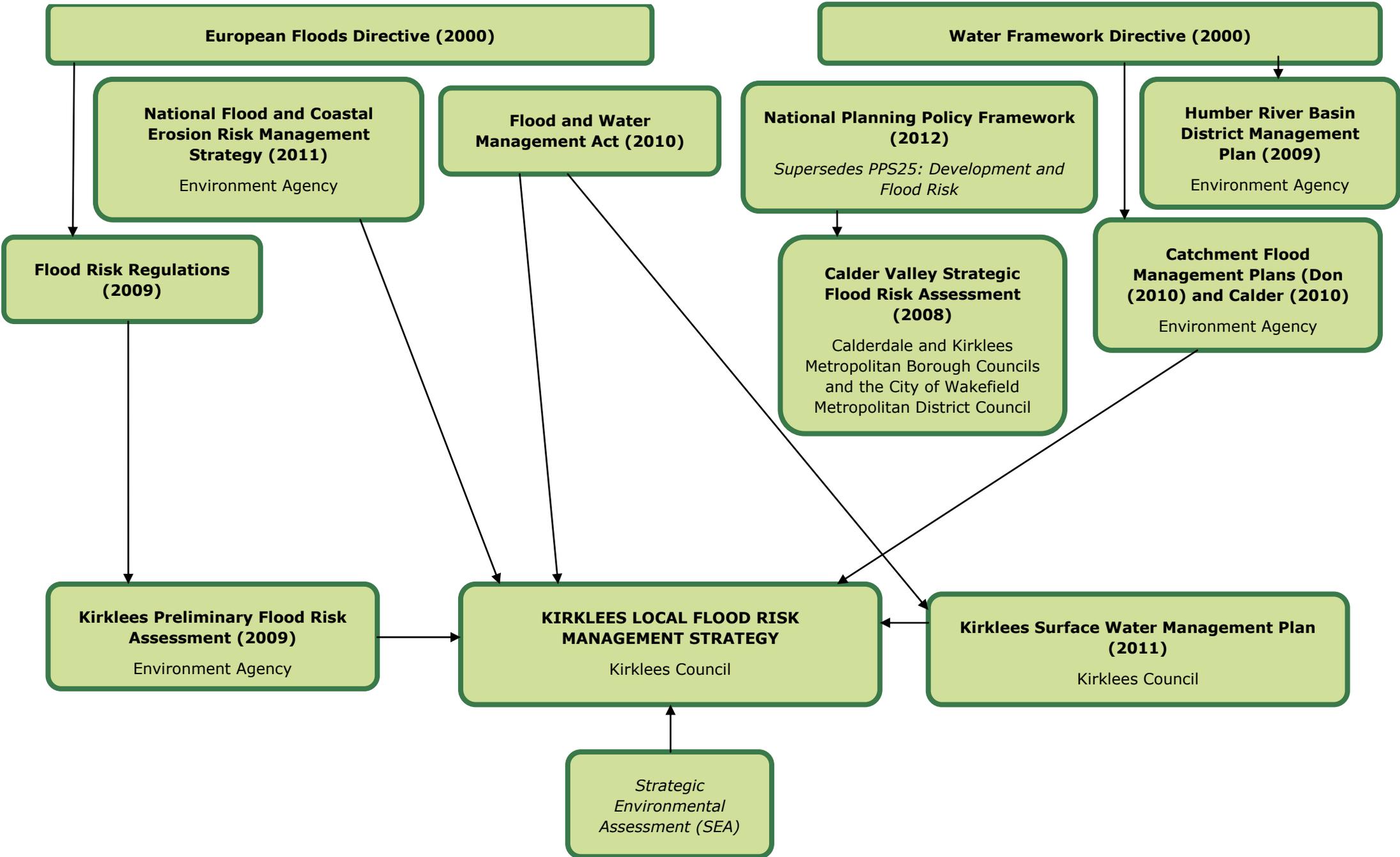
- 1.42 Many of the policies, programmes, plans, strategies and initiatives that have been reviewed are indirectly relevant to the LFRMS, for example those that relate to the protection of natural assets including biodiversity and soils. Those that are most directly relevant are summarised below:
- **Flood and Water Management Act (2010)** – This Act sets out the statutory requirement for Lead Local Flood Authorities (LLFAs) to produce a strategy for managing local flood risk. It therefore provides the legal basis for the production of the Kirklees LFRMS.
  - **National Flood and Coastal Erosion Risk Management Strategy (2011)** – The Flood and Water Management Act requires all LFRMSs to be in conformity with this Strategy, which encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to achieve better understanding of the risks of flooding both, nationally and locally, so that investment in risk management can be prioritised more effectively. As such, the Kirklees LFRMS must have regard to the contents of the Strategy.
  - **The Kirklees LDF Core Strategy Proposed Submission Document (2011)** – The Core Strategy will provide the overarching approach to future development within the District, and any proposals within the LFRMS must have regard to the policies within it. In particular, policy SCS7: Water Management aims to reduce flood risk by preventing development in inappropriate locations and requiring new developments to incorporate sustainable drainage systems.
  - **The National Planning Policy Framework (2012)** – The NPPF has replaced the suite of planning policy statements and planning policy guidance, including PPS25 which previously

presented national policy in relation to Development and Flood Risk. The NPPF sets out the considerations that local planning authorities need to take account of in order to avoid new development increasing flood risk.

- **Calder Valley Strategic Flood Risk Assessment** (2008) – This document establishes the extent of flood risk in Kirklees from rivers and other water courses, and defines the geographical extent of the various flood risk zones. It is therefore an important part of the evidence base for the production of the LFRMS.
- **Kirklees Surface Water Management Plan** (2011) – This document provides important evidence relating to flood risk in Kirklees, identifying the areas at highest risk. Along with the LFRMS, it will comprise a key part of the management of flood risk in the District.
- **EU Water Framework Directive** (2000) – The Directive came into UK law in 2003 and aims to protect and enhance water quality. It requires River Basin Management Plans to be drawn up in order to improve the water environment.
- **Humber River Basin District Management Plan** (2009) – This document sets out the challenges facing the Humber River Basin District and sets out actions to address them. It has been prepared under the Water Framework Directive and provides important evidence for the LFRMS.

1.43 **Figure 2** overleaf illustrates the relationship between the LFRMS and other relevant plans, policies and programmes.

**Figure 2: Relationships between the LFRMS and other Plans, Policies and Programmes**



## Key Issues and Likely Evolution without the Plan

- 2.1 The review of relevant plans, policies and programmes and the gathering of baseline information helped to inform the collation of a list of key environmental and sustainability issues of relevance to flood risk management in Kirklees District. The key issues are listed in **Chapter 3** of the full SEA Report.
- 2.2 The SEA Directive also requires consideration to be given to the likely evolution of the environment in the Plan area if the LFRMS were not to be implemented. **Table 3** below sets out the likely evolution of each of the key environmental and sustainability issues identified through the review of plans, policies and programmes, if the LFRMS were not to be implemented.

**Table 2: Key Environmental and Sustainability Issues and Likely Evolution without the LFRMS**

Key Environmental and Sustainability Issues	Likely Evolution without the LFRMS
Population growth and the resulting pressure for new housing and associated development.	This issue is likely to continue as at present, as the LFRMS does not intend to address population growth and demand for development. Rather the LFRMS should help to ensure that the District is well-equipped to accommodate the new development without increasing local flood risk. Therefore without implementation of the LFRMS, the implications of development pressure in terms of increased flood risk may be more negative.
High value of the District's natural environment, with various conservation designations which must be protected and enhanced where possible.	In the absence of the flood risk management achieved through implementation of the LFRMS, other flood management plans and policies such as the Catchment Flood Management Plans and policies to manage flood risk in the emerging Kirklees Core Strategy would still apply and should have some benefit in terms of protecting the natural environment from the potential adverse impacts of flooding. However, these are likely to have less direct and significant effects on the protection of the natural environment through the management of local flood risk than implementation of the LFRMS would.
High level of local flood risk, particularly in the north of the District (including in Dewsbury and Huddersfield) and around the River Calder.	Without implementation of the LFRMS, other flood management plans and policies would still apply, such as the Catchment Flood Management Plans and policies to manage flood risk in the emerging Kirklees Core Strategy. However, these are likely to have less direct and significant effects on the management of local flood risk than implementation of the LFRMS would.

Key Environmental and Sustainability Issues	Likely Evolution without the LFRMS
<p>The need to adhere to the Water Framework Directive (WFD).</p>	<p>Although not a key environmental issue in terms of the baseline evidence for Kirklees District, this is a key relevant plan or programme for the district, which a number of other plans must adhere to (e.g. River Basin Management Plans). The overall purpose of the WFD is to protect quality and quantity of all water bodies. This requirement would apply even without implementation of the LFRMS, and would be met through other plans and strategies, but the LFRMS has an important role to play in terms of ensuring that measures proposed to manage flood risk in Kirklees do not adversely affect water quantity and quality. Therefore, impacts on water quantity and quality due to flood events may be increased without implementation of the LFRMS.</p>
<p>Likely future increase in flood risk as a result of ongoing climate change.</p>	<p>This issue is likely to continue as at present, as the LFRMS does not intend to address the causes of climate change. Rather the LFRMS should help to ensure that the District is well-equipped to adapt to the increasing flood risk. Therefore without implementation of the LFRMS, the implications of climate change in terms of increased flood risk may be more negative.</p>
<p>Potential impacts of flooding, and the perceived risk of flooding, on the health and wellbeing of the local population.</p>	<p>In the absence of the flood risk management achieved through implementation of the LFRMS, other flood management plans and policies such as the Catchment Flood Management Plans and policies to manage flood risk in the emerging Kirklees Core Strategy would still apply and should have some benefit in terms of protecting local people's health and wellbeing from the potential adverse impacts of flooding. However, these are likely to have less direct and significant effects on the protection of human health through the management of local flood risk than implementation of the LFRMS would.</p>

Key Environmental and Sustainability Issues	Likely Evolution without the LFRMS
<p>Large number of residential properties and other development (including infrastructure) located in areas of high flood risk.</p>	<p>In the absence of the LFRMS, policies in the emerging Core Strategy would still apply, which aim to ensure that new development is steered away from areas of higher flood risk. Other flood management plans and policies such as the Catchment Flood Management Plans as well as policies to manage flood risk in the emerging Kirklees Core Strategy would still apply and should have some benefit in terms of reducing the flood risk facing existing residential properties and other development from the potential adverse impacts of flooding. However, these are likely to have less direct and significant effects on the management of local flood risk than implementation of the LFRMS would.</p>
<p>Large number of heritage assets such as listed buildings which require management (including in terms of their setting).</p>	<p>In the absence of the flood risk management achieved through implementation of the LFRMS, other flood management plans and policies such as the Catchment Flood Management Plans and policies to manage flood risk in the emerging Kirklees Core Strategy would still apply and should have some benefit in terms of protecting heritage assets from the potential adverse impacts of flooding. However, these are likely to have less direct and significant effects on the protection of heritage assets through the management of local flood risk than implementation of the LFRMS would.</p>
<p>High quality local landscape, including part of the Peak District National Park, which should be conserved and enhanced.</p>	<p>In the absence of the LFRMS, any measures which may affect the local landscape, for example by leading to the construction of flood defences or changing land use, would not apply.</p>

## Assessment of the LFRMS

- 2.3 The measures that are included in the Draft LFRMS for Public Consultation (June 2012) have been assessed against the SEA framework using the methodology described above, and the SEA scores for each LFRMS objective are presented in **Table 4**. The justification for the SEA scores is summarised by SEA objective below Table 4. The detailed SEA matrices (or assessment tables) for each LFRMS objective are presented in **Appendix 4** in the full SEA report.
- 2.4 In general, the LFRMS objectives have been found to have mostly positive effects on the environment, due to the LFRMS being a proactive strategy to reduce and manage flooding within Kirklees. In particular, potentially significant positive effects have been identified in relation to SEA objectives 1, 2, 3 and 9. No significant negative effects from the measures in the LFRMS have been identified in relation to any of the SEA objectives. Some LFRMS objectives are unlikely to have any effects on the environment as they relate more to improving knowledge and understanding of flood risk rather than actual works or actions that could have an effect on the ground.

- 2.5 Therefore, when taken as a whole, the synergistic and cumulative effects of all the LFRMS objectives and measures combined are considered to be overall positive for the environment, due to the likely outcome of implementing the LFRMS being a reduction in flooding and associated risk to the natural and built environment within Kirklees.

**Table 4: Summary of SEA Scores for the Draft LFRMS for Public Consultation (June 2012)**

LFRMS Objectives	SEA Objective 1: Community and economic assets	SEA Objective 2: Residential properties	SEA Objective 3: Transport network	SEA Objective 4: Efficient use of land	SEA Objective 5: Local character	SEA Objective 6: Historic environment	SEA Objective 7: Biodiversity	SEA Objective 8: Soil and water pollution	SEA Objective 9: Appropriate development
1: Improve the level of understanding of local flood risk within the Local Lead Flood Authority (LLFA)	+	+	+	+	0	+	+	+	+?
2: Improve the level of understanding of local flood risk amongst partners and stakeholders	+	+	+	+	0	+	+	+	+?
3: Ensure that local communities understand their responsibilities in relation to local flood risk management	+	+	+	+?	?	+?	+?	+?	0
4: Maximise the benefits from partnership working with flood risk partners and our stakeholders	+?	+	+?	+	0	0	+	+	+?
5: Actively manage flood risk associated with new development proposals	++	++	++	+	0	+	+	+	++
6: Take a sustainable approach to flood risk management (FRM), balancing economic, environmental and social benefits from policies and programmes	+	+	+	+	+	+	+	+	+
7: Improve and/or maintain the capacity of existing drainage systems by targeted maintenance	+	+	+	+	0	+	+?	+	0
8: Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets	+?	+?	+?	+?	0	+?	+?	+?	0
9: Influence land allocations in Local Plans to reflect flood risk	++	++	++	+	+	+	+/-?	+	++
10: Maximise opportunities to reduce surface water run-off from the upper catchments	++	++	++	+?	+?	+	+?	+	0
11: Identify projects and programmes which are affordable, maximising capital funding from external sources	+	+	+	+	+?	+	+?	+	+
12: Ensure local FRM knowledge is aligned with the Council's emergency planning procedures	+	+	+	+	0	+	+	+	+

## Summary of Effects by SEA Objective

### **SEA Objective 1: Minimise the risk of flooding to the District's community and economic assets**

### **SEA Objective 2: Minimise the number of residential properties at risk from flooding**

### **SEA Objective 3: Minimise the risk of disruption from flooding to the transport network of the District**

- 2.6 The potential effects of the LFRMS objectives on SEA objectives 1, 2 and 3 have been summarised together because the three SEA objectives relate to minimising the risk of flooding to three different types of built development, thus the effects of the LFRMS objectives are broadly very similar.
- 2.7 All of the LFRMS objectives and associated measures are likely to have either positive or significant positive effects on these three SEA objectives, as the measures have all been designed with the aim of reducing overall flood risk in the district, including the risk to community and economic assets, residential properties and the transport network. However, for SEA objectives 1 and 3 there are some uncertainties attached to the minor positive effects identified for LFRMS objective 4 (maximise the benefits from partnership working with flood risk partners and our stakeholders). This is because of some uncertainties that exist with regards to the likely actions to come out of the measures, i.e. whether the Kirklees Flood Partnership (the development of which will be progressed under measure 4.1) will include working with local businesses or relevant stakeholders such as the Highways Agency.
- 2.8 For all three SEA objectives, there are also uncertainties attached to LFRMS objective 8 (encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets) as it cannot yet be known whether private landowners will be receptive to the advice and guidance to be provided by the Council under measure 8.2, and therefore whether the potential benefits in relation to minimising the risk of flooding to community and economic assets, residential properties and the transport network will be achieved.
- 2.9 Significant positive effects are predicted for three of the LFRMS objectives, 5 (actively manage flood risk associated with new development proposals), 9 (influence land allocations in local plans to reflect flood risk) and 10 (maximise opportunities to reduce surface water run-off from the upper catchments). This is because the measures associated with those three LFRMS objectives are likely to have a particularly strong and direct impact on reducing the extent of overall flood risk to the built environment, including community and economic assets, residential properties and the transport network. The measures set out in LFRMS objectives 5 and 9 ensure that new development will be built to high standards, incorporating flood risk management measures, and is located appropriately, while LFRMS objective 10 involves working with major landowners to implement action on the ground to reduce the rate of surface water run-off and thereby reduce the overall risk of flooding across the District.
- 2.10 No negative effects from the LFRMS objectives, minor or significant, have been identified in relation to SEA objectives 1, 2 and 3.

### **SEA Objective 4: Secure the efficient and prudent use of land and protect soil quality**

- 2.11 All of the LFRMS objectives are considered likely to have minor positive effects on prudent use of land and protecting soil quality due to the fact that the measures associated with each LFRMS objective will combine to reduce overall flood risk. This will reduce the likelihood of flood events damaging soils, for example as a result of rapid surface run-off causing soil erosion.
- 2.12 However, there are a small number of uncertainties attached to some of the minor positive effects, where specific works will result from the measures and where it is not possible to tell whether those works may have an effect on land use or soil quality because the location and type of works will not be known until proposals come forward following publication of the LFRMS. This is the case for LFRMS objectives 3 (ensure that local communities understand their responsibilities in relation to local flood risk management), 8 (encourage proactive, responsible maintenance of

privately-owned flood defence and drainage assets) and 10 (maximise opportunities to reduce surface water run-off from the upper catchments).

### **SEA Objective 5: Protect and enhance the character of Kirklees**

- 2.13 A large number of the LFRMS objectives are not considered likely to have a direct effect on the character of Kirklees, because they will not result in physical works or actions that could affect the appearance of the area. However, minor positive effects have been identified in relation to LFRMS objectives 6, 9, 10 and 11. The minor positive effect identified for LFRMS objective 6 (take a sustainable approach to flood risk management, balancing economic, environmental and social benefits from policies and programmes) is because measure 6.1 relates to the SEA which is being carried out for the LFRMS. Through the SEA, all LFRMS measures are being assessed for their potential impacts on local character which means that any potential negative effects that arise as the LFRMS is developed can be identified and addressed through appropriate mitigation. The minor positive effect associated with LFRMS objective 9 (influence land allocations in local plans to reflect flood risk) relates to measure 9.1, which could have an indirect positive effect by potentially leading to less development taking place on greenfield sites; therefore helping to conserve landscape character. Uncertain minor positive effects are also associated with LFRMS objective 10 (maximise opportunities to reduce surface water run-off from the upper catchments) because the measure that aims to achieve that objective may lead to planting or other land management activities which could enhance the appearance of the landscape. LFRMS objective 11 (identify projects and programmes which are affordable, maximising capital funding from external sources) also has an uncertain minor positive effect because the removal of culverts under measure 11.2 may result in watercourses being reintroduced into the landscape.
- 2.14 The effect of LFRMS objective 3 (ensure that communities understand their responsibilities in relation to local flood risk management) is uncertain, as measure 3.1 involves encouraging landowners to employ appropriate measures on their land to reduce local flood risk, and depending on the nature of the actions that they are advised to take, there may be effects on local character. However, it is recognised that measures 6.1 and 6.2 will provide mitigation by ensuring that due regard is given to environmental considerations (taken to include the landscape and local character).

### **SEA Objective 6: Preserve and enhance the historic environment**

- 2.15 Almost all of the LFRMS objectives are considered likely to have a positive effect on the historic environment (including both designated and undesignated heritage assets), although LFRMS objective 3 (ensure that communities understand their responsibilities in relation to local flood risk management) is not expected to have any effect. The other LFRMS objectives are likely to have positive effects because the measures associated with each objective will combine to reduce the overall extent of flood risk, thereby reducing the likelihood of heritage assets such as listed buildings, scheduled monuments or historic parks and gardens being adversely affected by flood events.
- 2.16 However, the potential positive effect from LFRMS objective 8 (encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets) is uncertain. This is because it cannot be known at this stage whether private landowners will be receptive to the advice and guidance to be provided by the Council under measure 8.2, and therefore whether the potential positive effects on preserving and enhancing the historic environment will be achieved.

### **SEA Objective 7: Maximise opportunities to protect and enhance biodiversity**

- 2.17 While all of the LFRMS objectives are likely to have minor positive effects on protecting and enhancing biodiversity within the district (whether designated or not for nature conservation importance), the potential positive effects associated with LFRMS objectives 3 (ensure that communities understand their responsibilities in relation to local flood risk management), 7 (improve and/or maintain the capacity of existing drainage systems by targeted maintenance), 8 (encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets), 10 (maximise opportunities to reduce surface water run-off from the upper catchments) and 11 (identify projects and programmes which are affordable, maximising capital funding from external sources) are uncertain. This is because the measures attached to those LFRMS objectives will result in changes in land management, clearance of watercourses and the removal

of culverts. While the broad effects of those actions on biodiversity are likely to be positive (mainly as a result of reduced overall flood risk which could otherwise have adverse effects on some habitats and species), particularly when considered in combination, there may be localised negative effects on habitats and species as a result of the flood management activities. The Habitats Regulations Assessment which is also being carried out in relation to the Draft LFRMS has identified the potential for physical disturbance impacts as well as changes in hydrology which could affect biodiversity within European sites (specifically the South Pennine Moors SAC and SPA (Phases 1 and 2)). However, without more detailed information about the flood management actions that may be taken, as well as the specific locations, it is not possible to be more certain about the potential impacts on biodiversity (including opportunities to enhance biodiversity) whether designated or undesignated within the district.

### **SEA Objective 8: Reduce the risk of soil and water pollution**

- 2.18 All of the LFRMS objectives are considered likely to have minor positive effects on reducing soil and water pollution due to the fact that the measures associated with each LFRMS objective will combine to reduce overall flood risk. This will reduce the likelihood of flood events leading to soil and water pollution, for example as a result of rapid surface run-off causing soil erosion and washing sediments and/or chemical fertilisers into watercourses.
- 2.19 However, there are a small number of uncertainties attached to some of the minor positive effects, where specific works will result from the measures but where it is not possible to tell whether those works may have an effect on soil and water pollution because the location and type of works will not be known until proposals come forward following publication of the LFRMS. This is the case for LFRMS objectives 3 (ensure that local communities understand their responsibilities in relation to local flood risk management) and 8 (encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets).

### **SEA Objective 9: Prevent inappropriate new development in high flood risk areas and ensure development does not contribute to increased flooding for existing property and people elsewhere**

- 2.20 Most of the LFRMS objectives will have either minor positive or significant positive effects on this SEA objective, although LFRMS objectives 3 (ensure that local communities understand their responsibilities in relation to local flood risk management), 7 (improve and/or maintain the capacity of existing drainage systems by targeted maintenance), 8 (encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets) and 10 (maximise opportunities to reduce surface water run-off from the upper catchments) are all expected to have no effect on this SEA objective because the measures associated with those LFRMS objectives will not have any effect on the nature and location of new development.
- 2.21 LFRMS objective 5 (actively manage flood risk associated with new development proposals) and 9 (influence land allocations in Local Plans to reflect flood risk) are both considered likely to have significant positive effects on this SEA objective, as the measures associated with those LFRMS objectives specifically aim to ensure that new development does not increase the overall flood risk, and that flood risk is a key factor taken into consideration by the Council when land allocations for new development are being determined.
- 2.22 A number of minor positive effects are also identified for SEA objective 9, associated with measures under LFRMS objectives 1, 2, 4, 6, 11 and 12, which should indirectly contribute to a reduction in overall flood risk within Kirklees, including flood risk potentially caused by new development, for example by improving the evidence base that will inform the Council's decisions about the siting of new development. However, the minor positive effects relating to LFRMS objectives 1, 2 and 4 are uncertain because some aspects of the measures and how they will be implemented are not clear – for example, in relation to LFRMS objective 1, there is some uncertainty attached to the status of designated flood/drainage assets and the implications of the designation in planning terms; therefore the effect of the designations on steering new development away from areas of high flood risk are uncertain. Similarly, LFRMS objective 2 may have an indirect positive effect on this SEA objective as improving stakeholder understanding of flood risk could reduce the chances of inappropriately sited development proposals coming forward, and may increase the likelihood of such proposals being considered appropriately in light of the potential impacts on flood risk; however this is an assumption and is not certain. The

effects of LFRMS objective 4 on preventing inappropriate development are also uncertain as they will depend on the future actions of the Kirklees Flood Partnership, the Yorkshire LLFA Liaison Group and the Yorkshire Action and Learning Alliance, the details of which are not known at this stage.

## Recommendations and Mitigation

- 2.23 No negative effects, either minor or significant, have been identified in relation to any of the LFRMS measures that will require mitigation. This is because the LFRMS is a document which is intended to have positive effects on the environment, and itself aims to mitigate potential adverse environmental impacts from flooding.
- 2.24 While a number of the potential positive effects identified are uncertain, this is inevitable without more information regarding the detail of the measures in the LFRMS, which will not be known until the strategy begins to be implemented in conjunction with landowners and the other risk management authorities. It is considered that LFRMS objective 6, including measures 6.1 and 6.2, provides overall mitigation of the potential for any physical works or actions resulting from the LFRMS to have negative environmental effects, as they require environmental considerations to be embedded in the LFRMS (in part through the SEA process). In addition, measure 6.2 requires Environmental Impact Assessments to be carried out where there are environmental risks from schemes and initiatives promoted by the strategy, and states that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district.
- 2.25 The uncertainties attached to the potential effects of LFRMS objective 4 (maximise the benefits from partnership working with flood risk partners and our stakeholders) on SEA objectives 1 and 3 could be removed if the wording of measure 4.1 was more specific with regards to the types of partners that will be involved in the Kirklees Flood Risk Partnership, and this is a recommendation arising from the SEA.
- 2.26 In addition to flood risk management, the main potential benefit of the LFRMS that has been identified through the SEA is the opportunity for biodiversity enhancements to be achieved, for example if habitat enhancement (such as moorland restoration) were to take place. The potential for such benefits to be achieved could be enhanced by amending the wording to measure 6.1, therefore, the SEA recommends that measure 6.1 explicitly refers to the need to consider the potential for biodiversity benefits to be achieved through the implementation of the LFRMS.

## Monitoring

- 2.27 The SEA Directive and Regulations require that the significant environmental effects of implementing the plan or programme in question are considered. As discussed above, a number of the measures in the draft LFRMS could have potential significant positive effects on the SEA objectives, although no likely significant negative effects on the environment were identified. There are also a number of SEA objectives for which no significant effects have been identified. Therefore, it is recommended that monitoring of environmental effects due to implementation of the LFRMS is undertaken in relation only to those objectives where significant or uncertain effects were identified.
- 2.28 The LFRMS explains in Section 8 that it will be monitored by officers at the regular Kirklees Flood Partnership Meetings and progress against the measures will be assessed by local members through an annual report to the Council's Development and Environment Overview and Scrutiny Panel. It is recommended that SEA monitoring of the LFRMS should be conducted as part of the overall approach to monitoring achievement of the LFRMS measures.
- 2.29 **Chapter 6** in the full SEA Report presents a number of suggested indicators for monitoring the potential significant and uncertain environmental effects of implementing the LFRMS (these relate to SEA objectives 1, 2, 3, 5 and 9).

## Conclusion

- 2.30 None of the measures in the Draft LFRMS are likely to have significant negative effects on any of the SEA objectives. This is because the underlying aim of the LFRMS is environmental protection through flood risk management, meaning that the effects of the strategy are largely positive. Where uncertain effects have been identified with some potential for negative effects, mitigation should be provided by LFRMS measures which specifically aim to protect the environment (e.g. those associated with LFRMS objective 6 – take a sustainable approach to flood risk management, maximising environmental and social benefits from policies and programmes).
- 2.31 Likely significant positive effects have been identified in relation to the following SEA objectives:
- 1: Minimise the risk of flooding to the District’s community and economic assets.
  - 2: Minimise the number of residential properties at risk from flooding.
  - 3: Minimise the risk of disruption from flooding to the transport network of the District.
  - 9: Prevent inappropriate new development in high flood risk areas and ensure development does not contribute to increased flooding for existing property and people elsewhere.
- 2.32 All of these significant positive effects are associated with the measures designed to achieve LFRMS objectives 5 (actively manage flood risk associated with new development proposals), 9 (influence land allocations in Local Plans to reflect flood risk) and 10 (maximise opportunities to reduce surface water run-off from the upper catchment). The measures associated with these objectives are more likely to have significant positive effects because they involve direct actions to manage flood risk, such as ensuring that new development will be built to high standards incorporating flood risk management measures and is located appropriately, and working with major landowners to implement action on the ground to reduce the rate of surface water run-off and thereby reduce the overall risk of flooding across the District.

## Next Steps

- 2.33 The findings of the SEA will be taken into account by Kirklees Council as it finalises the LFRMS, following the public consultation between July and August 2012. The full SEA Report and this Non-Technical Summary will then be updated to reflect any consultation comments received on the SEA, and any changes made to the measures in the final LFRMS that will formally approved by the Councils cabinet and adopted as a Council strategy.

LUC  
June 2012