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Kirklees Local Flood Risk Management Strategy

Habitats Regulations Assessment Report

Prepared by LUC
February 2013

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1 Introduction

- 1.1 Kirklees Council is producing a Local Flood Risk Management Strategy (LFRMS), as required by the Flood and Water Management Act 2010. As the Lead Local Flood Authority (LLFA), Kirklees Council has a duty to develop and implement a strategy for the management of local flood risk in the District.
- 1.2 LUC was appointed by Kirklees Council in May 2012 to carry out Habitats Regulations Assessment (HRA) of the Kirklees LFRMS during its development. An initial HRA screening exercise was undertaken in relation to an early internal draft of the LFRMS, and this was reported on in an initial HRA screening note for the Council's use as it worked towards the Public Consultation draft of the LFRMS. That HRA screening exercise was then updated to reflect the measures included in the Draft LFRMS for public consultation (June 2012), and the findings were presented in an earlier version of this HRA Report. The HRA screening has now been updated again to reflect the minor changes that have been made to the objectives and measures in the final version of the LFRMS, and the updated findings are presented in this report.
- 1.3 The purpose of the HRA screening stage is to determine whether any of the measures in the LFRMS are likely to have a significant effect on any Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar site, and thus if a full Appropriate Assessment under the Habitats Regulations is required.

The requirement to undertake Habitats Regulations Assessment

- 1.4 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in July 2007 and updated in 2010¹. Local Government Association guidance on the production of LFRMSs² states that it is a statutory duty to undertake HRA.
- 1.5 The HRA refers to the assessment of the potential effects of a development plan on one or more European Sites, including Special Protection Areas and Special Areas of Conservation:
 - SPAs are classified under the European Council Directive 'on the conservation of wild birds' (2009/147/EC; 'Birds Directive') for the protection of wild birds and their habitats (including particularly rare and vulnerable species listed in Annex 1 of the Birds Directive, and migratory species).
 - SACs are designated under the Habitats Directive and target particular habitats (Annex 1) and/or species (Annex II) identified as being of European importance.
- 1.6 Currently, the government also expects potential SPAs (pSPAs), candidate SACs (cSACs) and Ramsar sites to be included within the assessment.
 - Ramsar sites support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971).
- 1.7 For ease of reference during HRA, these three designations are collectively referred to as European sites, despite Ramsar designations being at the wider international level.
- 1.8 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or whole development plan would adversely affect the integrity of the site in question. This is judged in

¹ The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007. HMSO Statutory Instrument 2007 No. 1843. From 1 April 2010, these were consolidated and replaced by the Conservation of Habitats and Species Regulations 2010 (SI No. 2010/490). Note that no substantive changes to existing policies or procedures have been made in the new version.

² Local Government Association (November 2011) Framework to Assist the Development of the Local Strategy for Flood Risk Management.

terms of the implications of the plan for a site's 'qualifying features' (i.e. those Annex 1 habitats, Annex 11 species, and Annex 1 bird populations for which it has been designated). Significantly, HRA is based on the precautionary principle - where uncertainty or doubt remains, an adverse impact should be assumed.

Stages of the Habitats Regulations Assessment

1.9 Table 1.1 below summarises the stages involved in carrying out a full HRA.

Table 1.1 Stages in HRA

Stage	Task	Outcome
Stage 1: Screening	Description of the plan Identification of potential effects on European Sites Assessing the effects on European Sites	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment	Gather information (plan and European Sites) Impact prediction Evaluation of impacts in view of conservation objectives Where impacts considered to affect qualifying features, identify alternative options Assess alternative options If no alternatives exist, define and evaluate mitigation measures where necessary	Appropriate assessment report describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' (IROPI) Identify potential compensatory measures	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous

Sources:^{3,4,5}

- 1.10 It is normally anticipated that an emphasis on Stages 1 and 2 of this process will, through a series of iterations, help ensure that potential adverse effects are identified and eliminated through the inclusion of mitigation measures designed to avoid, reduce or abate effects. The need to consider alternatives could imply more onerous changes to a plan document. It is generally understood that so called 'imperative reasons of overriding public interest' (IROPI) are likely to be justified only very occasionally and would involve engagement with both the Government and European Commission.
- 1.11 The HRA should be undertaken by the 'competent authority' - in this case Kirklees Council, and LUC has been commissioned to do this on the Council's behalf. The HRA also requires close

³ *Assessment of plans and projects significantly affecting European Sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission Environment DG, November 2001.

⁴ *Planning for the Protection of European Sites. Guidance for Regional Spatial Strategies and Local Development Documents.* Department for Communities and Local Government (DCLG), August 2006.

⁵ *The Appropriate Assessment of Spatial Plans in England. A guide to why, when and how to do it.* RSPB. August 2007.

working with Natural England as the statutory nature conservation body⁶ in order to obtain the necessary information and agree the process, outcomes and any mitigation proposals. The Environment Agency, while not a statutory consultee for the HRA, is also in a strong position to provide advice and information throughout the process due to its responsibilities for flood management – the Flood and Water Management Act (2010), which set the statutory requirement for Kirklees Council to produce a LFRMS, also requires the Environment Agency to produce a National Strategy for the management of flooding and coastal erosion. In addition, the Environment Agency is also required to undertake HRA for its existing licences and future licensing of activities.

Structure of the HRA Screening Report

- 1.12 This chapter has introduced the requirement to undertake HRA in relation to the Kirklees LFRMS. The remainder of the report is structured as follows:

Chapter 2: The Local Flood Risk Management Strategy summarises the content of the LFRMS. It outlines the objectives and measures included in the LFRMS and describes the types of impacts that human activities can have on European sites in general.

Chapter 3: HRA Screening Methodology sets out the approach used and the specific tasks undertaken during the screening stage of the HRA for the LFRMS.

Chapter 4: HRA Screening Assessment of the LFRMS summarises the findings of the HRA screening and sets out whether significant effects on European sites are likely to result from the implementation of the LFRMS.

Chapter 5: Conclusions summarises the HRA conclusions for the LFRMS.

⁶ Regulation 5 of The Conservation of Habitats and Species Regulations 2010. HMSO Statutory Instrument 2010 No. 490.

2 The Local Flood Risk Management Strategy

- 2.1 The Flood and Water Management Act 2010 ('the Act') requires Lead Local Flood Authorities (LLFAs) to produce a Local Flood Risk Management Strategy (LFRMS). These strategies must be consistent with the National Flood and Coastal Erosion Risk Management Strategy. They will set out a vision for the management of flood risk and, although the Act specifies some of the key elements that must be included in the LFRMS, it is intended that they will be locally specific, reflecting key local issues and enabling communities to be more involved in decision-making regarding flood risk management.
- 2.2 The Act defines local flood risk as flood risk from:
- Surface runoff.
 - Groundwater.
 - Ordinary watercourses (those that do not form part of a 'main river').
- 2.3 It requires LFRMSs to specify:
- The risk management authorities within the authority's area.
 - 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.
- 2.4 LLFAs must consult risk management authorities that may be affected by the strategy as well as the general public about its LFRMS.
- 2.5 As the LLFA, Kirklees is therefore required to produce a LFRMS for the management of local flood risk in the District. The Draft Kirklees Local Flood Risk Management Strategy (June 2012) was published for public consultation between July and August 2012 and it has now been updated to comprise the final version (February 2013). The first part of the document includes an executive summary, and the second presents a glossary of technical terms used throughout. The third section then sets out background information, including an outline of the flood risk facing the district and details about why the LFRMS is being produced. The roles and responsibilities of the various stakeholders involved with the management of flood risk are then described in the fourth part of the LFRMS.
- 2.6 Section 5 of the final LFRMS presents the overarching objectives of the LFRMS. These 12 objectives are to:
- Improve the level of understanding of local flood risk within the LLFA.
 - Improve the level of understanding of local flood risk amongst partners and stakeholders.
 - Ensure that local communities understand their responsibilities in relation to local flood risk management.
 - Maximise the benefits from partnership working with flood risk partners and our stakeholders.

- Actively manage flood risk associated with new development proposals.
- Take a sustainable approach to FRM, balancing economic, environmental and social benefits from policies and programmes.
- Improve and/or maintain the capacity of existing drainage systems by targeted maintenance.
- Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets.
- Establish a robust policy on water management and use available information on flood risk to assess the suitability of the allocation of sites for different land uses through the Local Development Framework process.
- Maximise opportunities to reduce surface water run-off from the upper catchments.
- Identify projects and programmes which are affordable, maximising capital funding from external sources.
- Ensure local FRM knowledge is aligned with the Council’s emergency planning procedures.

2.7 Sections 6 and 7 of the LFRMS then describe the detailed ‘measures’ that will be used to achieve each of the above objectives. Some of the objectives have only one measure associated with them, while others will be achieved through three or four different measures. The nature of the measures also varies – some involve direct actions, while others are more theoretical and relate to improving the available evidence base or increasing stakeholder involvement with flood risk management.

2.8 The LFRMS is considered to be a land use plan and so is being subject to a Habitats Regulations Assessment (HRA) in line with the Habitats Regulations⁷. Regulation 102 of the Habitats Regulations 2010 states that:

Where a land use plan—

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site,

the plan-making authority for that plan must, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site’s conservation objectives.

Potential Impacts of the LFRMS on European Sites

2.9 **Table 2.1** below sets out the range of potential impacts that human activities may have on European sites. Not all of these are relevant to the LFRMS (due to the nature of the document it will not result in the development of housing or recreation activities, for example) but it is useful to consider these wider types of impacts on European sites in the context of potential in-combination effects with other plans and strategies (see **Chapter 4**). Activities that may occur due to implementation of the LFRMS have been shaded in grey in Table 2.1.

Table 2.1 Potential Impacts and Activities Adversely Affecting European Sites

Broad categories and examples of potential impacts on European sites	Examples of activities responsible for the potential impacts
<p>Physical loss</p> <ul style="list-style-type: none"> - Removal (including offsite effects, e.g. foraging habitat) - Mine collapse - Smothering 	<ul style="list-style-type: none"> Development (e.g. flood defence infrastructure, housing, employment, infrastructure, tourism) Infilling (e.g. of mines, water bodies) Alterations or works to disused quarries Structural alterations to buildings (bat roosts)

⁷ The Conservation of Habitats and Species Regulations 2010. HMSO Statutory Instrument 2010 No. 490.

Broad categories and examples of potential impacts on European sites	Examples of activities responsible for the potential impacts
<ul style="list-style-type: none"> - Habitat degradation 	Afforestation Tipping Cessation of or inappropriate management for nature conservation
<p>Physical damage</p> <ul style="list-style-type: none"> - Sedimentation / silting - Prevention of natural processes - Habitat degradation - Erosion - Trampling - Fragmentation - Severance / barrier effect - Edge effects - Fire 	Flood defences Dredging Watercourse maintenance (including deculverting) Mineral extraction Recreation (e.g. motor cycling, cycling, walking, horse riding, water sports, caving) Development (e.g. infrastructure, tourism, adjacent housing etc.) Vandalism Arson Cessation of or inappropriate management for nature conservation
<p>Non-physical disturbance</p> <ul style="list-style-type: none"> - Noise - Vibration - Visual presence - Human presence - Light pollution 	Construction (e.g. flood defence infrastructure housing, industrial) Watercourse maintenance (including deculverting) Recreation (e.g. dog walking, water sports) Industrial activity Mineral extraction Navigation Vehicular traffic Artificial lighting (e.g. street lighting)
<p>Water table/availability</p> <ul style="list-style-type: none"> - Drying - Flooding / stormwater - Water level and stability - Water flow (e.g. reduction in velocity of surface water) - Barrier effect (on migratory species) 	Water abstraction Drainage interception (e.g. reservoir, dam, infrastructure and other development) Increased discharge (e.g. drainage, runoff)
<p>Toxic contamination</p> <ul style="list-style-type: none"> - Water pollution - Soil contamination - Air pollution 	Increased discharge (e.g. drainage, runoff) Agrochemical application and runoff Navigation Oil / chemical spills Tipping Landfill Vehicular traffic Industrial waste / emissions
<p>Non-toxic contamination</p> <ul style="list-style-type: none"> - Nutrient enrichment (e.g. of soils and 	Agricultural runoff Sewage discharge

Broad categories and examples of potential impacts on European sites	Examples of activities responsible for the potential impacts
<p>water)</p> <ul style="list-style-type: none"> - Algal blooms - Changes in salinity - Changes in thermal regime - Changes in turbidity - Air pollution (dust) 	<p>Water abstraction</p> <p>Industrial activity</p> <p>Flood defences</p> <p>Navigation</p> <p>Construction</p>
<p>Biological disturbance</p> <ul style="list-style-type: none"> - Direct mortality - Out-competition by non-native species - Selective extraction of species - Introduction of disease - Rapid population fluctuations - Natural succession 	<p>Development (e.g. housing areas with domestic and public gardens)</p> <p>Predation by domestic pets</p> <p>Introduction of non-native species (e.g. from planting river banks)</p> <p>Fishing</p> <p>Hunting</p> <p>Agriculture</p> <p>Changes in land use and management (e.g. grazing regimes, access controls, cutting / clearing)</p>

3 HRA Screening Methodology

- 3.1 The HRA Screening of the Kirklees LFRMS has been undertaken in line with current available guidance and seeks to meet the requirements of the Habitats Regulations. The tasks that have been undertaken during the screening stage of the HRA are described in detail below.
- 3.2 HRA work has recently been carried out by LUC on behalf of Kirklees Council in relation to the emerging Kirklees Core Strategy. Some of the HRA tasks that were carried out in relation to the Core Strategy did not need to be repeated in relation to the HRA of the LFRMS as they are not specific to the particular plan being subject to HRA - for example the identification of European sites in and around the District. In order to avoid unnecessary duplication of tasks, this earlier HRA work has been drawn on where appropriate, as described below.

Identification of European sites which may be affected by the LFRMS and the factors contributing to and defining the integrity of these sites

- 3.3 As part of the recent HRA of the Kirklees Core Strategy, an investigation was undertaken to identify European sites within or adjacent to the Kirklees District boundary which may be affected by the Plan. This involved the use of Geographical Information Systems (GIS) data to map the locations and boundaries of European sites using publicly available data from Natural England. Because this information has not changed and is not specific to the Core Strategy, it has been drawn on for the HRA of the LFRMS and the task did not need to be repeated.
- 3.4 All European sites lying partially or wholly within 15km of the District boundary have been included in the assessment in order to address the fact that measures in the Kirklees LFRMS may affect European sites which are located outside the administrative boundary of the strategy. This distance has generally been considered reasonable in HRAs carried out in other local authorities, as a means of ensuring that all designated sites that could potentially be affected by a plan are identified and included in the assessment.
- 3.5 Four European sites were identified within 15km of the Kirklees District boundary, although only the South Pennine Moors SAC and the South Pennine Moors SPA (Phases 1 and 2) actually fall within the District, in the south west corner. These sites are listed below in **Table 3.1** and are mapped in **Figure 3.1** at the end of this section. Note that there are no Ramsar sites present within Kirklees District (+15km).

Table 3.1 European Sites within the Kirklees District Boundary (+15km)

Special Areas of Conservation (SACs)	Special Protection Areas (SPAs)
South Pennine Moors	South Pennine Moors – note that this site comprises two designations: - Peak District Moors SPA (South Pennine Moors Phase 1) - South Pennine Moors SPA (Phase 2) Note that where both of these sites are referred to together, they are referred to as the South Pennine Moors SPA 'phases 1 and 2'.
Rochdale Canal	
Denby Grange Colliery Ponds	

- 3.6 The attributes of these sites which contribute to and define their integrity have been described (see **Appendix 1**). In doing so, reference was made to Standard Data forms for SACs and SPAs⁸. This analysis enabled European site interest features to be identified, along with the features of each site which determine site integrity and the specific sensitivities of the site, and enabled an analysis of how the potential impacts of the LFRMS may affect the integrity of the site in question.
- 3.7 Rochdale Canal and Denby Grange Colliery Ponds SACs were able to be screened out of the assessment because, as well as both sites being outside of the District boundary (meaning that there will not be direct physical effects resulting from measures in the LFRMS), neither site is hydrologically connected with the LFRMS area. As such, effects such as changes in water levels downstream which could potentially affect sites outside the administrative boundary of the LFRMS will not have an effect on the integrity of these two sites.

Description of the LFRMS

- 3.8 A summary of the structure and content of the final LFRMS (February 2013) was provided in **Chapter 2**, along with an outline of the potential impacts on European sites associated with a range of land use activities that could occur through implementation of the LFRMS as well as other development plans.

Identification of other plans and projects which may have 'in-combination' effects

- 3.9 Regulation 102 of the Habitats Regulations 2010⁹ requires an Appropriate Assessment where 'a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site'. The first stage in identifying 'in-combination' effects therefore involved identifying which other plans and projects in addition to the Kirklees LFRMS may affect the four European sites that are the focus of this assessment.
- 3.10 The purpose of the review of other plans was to identify any components that could have an impact on the European sites within the Kirklees district boundary (+15km) e.g. proposals for development near to these sites which could have implications in terms of air quality, water quality and quantity and direct physical disturbance. There are a large number of potentially relevant plans and projects which could be considered; therefore the review at this stage focused on planned spatial growth within Kirklees, the adjacent authorities and the wider region, as well as water resource management plans. As a review of this nature has recently been carried out as part of the HRA of the Kirklees Core Strategy, this work was drawn on where relevant. In particular, it was used to identify which neighbouring authorities' Core Strategies had been found to be likely to have an effect on any of the European sites in Kirklees (+15km). None of those neighbouring authorities have a LFRMS in place yet.
- 3.11 **Appendix 2** lists the plans and strategies that were considered, outlining the components of each that could have an impact on nearby European sites, and considering the findings of any accompanying HRA work. The potential for the effects of these plans to combine with the effects of the Kirklees LFRMS has been considered in the next chapter.

Assessment of 'likely significant effects' of the LFRMS

- 3.12 As required under Regulation 102 of the Habitats Regulations 2010, an assessment of the 'likely significant effects' of the Kirklees LFRMS was undertaken. A screening matrix was prepared in order to assess which measures in the LFRMS would be likely to have a significant effect on

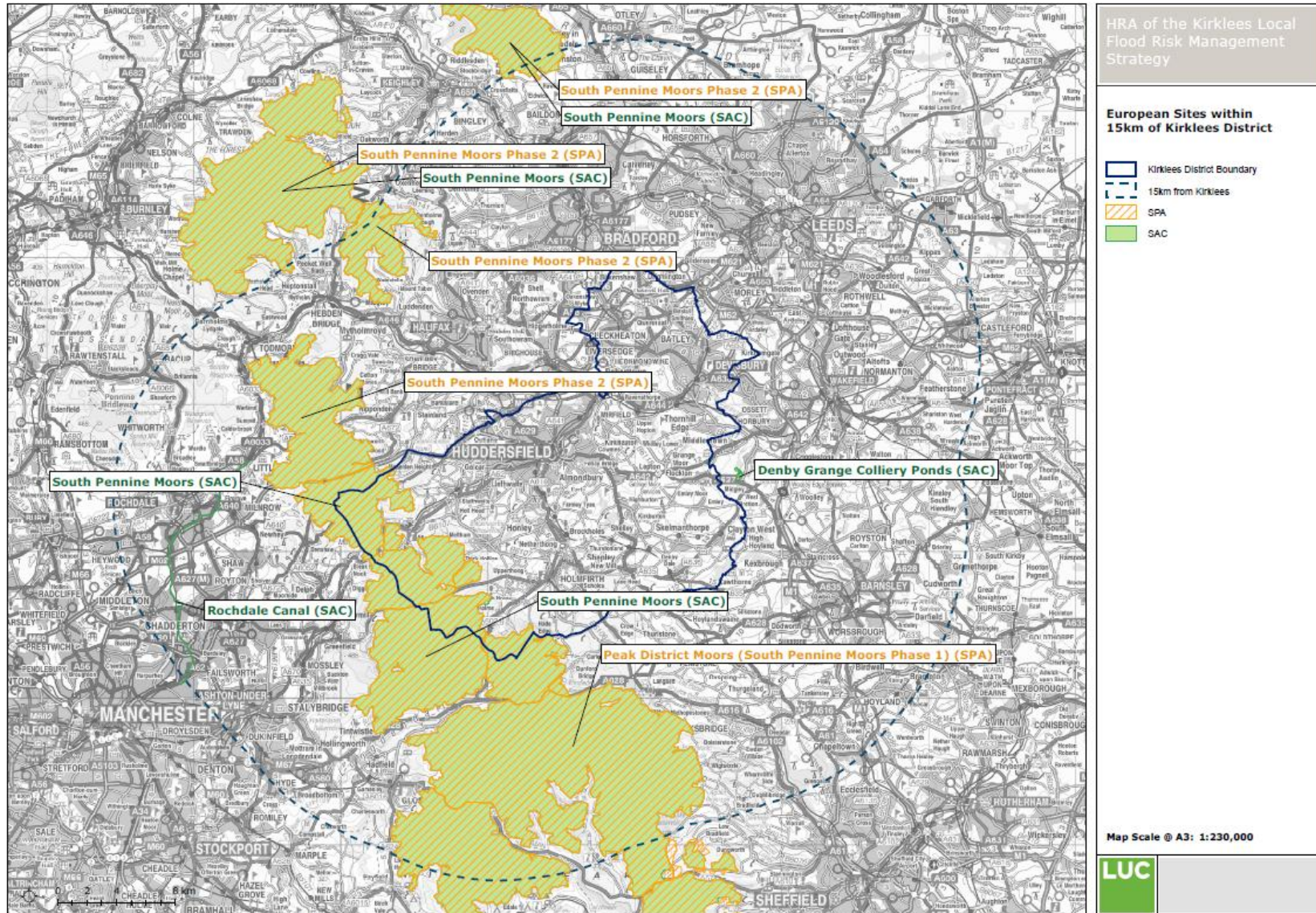
⁸ These were obtained from the Joint Nature conservation Committee and Natural England websites (www.jncc.gov.uk and www.naturalengland.org.uk)

⁹ SI No. 2010/490

European sites. The findings of the screening assessment are summarised in **Chapter 4** and can be seen in full in **Appendix 3**.

- 3.13 Note that this HRA Screening Report relates to the final version of the LFRMS (February 2013). An initial HRA note (which comprised an early draft of **Chapter 4** and **Appendix 3** of this report) was produced in May 2012, in relation to an early internal draft of the LFRMS and the findings of that note were taken into consideration by Kirklees Council as it developed the Draft LFRMS for public consultation. That screening exercise was then updated to reflect the measures in the draft LFRMS for public consultation (June 2012), and was presented in an earlier version of this HRA Report. The screening exercise has now been updated again to reflect the minor changes that have since been made to comprise the final version of the LFRMS, and it is presented in **Appendix 3**.
- 3.14 When carrying out the HRA screening, particular consideration was given to the possible pathways through which effects may be transmitted to features contributing to the integrity of the European sites (e.g. via groundwater, air and river catchments). A risk-based approach involving the application of the precautionary principle was adopted in the assessment, such that a conclusion of 'no significant effect' was only reached where it was considered very unlikely, based on current knowledge and the information available, that a LFRMS measure would have a significant effect on the integrity of a European site.

Figure 3.2 European Sites within Kirklees District (+15km)



4 HRA Screening Assessment of the Kirklees LFRMS

Screening of LFRMS measures

- 4.1 As described in **Chapter 3**, a screening assessment was carried out in order to identify the likely significant effects of the final version of the Kirklees LFRMS (February 2013) on the European sites in and around the district. The full screening matrix used for this assessment can be found in **Appendix 3** and the findings are summarised below.
- 4.2 This HRA screening report has taken the approach of screening each of 12 LFRMS objectives and the measures to achieve them individually, which is consistent with current guidance. In reality, however, the LFRMS objectives and measures will combine to deliver the overall Strategy and the in-combination effects of the LFRMS objectives together have therefore been taken into consideration where relevant.

Summary of HRA findings

- 4.3 Overall, none of the objectives and their specific measures in the final LFRMS are considered likely to result in significant negative effects on any of the European sites in and around Kirklees District, with seven of the LFRMS objectives assessed as definitely unlikely to result in significant negative effects on European sites. However, five objectives have some potential to result in significant negative effects on European sites, but the conclusion is uncertain without more detailed information regarding the exact nature and location of the actions that could result from the measures identified to achieve those five objectives.

Significant negative effects unlikely

- 4.4 The following LFRMS objectives are unlikely to have significant negative effects on European sites:
- **LFRMS Objective 1: Improve the level of understanding of local flood risk within the LLFA** – none of the measures associated with this objective will lead directly to any form of development i.e. physical works or actions to reduce flood risk. Instead, all of the measures are designed to improve the available evidence and skills so that the Council (the Lead Local Flood Authority (LLFA)) can develop and implement appropriate flood risk management measures in the most suitable locations. In addition, the measures should combine to contribute to an overall reduced flood risk in and around Kirklees, which would reduce the likelihood of adverse effects on the integrity of European sites as a result of flood events.
 - **LFRMS Objective 2: Improve the level of understanding of local flood risk amongst partners and stakeholders** – none of the measures associated with this objective will lead directly to any form of development i.e. physical works or actions to reduce flood risk. Instead, the measures are designed to improve communication between the Council (as the LLFA) and the general public. While the LFRMS includes some measures which could potentially result in significant effects on European sites, the publication of the Strategy in a clear and accessible format (measure 2.1) will not in itself lead to any such effects.
 - **LFRMS Objective 4: Maximise the benefits from partnership working with flood risk partners and our stakeholders** – the measures associated with this objective relate to improving the evidence base for the Council to deal with flood risk, through partnership working and information sharing, as well as ensuring that the LFRMS complements and supports other plans and strategies, and so neither measure will lead directly to any form of development i.e. physical works or actions to reduce flood risk. In addition, the measures

should contribute to an overall reduced flood risk in and around Kirklees, which would reduce the likelihood of adverse effects on the integrity of European sites as a result of flood events.

- **LFRMS Objective 5: Actively manage flood risk associated with new development proposals** – none of the measures associated with this objective will lead directly to any form of development i.e. physical works or actions to reduce flood risk. Measures 5.1 and 5.2 relate to the development and implementation of criteria for drainage solutions within new development which should help to reduce overall flood risk; while measure 5.3 will help to ensure that skills and knowledge relating to sustainable drainage systems (SuDS) can be applied to new development coming forward in the District. Thus while all three measures relate to developing skills and criteria for the management of flood risk, and will not lead directly to any development, the measures should combine to contribute to an overall reduced flood risk which could therefore have a positive effect on maintaining the integrity of European sites.
- LFRMS Objective 6: Take a sustainable approach to FRM, maximising environmental and social benefits from policies and programmes – none of the measures associated with this objective will lead directly to any form of development i.e. physical works or actions to reduce flood risk. Instead, they aim to ensure that any actions for flood risk management are undertaken in a way that will reduce the likelihood of adverse environmental impacts, including on European sites (e.g. through the requirement to carry out Environmental Impact Assessment on proposals for flood management schemes and initiatives). Indeed this objective should help to provide overall safeguarding for European sites as it relates to the overall approach taken to flood risk management. Measure 6.2 in particular states that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, and European designated sites will be fully referenced in the Plan.
- Objective 9 – Establish a robust policy on water management and use available information on flood risk to assess the suitability of the allocation of sites for different land uses through the Local Development Framework process – the one measure associated with this objective (9.1) will not itself lead to any form of development i.e. physical works or actions to reduce flood risk; rather it aims to ensure that development coming forward under other plans is directed to areas of lower flood risk. Although hypothetically this could lead to development being located closer to European sites, the effects of development coming forward at sites allocated within the emerging Kirklees Core Strategy have been assessed separately for the potential impacts on European sites, through the HRA of the Core Strategy, which concluded that no significant adverse effects on European sites would be likely.
- **LFRMS Objective 12: Ensure local FRM knowledge is aligned with the Council's emergency planning procedure** – the one measure associated with this objective will not itself lead to any form of development i.e. physical works or actions to reduce flood risk; rather it relates to the development of appropriate procedures to react to flood events.

Significant negative effects uncertain

- 4.5 A number of the measures for achieving five of the objectives in the LFRMS may result in significant negative effects on European sites in and around Kirklees District; however the potential for such effects to occur is currently uncertain without more detailed information regarding the exact nature and location of the actions that could result from the measures. This information will not be determined within the LFRMS, but through subsequent implementation of the measures by Kirklees Council in association with the stakeholders involved with the management of flood risk in Kirklees.
- 4.6 Uncertain effects have been identified for some of the measures associated with the following LFRMS objectives:
- **LFRMS Objective 3: Ensure that local communities understand their responsibilities in relation to local flood risk management** – while measure 3.2 is not considered likely to have a significant effect on any European sites, as it relates to increasing community

engagement with flood risk management rather than any physical works or actions, **measure 3.1** could potentially have a significant effect on the South Pennine Moors SAC/SPA (Phases 1 and 2). This is because, while the focus of the measure is primarily on collating and distributing information to landowners, the measure also specifies that advice will be given to landowners with regards to the actions that they could employ to manage flood risk. Depending on the nature of these actions and the locations at which they are implemented, there may be the potential for significant effects on the South Pennine Moors SAC and SPA (Phases 1 and 2) as a result of physical disturbance, and on the South Pennine Moors SAC/SPA (Phases 1 and 2) as a result of interruption to hydrological regimes. While it is noted that the South Pennine Moors SAC/SPA (Phases 1 and 2) are within the upper catchments of the Rivers Colne and Dearne, and so actions across much of the District would be unlikely to affect hydrological regimes there, actions taken within the parts of the South Pennine Moors SAC/SPA (Phases 1 and 2) that are furthest upstream could potentially have an effect further downstream within the SAC/SPA (Phases 1 and 2). However, it is recognised that there could also be a positive effect in terms of an overall reduced flood risk lowering the likelihood of flood events having negative effects on the integrity of European sites in and around Kirklees.

- **LFMRS Objective 7: Improve and/or maintain the capacity of existing drainage systems by targeted maintenance** – while measure 7.1 will not have a significant effect on European sites as it relates to improving the Council’s evidence base for the management of flood risk, **measures 7.2 and 7.3** could potentially have a significant effect on the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2). This is because both measures endorse the maintenance of watercourses to maximise the drainage of surface water, which could potentially indirectly affect water levels at these sites. However, as above, it is recognised that such effects are less likely to impact upon the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2) because of their location in the upper catchments of the Rivers Colne and Dearne. Therefore, significant effects might only occur if the maintenance measures occurred in the upper catchments of the Rivers Colne and Dearne. Again, there is also potential for direct physical disturbance to the South Pennine Moors SAC/SPA (Phases 1 and 2) if maintenance works take place within the boundaries of those sites. It is also recognised that the maintenance of watercourses should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and that there may be further positive effects in relation to an overall reduced flood risk and therefore less chance of flooding events affecting the integrity of European sites.
- **LFMRS Objective 8: Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets** – while measures 8.1 and 8.3 will not lead directly to physical works or actions which could affect the integrity of European sites, an uncertain effect has been identified in relation to **measure 8.2**, which could lead to landowners implementing maintenance works on their land. Depending on the exact nature and location of such works, there could potentially be adverse effects on the South Pennine Moors SAC/SPA (Phases 1 and 2) as a result of physical disturbance, and on the South Pennine Moors SAC/SPA (Phases 1 and 2) as a result of changes to hydrological regimes. However, as noted above, such effects would only be likely to impact upon the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2), if the maintenance works took place on land in the upper catchments of the Rivers Colne and Dearne. It is also recognised that the maintenance of watercourses by private landowners should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and that there may be further positive effects in relation to an overall reduced flood risk and therefore less chance of flooding events affecting the integrity of European sites.
- **LFMRS Objective 10: Maximise opportunities to reduce surface water run-off from the upper catchments** – the one measure associated with this objective (**measure 10.1**) endorses land management activities to reduce the rate of surface water run-off and could therefore have a significant effect on the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2) as a result of direct physical disturbance if the measure leads to works within the boundary of those sites. There may also be impacts on the South Pennine Moors SAC/SPA (Phases 1 and 2) as a result of interruption to hydrological regimes, if the land management activities to reduce the rate of surface water run-off occur within the catchment of those sites. However, the effects are uncertain at this stage without more information

about the type and location of land management activities that may be encouraged. Again, it is recognised that such effects would only be likely to impact upon the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2), if the works took place in the upper catchments of the Rivers Colne and Dearne. It is also recognised that reducing surface run-off should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and that there may be further positive effects in relation to an overall reduced flood risk and therefore less chance of flooding events affecting the integrity of European sites. In particular, measure 10.1 states that significant areas of the Colne catchment provide opportunities through different land management practices to retain rainwater where it falls, delaying its entry to or reducing the rate at which it enters the river system. This could have particular benefits for the heaths and bogs which comprise the moors. The LFRMS recognises the sensitivity of the South Pennine Moors designated site, as it states within measure 10.1 that "a significant part of the upper Calder catchment lies within the South Pennines Moors SAC/SPA and due regard will be paid to the particular requirements for any proposal having an effect on the water environment in the area.." The inclusion of this statement in measure 10.1 should help to avoid adverse effects on the integrity of these European sites.

- LFRMS Objective 11: Identify projects and programmes which are affordable, maximising capital funding from external sources** – while measure 11.3 is not considered likely to have a significant effect on the integrity of European sites as it would not lead directly to physical works or actions, the other two measures associated with this objective (**measures 11.1 and 11.2**) could potentially have a significant effect on the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2), although the effects are uncertain at this stage without more information about the type and location of actions that may result from the measures. Measure 11.1 states that a specific programme of projects will be developed, and although it is unclear at this stage what those works would be, any actions that could affect water flows and the hydrological regimes downstream of the works could potentially affect the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2), depending on the location of those works. However, such effects are less likely to impact upon the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2), because of their boundaries being in the upper catchments only of the Rivers Colne and Dearne. Any actions taking place within the boundary of the South Pennine Moors SAC/SPA (Phases 1 and 2) could potentially affect the integrity of those sites as a result of physical disturbance. The removal of culverts (under measure 11.2) could also affect hydrological regimes downstream by altering water levels and, if culvert removal takes place within the boundaries of the South Pennine Moors SAC/SPA (Phases 1 and 2), there may be direct physical disturbance to the qualifying habitats and species of those sites as a result of the removal works.

Recommendations

- 4.7 As described above, LFRMS Objective 6 should help to provide overall safeguarding for European sites from works and activities implemented through the LFRMS, as it relates to the overall approach taken to flood risk management in Kirklees. The initial HRA screening note that was produced in relation to an early internal draft of the LFRMS (for use by the Council as it produced the draft LFRMS for public consultation) recommended that **additional wording should be added to measure 6.2 to clearly state that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2)**. This would reduce the likelihood of any of the measures listed above for LFRMS objectives 3, 7, 8, 10 and 11 having significant effects on the integrity of the European sites in and around Kirklees. In light of that recommendation, the wording of the measure in the final consultation version of the LFRMS has been amended to state that *"when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2). An Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, and European designated sites will be fully referenced in the Plan"*.

- 4.8 The initial HRA screening note also noted that while measure 10.1 already contained reference to the South Pennine Moors European sites, the terminology used was not correct. It was therefore recommended that the wording to measure 10.1 should be amended to recognise the presence of the South Pennine Moors SAC, as well as the SPA, and that in all instances the sites should be referred to as the 'South Pennine Moors' SAC and SPA, rather than the 'South Pennines'. This recommendation has now been addressed and the correct terminology is used in the final LFRMS (February 2013).

In-combination effects

- 4.9 As described in **Chapter 3**, a review of other plans, policies and programmes that may result in in-combination effects with the Kirklees LFRMS was undertaken. The findings of this review can be seen in full in **Appendix 2**. Note that the review has been updated since it was originally presented in the HRA report for the Draft LFRMS (June 2012) to reflect the latest developments with regards to development plans in adjacent authorities. As with other tasks involved in the HRA, the review that has recently been carried out for the HRA of the Kirklees Core Strategy has been drawn upon. Only the Core Strategies of those authorities that were found in that review to have the potential for negative effects on European site in Kirklees (+15km) are presented in **Appendix 2**.
- 4.10 The status of the Regional Spatial Strategies (RSSs) is currently uncertain, with the Coalition Government currently going through the process of securing their revocation; however, until the situation is legally finalised, the relevant RSSs remain a material consideration in the preparation of development plan documents. The RSSs were considered in the recent review of plans and programmes that was undertaken as part of the HRA of the emerging Kirklees Core Strategy, and it was found that the HRA work carried out in relation to the relevant RSSs concluded that they were not expected to have a negative effect on the integrity of any European sites in and around Kirklees. As such, no in-combination effects between the RSSs and the LFRMS are considered likely and the RSSs have not been presented in **Appendix 2**.
- 4.11 The HRA screening of the Kirklees Core Strategy identified uncertainty about the potential for significant effects on the South Pennine Moors SAC/SPA (Phases 1 and 2) in relation to housing, employment and mineral-related development proposed in the south-west of the district. Any such effects could potentially combine with similar effects that may be caused by development proposed in the Oldham, Rochdale, Derbyshire Dales and High Peak Core Strategies within or near to the South Pennine Moors SAC/SPA (Phases 1 and 2), for example as a result of increased traffic, recreation pressure or renewable energy generation. The pressure of this development could combine with the potential impacts of measures in the LFRMS in relation to direct physical disturbance or interruptions to hydrological regimes on the South Pennine Moors SAC/SPA (Phases 1 and 2).
- 4.12 The HRA work that has been undertaken in relation to the Oldham and Rochdale Core Strategies highlighted the potential for effects on the Rochdale Canal SAC (e.g. as a result of new development having a shading effect on the canal). However, there is unlikely to be any in-combination effects arising from measures in the Kirklees LFRMS because none of the LFRMS measures are expected to lead to activities that are physically, ecologically or hydrologically connected with the Rochdale Canal SAC.
- 4.13 The likelihood of in-combination effects in relation to Denby Grange Colliery Ponds SAC can also be ruled out as none of the HRA work relating to development proposed in neighbouring authorities has highlighted likely impacts on the SAC that could combine with any effects arising from the Kirklees LFRMS.
- 4.14 The review of the Catchment Abstraction Management Strategies (CAMS) for Aire and Calder and Tame, Goyt and Etherow has highlighted the fact that certain catchments that the South Pennine Moors SAC/SPA (Phases 1 and 2) lies within, including the catchment of the River Colne, are assessed as having 'no water resource available', and therefore any changes in flow or groundwater levels could adversely affect these sites. Therefore, the likelihood of significant effects from LFRMS measures identified above (3.1, 7.2, 7.3, 8.2, 10.1, 11.1 and 11.2) that could affect water levels at the South Pennine Moors SAC/SPA (Phases 1 and 2) is increased due to the

combination with the limited water resources identified in their surrounding catchments. However, as discussed above, the potential impacts would only be likely to occur from implementation of those measures if the maintenance and flood alleviation works they describe take place within the upper reaches of the Rivers Colne and Dearne.

- 4.15 The safeguarding provided within measure 6.2, which will ensure that all works are undertaken in accordance with the Environmental Management Plan that will be prepared for the District, and that the Council will commit to carrying out formal Environmental Impact Assessment for any flood risk management proposals where significant environmental risks may occur, should help to ensure that significant effects on the integrity of the South Pennine Moors SAC/SPA (Phases 1 and 2) will not occur due to implementation of the LFRMS.

5 Conclusions

- 5.1 The HRA of the Kirklees LFRMS has been undertaken in accordance with currently available guidance and is based on a precautionary approach, as required under the Habitats Regulations. The findings of the screening stage were summarised in **Chapter 4** of this report and the justification for these is explained in more detail in **Appendix 3**.
- 5.2 The HRA screening conclusions for the Kirklees LFRMS are as follows:
- None of 32 measures in the LFRMS are likely to have a significant effect on the Rochdale Canal SAC or Denby Grange Colliery Ponds SAC, either alone or in combination with other land use plans.
 - Of the 32 measures in the LFRMS, 25 measures were also able to be screened out from further assessment because they are unlikely to have significant effects on the other European sites within 15km of Kirklees District.
 - For the remaining seven measures (3.1, 7.2, 7.3, 8.2, 10.1, 11.1 and 11.2), the potential for significant effects has been identified for the South Pennine Moors SAC and SPA (Phases 1 and 2) but the conclusion is uncertain because of a lack of detailed information about the nature and location of the actions likely to result from the measures, i.e. how and where the measures would be implemented.
- 5.3 Although the LFRMS does not specify the precise nature and location of the actions that may result from the measures, most of the potential effects identified through this screening exercise relate to the South Pennine Moors SAC and SPA (Phases 1 and 2), due to the fact that those sites are located within the boundaries of Kirklees District and so are more likely to experience direct physical effects from changing land uses or land management practices within the District. These effects could also combine with effects from development proposed in Kirklees (through the emerging Core Strategy) and in adjacent authorities to the south and west of the District. However, the effects are only likely to occur if works undertaken to implement the seven measures occur within the upper catchments of the Rivers Colne and Dearne.
- 5.4 The way in which a measure is implemented can affect the potential for it to have a significant effect on European sites. While this type of uncertainty has already been reduced where possible by providing for mitigation through the LFRMS measures (in particular measure 6.2), some uncertainty of this type inevitably remains until specific proposals are developed to carry out flood management activities. Therefore, further assessment of the LFRMS at this stage would be unlikely to reduce the level of uncertainty, and so in order to address the potential for the LFRMS measures to have an adverse effect on European sites, and to ensure that this does not occur, measure 6.2 has been included in the LFRMS. The safeguards in measure 6.2 aim to directly address the potential for such effects by ensuring that all works are undertaken in accordance with the Environmental Management Plan that will be prepared for the District, and that the Council will commit to carrying out formal Environmental Impact Assessment for any flood risk management proposals where significant environmental risks may occur. **Chapter 4** describes how an earlier iteration of the HRA for an earlier draft of the LFRMS made recommendations for additional text that could be added to that measure to strengthen the mitigation that it provides, and that this recommendation has now been implemented in the final version of the LFRMS.
- 5.5 Based on the above, it is concluded that sufficient flexibility and appropriate caveats have been built into the Kirklees LFRMS to ensure that the potential for adverse effects on the integrity of any European sites will be considered as the LFRMS is implemented. **It can therefore be concluded that the LFRMS is unlikely to have an adverse effect on any European site, either alone or in-combination with other plans or projects, and therefore an Appropriate Assessment is not required.**

Land Use Consultants
February 2013

Appendix 1

Attributes of European Sites in Kirklees District (+15km)

Site Name	Area (ha)	Location	Qualifying Features	Key vulnerabilities and environmental conditions to support site integrity
European Sites within Kirklees District				
South Pennine Moors SAC	64,983	Fragmented sites to the north and west of the boundary, some within the boundary and some parts further out towards the 15km buffer boundary.	European Dry Heaths Blanket Bogs Old Sessile Oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles Northern Atlantic Wet Heaths with <i>Erica Tetralix</i> Transition mires and quaking bogs	<ul style="list-style-type: none"> • Grazing and moorland management regime. • Hydrological regime. • Disturbance levels.
Peak District Moors SPA (South Pennine Moors Phase 1)	45,270	Fragmented site lying to the south and west of Kirklees, slightly within the district boundary to the south and stretching out towards the 15km buffer.	During the breeding season the area regularly supports: Short Eared Owl <i>Asio Falmmeus</i> Merlin <i>Falco Columbarius</i> Golden Plover <i>Pluvialis apricaria</i>	<ul style="list-style-type: none"> • Major urban and industrial centres near to the Peak District Moors provide significant visitor pressure. • Grazing pressure is generally being lowered and appropriate burning encouraged by two separate Environmental Stewardship Agreements which encourage and support habitat restoration. • Notwithstanding these agreements, evidence suggests that breeding birds in the south-west of the area may be declining on both open moorland and enclosed rough grazing land, possibly due to general agricultural improvement of the surrounding areas which are used by some species for some of their habitat requirements; e.g. golden plovers feed on in-by land off the moor.
South Pennine Moors SPA (Phase 2)	20,936	Fragmented site lying to the north and west of Kirklees, slightly within the district boundary and stretching out over the 15km buffer line.	During the breeding season the area regularly supports: Short Eared Owl <i>Asio Falmmeus</i> Merlin <i>Falco Columbarius</i> Golden Plover <i>Pluvialis apricaria</i>	<ul style="list-style-type: none"> • Large numbers of people use the area for recreational activities: large nearby urban areas. • Maintenance of the ecosystems on which the birds depend relies on appropriate grazing levels and burning regimes, and overgrazing by sheep is a key pressure on

Site Name	Area (ha)	Location	Qualifying Features	Key vulnerabilities and environmental conditions to support site integrity
			<p>Common Sandpiper <i>Actitis hypoleuca</i> Dunlin <i>Calidris alpina schinzii</i> The Twite <i>Carduelis flavirostris</i> Common Snipe <i>Gallinago gallinago</i> Eurasian Curlew <i>Numenius arquata</i> Northern Wheatear <i>Oenanthe oenanthe</i> Whinchat <i>Saxicola rubetra</i> Common Redshank <i>Tringa totanus</i> Ring Ouzel <i>Turdus torquatus</i> The Northern Lapwing <i>Vanellus vanellus</i></p>	<p>the site.</p> <ul style="list-style-type: none"> • Management of grazing is further complicated by the presence of a large number of commons within the SPA. • Pressures outside the site, in particular the loss of bird feeding areas through agricultural intensification, increase the vulnerability of the bird populations.
European Sites within 15km of Kirklees District				
Denby Grange Colliery Ponds SAC	18	Very small site located approximately 2km outside of the site boundary to the east.	Great Crested Newt <i>Triturus cristatus</i>	<ul style="list-style-type: none"> • Maintenance of pond area, depth, water quality, vegetation and lack of fish. • Maintenance of a buffer of appropriate terrestrial habitat.
Rochdale Canal SAC	25	A long thin site to the west of Kirklees, stretching inwards from the 15km buffer to around 5km from the site boundary.	Floating Water Plantain <i>Luronium Natans</i>	<ul style="list-style-type: none"> • Dredging, draining and pollution of the canal. • Shading of the canal as a result of development nearby. • Increased boat traffic on the canal. • Use of herbicides in or adjacent to the canal.

Appendix 2

Plans, Policies and Programmes with the Potential for In-Combination Effects

Plans, Policies and Programmes with the Potential for In-Combination Effects

Kirklees Core Strategy: Proposed Submission version (May 2012)

Housing

22,470 new homes will be provided in Kirklees over the plan period. Of the new homes, 34% will be provided in Huddersfield and a further 30% will be in Dewsbury and Batley. The remainder will be spread amongst the smaller towns and villages across the District.

Employment Land Provision

The largest area of new employment land to be provided in Kirklees is 42ha to be provided at Cooper Bridge, Huddersfield. A further 60ha will be distributed across North Kirklees and 20ha in South Kirklees. The allocations set out in the Core Strategy will involve development on greenfield land, as it was not possible to identify suitable opportunities on appropriate brownfield sites in all areas.

HRA Findings

The HRA Screening Report for the Kirklees Core Strategy (May 2012) concluded that there are uncertainties associated with some of the policies with regards to the potential for adverse impacts on European sites, in particular the potential for significant effects on the South Pennine Moors SAC/SPA (Phases 1 and 2) in relation to housing, employment and mineral-related development proposed in the south-west of the district. However, it was recognised that further assessment (through the Appropriate Assessment stage of the HRA) would not enable any of those uncertainties to be removed due to a lack of information at the present time with regards to the exact nature and location of some of the development that may result from Core Strategy policies. It was concluded that sufficient flexibility and appropriate caveats have been built into the Core Strategy to allow for the replacement of any elements of the plan if they are demonstrated to have an adverse effect on the integrity of any European sites, and an Appropriate Assessment would not enable any more certain conclusions to be drawn at this stage with regards to the likely effects of the Core Strategy.

High Peak Local Plan Options (2012)

High Peak borough lies to the south of Kirklees. Until recently, the Borough Council was pursuing the production of a Joint Core Strategy with Derbyshire Dales District Council (which lies to the south of High Peak and does not border Kirklees). However, the two authorities have recently decided to instead pursue the production of individual new-style Local Plans. High Peak Borough Council has recently completed an Options consultation.

Housing

Three separate housing targets were proposed and consulted upon – the preferred option is for a total of 5,830 new homes between 2006 and 2028. The two alternative options are for 6,490 and 7,150 new homes respectively.

Employment Land Provision

It is recognised that the evidence suggests that High Peak has more land available for business or industrial uses than is needed.

HRA Findings

No HRA work has yet been carried out in relation to the emerging Local Plan for High Peak.

Oldham Joint Core Strategy and Development Management Policies: Adopted Version (November 2011)

Oldham borough lies to the west of Kirklees.

Housing

The council will allocate sufficient land, in whole or as part of a mixed use scheme in the Site Allocations DPD, to accommodate at least 289 dwellings per year, net of clearance, on average over the LDF plan period up to 2026, informed by the findings of the SHLAA. At least 80% of the housing provision will be on previously developed land. Around 60% of the new dwellings will be provided in East and West Odldham, while 10% will be distributed within each of Failsworth and Hollinwood, Saddleworth and Lees, Royton, Shaw and Crompton, and Chadderton.

From 2010/11 to 2025/26 the borough will provide sufficient land for 4,624 new dwellings.

Employment Land Provision

Approximately 82 ha of land will be allocated for business, industry and office developments. The focus will be on areas that are accessible by public transport, walking and cycling as alternatives to the car. This includes Oldham Town Centre and the centres of Chadderton, Failsworth, Hill Stores, Lees, Royton, Shaw and Uppermill. Other accessible employment areas – known as 'Business and Employment Areas' and 'Saddleworth Employment Areas' – will be designated as part of Oldham's economic land supply. The principal employment areas will form an 'arc of opportunity' from Oldham Town Centre through to Foxdenton and on to Hollinwood Business District with its links to Manchester City Centre.

HRA Findings

The November 2011 HRA Report for the Adopted Core strategy concluded that the **Rochdale Canal SAC** may be adversely affected by the plan as a result of development within the vicinity of the canal corridor; however the safeguards in place within the DPD should help to ensure that any such effects are mitigated. In addition, it recommends that any developments coming forward within the areas identified in the Plan as Hollinwood, Chadderton Technology Park, Foxdenton, and Failsworth District Centre be referred for Appropriate Assessment as part of the development management process so that appropriate mitigation for any damaging impacts can be properly planned and implemented once planning applications are received.

Rochdale Core Strategy: Publication (January 2013)

Rochdale lies to the west of Kirklees.

Housing

At least 400 net additional dwellings will be delivered each year up to 2028. The majority will be developed in the south of the borough, which is further from Kirklees. In the north, the scale and density of development will reflect the accessibility and character of the Pennine fringe. New homes will be delivered through existing commitments and identified sites, mixed use developments and specific site allocations in the Allocations Development Plan Document.

Employment Land Provision

Up to 210ha of employment land will be provided, mainly in the economic growth corridors in the south of the borough:

- Rochdale town centre/Kingsway Corridor
- Sandbrook Park/Crown Business Park/Castleton Corridor
- Middleton Town Centre/Oldham Road Corridor
- South Heywood employment sites
- Stakehill business park

Major office development will be focused in town centres. No further employment land will be allocated in the north of the borough; rather the plan will seek to maintain existing levels of employment.

HRA Findings

The January 2013 HRA Report for the Rochdale Core Strategy concluded that providing the recommended mitigation measures are put into place, controlled development within the identified areas can proceed without harm being caused to the special interests of the European sites. In particular, it is recommended that any developments coming forward which may have

an adverse impact on the **Rochdale Canal SAC** are subject to HRA as part of the development management process.

WATER PLANS

Catchment Abstraction Management Strategies

The Environment Agency has prepared **Catchment Abstraction Management Strategies** (CAMS) which are six-year plans detailing how the EA is going to manage water resources in each catchment. The CAMS seek to understand how much water the natural environment needs, how much water is available for abstraction, how much water is currently licensed to be used and whether this balances with what is available. Each area within the catchment is assigned a 'resource availability status' which indicates whether the catchment resources are in balance or not.

Aire and Calder

The CAMS for the Aire and Calder catchment sets out how the Environment Agency will manage water abstraction until 2011 (an updated Strategy for beyond 2011 has not yet been published). The CAMS covers an area of approximately 2000km², stretching from Malham and Todmorden in the west to the River Ouse in the east. The area is mainly urban, covering the towns of Huddersfield, Bradford, Leeds and Wakefield.

There are a total of 544 abstraction licences in the Aire and Calder catchment. The CAMS found that the River Colne and Sherwood Sandstone management units were over-licensed and that the River Worth unit had no water resource available.

The CAMS also highlighted the potential impacts of abstraction on the **South Pennine Moors SAC/SPA**, stating that any changes in flow or groundwater levels could affect the site.

Tame, Goyt and Etherow

The CAMS for the Tame, Goyt and Etherow catchment sets out how the Environment Agency will manage water abstraction until 2010 (although this is now past, an updated Strategy has not yet been published). The CAMS covers an area of 511km² and comprises two main sub-catchments – the River Tame and the River Goyt/Etherow. These catchments drain the area to the east, north east and south east of Manchester, taking in the areas of Denshaw, Glossop, Stockport, Whaley Bridge and ultimately forming the River Mersey.

Within the CAMS there are 39 licensed groundwater abstractions, used mainly for agriculture and private water supply, and 173 licensed surface water abstractions used predominantly for agriculture and the public water supply industry.

The CAMS found that the Upper River Tame and Glossop Brook unit had no water resource available. Large areas of the **South Pennine Moors SAC/SPA** fall within this unit.

Northern Manchester

The Northern Manchester catchment covers an area of 793 km² and includes the catchment basins of the River Roch, River Irk, River Medlock, River Croal and the River Irwell. Although the tributaries start within the foothills of the Pennine hills and moorland regions, the majority of the catchment is industrial or residential land, covering the historically important mill towns of Bolton, Bury, Rochdale, Rawtenstall, Oldham, Salford and the centre of Manchester.

The CAMS found that the River Croal and the Upper Roch management units had no water resources available. The **South Pennine Moors SAC/SPA**, as well as part of the **Rochdale Canal SAC**, falls within this unit. It also found that Irwell Valley management unit was over-licensed, and part of the **Rochdale Canal SAC** also lies here.

Catchment Flood Management Plans

The Environment Agency has produced Catchment Flood Management Plans (CFMPs) which identify broad policies for sustainable flood risk management in the context of the whole catchment and for the long term (50-100 years). They do not determine specific flood risk reduction measures or management approaches for flooding issues in a catchment. Whilst it is not possible to understand in detail what will occur in 50 to 100 years' time, general trends can be projected to test the sustainability of plans. CFMPs will be reviewed as appropriate to reflect changes in the catchment.

Calder (Summary Report, December 2010)

Kirklees District lies across four sub-areas within the Calder catchment - Colne, Holme and Fenay Beck, Brighouse and Greetland, Mid Calder and Spen.

Within the Brighouse and Greetland sub-area, which covers the north western part of the district, the identified policy approach is to increase flood risk management through the use of sustainable urban drainage techniques, developer contributions and the robust implementation of PPS25. It is recognised that the location, layout and design of development are important factors in managing future flood risk and that regeneration and redevelopment of some areas offer an opportunity to reduce flood risk,

Within the Spen sub-catchment, which covers some of the north east of the district, the planned approach involves partnership working, in particular to further understanding of the flood risk within the sub-area. The potential for new raised defences and drainage infrastructure will also be explored.

Within the Mid-Calder sub-catchment, which covers some of the north east of the district, the planned approach involves increased flood risk management by maintaining flood defence assets and improving the application of urban design principles (including PPS25 recommendations). It is recognised that redevelopment and regeneration offer a crucial opportunity to reduce flood risk, and that policies in local plans provide a tool to achieve more sustainable flood risk management.

Within the Colne, Holme and Fenay Beck sub-area, which covers the southern and western parts of Kirklees district, the planned approach involves partnership working. It is recognised that the ability to improve the condition and function of the upland environment to reduce runoff rates and the frequency of local floods is of particular importance.

Appendix 3

HRA Screening of the final Kirklees LFRMS (February 2013)

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
Objective 1: Improve the level of understanding of local flood risk within the LLFA				
1.1 Record drainage and flood assets	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for developing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
1.2 Maintain a public asset register	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it will ensure that information associated with flood risk management is available to the public.	N/A
1.3 Designating flood/drainage assets	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to the status of existing flood/drainage assets.	N/A
1.4 Recording/mapping flood incidents	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for developing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
1.5 Carry out flood investigations	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for developing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could	N/A

LF RMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LF RMS
			otherwise potentially affect the integrity of European sites.	
1.6 Assessment of high flood risk locations in SWMP	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for developing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
1.7 Improve skills and knowledge of FRM officers	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it will ensure that the Council is well-prepared and equipped for developing and implementing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
1.8 Information from stakeholder engagement	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for the development of appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
Objective 2 - Improve the level of understanding of local flood risk amongst partners and stakeholders				
2.1 Publish a clear strategy and communicate it	N/A	N/A	No – the measure will not itself lead to physical works or actions. Some of the other measures within the LF RMS may have a significant effect on European sites	N/A

LF RMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LF RMS
			(the measures are assessed individually below) but the publication of the LF RMS in a clear and accessible format will not in itself lead to significant effects.	
2.2 Develop information strategy to improve partner and stakeholder knowledge	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it aims to make technical information regarding flood risk accessible to all people.	N/A
2.3 Improve and maintain the Councils FRM web pages	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it aims to improve communication between the Council (the LLFA) and the public via the Council’s website.	N/A
Objective 3 - Ensure that local communities understand their responsibilities in relation to local flood risk management				
3.1 Publish and distribute information explaining responsibilities, local flood risk, property protection/ resilience etc.	Implementation of flood risk management measures by landowners.	Uncertain, depending on the type of flood risk management measures the Council advises landowners to implement, but could include: Changes to hydrological regimes. Physical disturbance.	Uncertain – while the focus of the measure is primarily on collating and distributing information to landowners regarding potential flood risk, which will not in itself have any significant effect on European sites, the measure specifies that advice will be given to landowners with regards to measures that they could employ to manage flood risk. Depending on what these measures involve (which is not clear at this stage), and the location of land on which such actions are taken, there may be the potential for significant effects. The types of potential effects are uncertain but could include interruption to hydrological regimes or physical disturbance. Direct physical effects could potentially occur wherever landowners take action within Kirklees District (meaning that only the South	Measure 6.2 provides overall mitigation for other objectives in the LF RMS, stating that when implementing the measures set out in the LF RMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			<p>Pennine Moors SAC and SPA (Phases 1 and 2) may be affected by physical disturbance). It is recognised that these sites are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, action taken by landowners across much of the District is considered unlikely to affect the sites as a result of changes to hydrology downstream.</p> <p>It is also recognised that the implementation of flood risk management measures by landowners could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species) occurring.</p>	<p>Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.</p>
3.2 Involve local communities in local initiatives and schemes	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to increasing community engagement with flood risk management.	N/A
Objective 4 - Maximise the benefits from partnership working with flood risk partners and our stakeholders				
4.1 Continue to develop the Kirklees Flood Partnership and contribute to the Yorkshire LLFA Liaison Group and Yorkshire Action and Learning Alliance	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the Council’s evidence base for developing appropriate flood risk management measures. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
4.2 Ensure that policies and programmes promoted through the Strategy complement and support works across the rest of the Calder and Don catchments	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to the need to ensure compatibility and co-operation between the LFRMS and other plans and strategies. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
Objective 5 - Actively manage flood risk associated with new development proposals				
5.1 Develop and apply a robust local policy on FRM and drainage solutions on new development sites	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to establishing criteria for the incorporation of flood risk management measures that will be applied to new development coming forward in the District as a result of other plans, with the aim of reducing flood risk. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
5.2 Develop a process with the Planning Department to create clear advice and direction to developers on FRM and Drainage	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to the application of criteria to new development coming forward in the District as a result of other plans, with the aim of reducing flood risk. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
5.3 Establish the SuDS Approval Body (SAB)	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it will help to ensure that skills and knowledge relating to SuDS can be applied to new development coming forward in the District. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
Objective 6 - Take a sustainable approach to FRM, maximising environmental and social benefits from policies and programmes				
6.1 Ensure the environmental consequences of implementing the LFRMS are considered against the technical, economic and social benefits	N/A	N/A	No – the measure will not itself lead to physical works or actions. Undertaking SEA of the LFRMS should help to ensure that there are no significant negative effects on European sites as the SEA will include consideration of the potential impacts of the LFRMS on biodiversity.	N/A
6.2 Work with the Environment Agency to embed policies from local River Basin Management Plans, local environmental policies and “European” protected sites into FRM procedures and	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather committing to carrying out Environmental Impact Assessment in relation to any proposals that may have an environmental effect will help to reduce the potential for significant negative effects, including on European sites. In addition, the measure states that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental	N/A

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
programmes			Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, and European designated sites will be fully referenced in the Plan.	
Objective 7 - Improve and/or maintain the capacity of existing drainage systems by targeted maintenance				
7.1 Identify highest risk open and closed watercourses, highway drains and other drainage/flood features	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the evidence base available to the Council (the LLFA) for the management of flood risk. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
7.2 Develop an affordable cyclical maintenance regime based on risk	Maintenance of watercourses to maximise the drainage of surface water.	Physical disturbance. Changes to hydrological regimes.	Uncertain - Maintaining watercourses to maximise the drainage of surface water could potentially result in direct physical disturbance to the South Pennine Moors SAC/SPA (Phases 1 and 2) if works are carried out within those sites. In addition, works could affect water levels downstream of where they are carried out. However, it is recognised that the South Pennine Moors SAC and SPA (Phases 1 and 2) are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, action taken by landowners across much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream. <u>The maintenance of watercourses should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and the</u>	The measure already states that the maintenance of watercourses will be 'balanced with sensitive treatment of the biodiversity elements', which provides some safeguarding for potential effects on European sites. Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			<p>measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species) occurring.</p>	<p>potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.</p>
<p>7.3 Implement a responsive, reactive maintenance regime based on risk</p>	<p>Maintenance of watercourses to maximise the drainage of surface water.</p>	<p>Physical disturbance. Changes to hydrological regimes.</p>	<p>Uncertain - Maintaining watercourses to maximise the drainage of surface water could potentially result in direct physical disturbance to the South Pennine Moors SAC/SPA (Phases 1 and 2) if works are carried out within those sites. In addition, works could affect water levels downstream of where they are carried out. However, it is recognised that the South Pennine Moors SAC and SPA (Phases 1 and 2) are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, action taken by landowners across much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream.</p> <p>The maintenance of watercourses should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and the</p>	<p>Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a</p>

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species) occurring.	consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.
Objective 8 - Encourage proactive, responsible maintenance of privately-owned flood defence and drainage assets				
8.1 Identify highest risk private flood defence and drainage assets	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to improving the evidence base available to the Council (the LLFA) for the management of flood risk. This will help to reduce the overall flood risk in and around Kirklees which could otherwise potentially affect the integrity of European sites.	N/A
8.2 Develop technical advice for owners to guide them in preparing local maintenance plans	Proactive watercourse maintenance measures to be undertaken by private landowners.	Uncertain, depending on the type of maintenance measures the Council advises landowners to implement, but could include: Changes to hydrological regimes. Physical disturbance.	Uncertain – watercourse maintenance measures undertaken by private landowners on the advice of the Council could have a significant effect on the integrity of European sites if water levels at the sites were to be affected or if works taking place within site boundaries were to result in direct physical disturbance. While the South Pennine Moors SAC and SPA (Phases 1 and 2) lie within the boundary of Kirklees District and so could potentially be affected by physical disturbance, the potential for such impacts is uncertain without more information about the type of maintenance measures that landowners may be encouraged to implement. In addition, it is recognised that the South Pennine Moors SAC and SPA (Phases 1 and 2) are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne.	The measure already states that maintenance plans will manage and maintain both 'a healthy and attractive biodiverse environment', which provides some safeguarding for potential effects on European sites. Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			<p>As such, action taken by landowners across much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream.</p> <p>The maintenance of watercourses should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and the measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species) occurring.</p>	<p>potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.</p>
8.3 Establish risk-based consenting and designation processes	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to the procedures that will be used by the Council to permit actions proposed under other LFRMS measures, which have been assessed separately for their potential impacts on European sites.	N/A
<p>Objective 9 – Establish a robust policy on water management and use available information on flood risk to assess the suitability of the allocation of sites for different land uses through the Local Development Framework process</p>				
9.1 Use available information on flood risk to identify appropriate development potential	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it aims to ensure that development coming forward under other plans is directed to areas of lower flood risk. The effects of development coming forward at sites allocated within the emerging Kirklees Core Strategy have been assessed separately for the potential impacts on European sites through the HRA	N/A

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			of the Core Strategy.	
Objective 10 - Maximise opportunities to reduce surface water run-off from the upper catchments				
10.1 Develop proposals to engage with significant landowners to employ land management techniques and initiatives which help to reduce the rate of surface water run-off	Land management actions to reduce surface water run-off rates.	<p>Uncertain, depending on the type of land management actions that are encouraged, but could include:</p> <p>Changes to hydrological regimes.</p> <p>Physical disturbance.</p>	<p>Uncertain – land management actions undertaken by private landowners on the advice of the Council could have a significant effect on the integrity of European sites if water levels at the sites were to be affected or if works taking place within site boundaries were to result in direct physical disturbance. While the South Pennine Moors SAC and SPA (Phases 1 and 2) lie within the boundary of Kirklees District and so could potentially be affected by physical disturbance, the potential for such impacts is uncertain without more information about the type of land management actions that landowners may be encouraged to implement. In addition, it is recognised that the South Pennine Moors SAC and SPA (Phases 1 and 2) are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, action taken by landowners across much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream.</p> <p>Reduced run-off rates should serve to regulate water flow which could have a positive effect on maintaining the integrity of European sites, and the measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm</p>	Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			the qualifying habitats and species) occurring.	
Objective 11 - Identify projects and programmes which are affordable, maximising capital funding from external sources				
11.1 Develop a pragmatic programme of schemes and initiatives which are likely to be funded through the National Programme or Local Levy	Uncertain at this stage, depending on the actions resulting from the programme of projects to be developed.	<p>Uncertain at this stage, depending on the actions resulting from the programme of projects to be developed, but could include:</p> <p>Changes to hydrological regimes.</p> <p>Physical disturbance.</p>	<p>Uncertain - The effects of this measure will depend on what actions are included in the programme of suitable projects which will be developed. Actions could have a significant effect on the integrity of European sites if water levels at the sites were to be affected or if works taking place within site boundaries were to result in direct physical disturbance. While the South Pennine Moors SAC and SPA (Phases 1 and 2) lie within the boundary of Kirklees District and so could potentially be affected by physical disturbance, the potential for such impacts is uncertain without more information about the type of actions that will be implemented. In addition, it is recognised that the South Pennine Moors SAC and SPA (Phases 1 and 2) are located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, action implemented across much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream.</p> <p>It is likely that actions taken will be designed to increase drainage and reduce run-off rates, which could have a positive effect on maintaining the integrity of European sites by regulating water flow. The measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species)</p>	Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within which European designated sites will be fully referenced.

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
			occurring.	
11.2 Develop and implement a policy on de-culverting, consistent with the LDF Core Strategy using evidence in the SWMP and RBMP to aid prioritisation	Removal of culverts.	Changes to hydrological regimes. Physical disturbance.	<p>Uncertain - The removal of culverts could affect hydrological regimes downstream by affecting water levels. Depending on the location of culverts to be removed, this could affect the integrity of European sites including the South Pennine Moors SAC which is sensitive to changes in hydrology. However, it is recognised that the South Pennine Moors SAC is located in the south west of the District, on higher ground which comprises the upper catchments of the rivers Colne and Dearne. As such, the removal of culverts within much of the District is considered unlikely to affect these sites as a result of changes to hydrology downstream. However, if culvert removal takes place within the boundaries of the South Pennine Moors SAC/SPA (Phases 1 and 2) (the only European sites within the boundary of Kirklees District), there may be direct physical disturbance to the qualifying habitats and species of those sites as a result of the removal works.</p> <p>It is recognised that the removal of culverts should help to regulate water flood which could have a positive effect in terms of maintaining the integrity of European sites that are sensitive to changes in hydrology (South Pennine Moors SAC). The measure should also contribute to an overall reduction in flood risk which could have positive effects on maintaining the integrity of European sites by reducing the likelihood of flood events (which could otherwise harm the qualifying habitats and species) occurring.</p>	<p>The measure already states that removal of culverts under this measure could result in biodiversity benefits; therefore depending on the location of culvert removal works, there may be benefits for the South Pennine Moors SAC/SPA (Phases 1 and 2).</p> <p>Measure 6.2 provides overall mitigation for other objectives in the LFRMS, stating that when implementing the measures set out in the LFRMS, due regard will be given to the need to identify and avoid potential adverse effects on the integrity of European sites in and around Kirklees, in particular the South Pennine Moors SAC/SPA (Phases 1 and 2), and that an Environmental Management Plan will be developed to encourage a consistent approach in all FRM activities carried out across the district, within</p>

LFRMS Measures	Likely activities (operations) to result as a consequence of the measures	Likely effects if measure implemented	Is the measure likely to have significant effects on European site(s)?	Potential actions that may help to avoid or mitigate potential effects, and recommendations for LFRMS
				which European designated sites will be fully referenced.
11.3 Determine all other funding sources, Council, partners and other external, and maximise "match-funding"	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to establishing funding for the measures set out in the LFRMS which have been assessed separately for their potential effects on European sites.	N/A
Objective 12 - Ensure local FRM knowledge is aligned with the Councils emergency planning procedures				
12.1 Embed the LFRMS into response and recovery plans and use developing knowledge on flood risk to "tune" emergency procedures	N/A	N/A	No – the measure will not itself lead to physical works or actions; rather it relates to response and recovery procedures to react to flood events.	N/A